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PRIMULAS.—PRIMULAS.—PRIMULAS.
Sixteenth year of distribution.
WILLIAMS' SUPERB STRAIN, 1s. 6d. per doz., 10s. per 100.
CINERARIAS same price. Package and carriage free for cash with order. The above are strong, and fit for potting into 3-inch pots.
JOHN STEVENS, The Nurseries, Coventry.

HYACINTHS, TULIPS, CROCUS, &c.—The new Wholesale Trade CATALOGUE is now ready and will be forwarded post-free on application.
B. J. LOMANS, Bulb Grower, Haarlem, Holland.

Dahlias.
FRANCIS R. KINGHORN offers the following, in strong plants, in large 60's:—Juarezi, White Cactus (Constance), Fire King, Guiding Star; also the best Single and Pompon kinds, at low prices to the Trade and others.
Sheen Nurseries, Richmond, Surrey.

Now in Full Bloom.
BEGONIAS.—Gold Medal Prize Plants, presenting an unrivalled floral display. Visitors are cordially invited. Frequent trains from the City and from the West End to Catford and Forest Hill Stations.
LAING AND CO., Nurseries, Forest Hill, S.E.

KELWAY'S MODEL CINERARIA,
KELWAY'S MODEL PRIMULA,
KELWAY'S MODEL CALCEOLARIA,
2s. 6d. and 5s. per packet.
KELWAY AND SON, Langport, Somerset.

Now Ready.
TEA and NOISETTE ROSES, in pots, of best sorts only, in great quantity, and of best possible quality. Priced LIST gratis. A sample dozen carefully packed for travelling, will be put on Railway on receipt of 12s. 6d.
EWING AND CO., Sea View Nurseries, Havant, Hants (late of Eaton, near Norwich).

To the Trade and Large Buyers.
TEA and NOISETTE ROSES, fine Plants, in 48-pots. Purchasers' selection from 25 choice varieties from 60s. per 100. CUT ROSES supplied in large quantities.
EDWIN HILLIER, The Nurseries, Winchester.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

OUR SPECIAL ORCHID LIST, No. 74, is now out, with List of Mr. Edward Wallace's importations.
OUR JAPANESE MAPLES are now in full beauty: a visit of inspection is solicited. Two Bronze Medals have been awarded us for these.
OUR JAPANESE LILIES are now on view.
NEW PLANT AND BULB COMPANY, Colchester.

Now Ready, Strong Plants of
F. V. RASPAIL, the best winter-flowering Scarlet Double GERANIUM for Market.
Price, 8s. per 100, £3 10s. per 1000. Packed and put on rail.
JAS. HASLETT, Florist, Bolney, Hayward's Heath, Sussex.

Helleborus niger (Christmas Rose).
A. RIEMSCHNEIDER, NURSERYMAN, Brandenburg-on-Havel, by Berlin, having an immense stock of these useful Plants, can offer them at prices, per 100 or 1000, which defy competition. See CATALOGUE, which may be obtained, free of
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

WANTED, EUCHARIS, flowering Bulbs. Sample and price to
J. W. STEEL AND CO., Olantigh Nursery, Chigwell, Essex.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice FRUIT and FLOWERS.

SQUELCH AND BARNHAM Long Market, Covent Garden, London, W.C., REQUIRE a quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

For Present Sowing.
SUTTON'S FLORISTS' FLOWER SEEDS, post-free.

SUTTON'S CALCEOLARIA. THE BEST. "Some plants from your Calceolaria seed took first prize here last week. I never saw anything to equal them."—Sir A. RAMSAY.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON'S CINERARIA. THE BEST. "We have a most splendid display of Cinerarias from your strain; as many as 345 blooms on one plant, some 2½ inches across, and all perfect in shape."—Mr. J. WATTON.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON'S PRIMULA. THE BEST. "The strain of Primula you sent me is the best I have ever seen; they are beautifully fringed."—Mr. S. PEARCE.
Price, 2s. 6d., 3s. 6d., and 5s. per Packet, post-free.

SUTTON'S BEGONIA. THE BEST. "The Begonias are perfection. I have a small conservatory entirely filled with them, which are the admiration of all my friends."—J. DARLINGTON, Esq., Netherwood.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON'S GLOXINIA. THE BEST. "Allow me to congratulate you on your success in having obtained such a splendid strain of Gloxinias. From the packet of seed I had hundreds of plants, which cannot be equalled."—Mr. A. SMETS, Gardener to G. Taylor, Esq., Stourbridge.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON AND SONS, SEEDSMEN, by Royal Warrants, to H.M. the Queen, and H.R.H. the Prince of Wales, Reading.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant. CATALOGUES gratis. KELWAY AND SON, Langport, Somerset.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s.
BARR AND SON, King Street, Covent Garden, W.C.

BULBS TO BE SOLD at low prices:—
Double White NARCISSUS, Pheasant's Eye NARCISSUS, and DAFFODILS. A large Assortment of these superior Bulbs are offered to the Trade for the Season 1885. Apply to
W. A. BARKER, East Sheen, Surrey.

Berlin Lily of the Valley, finest Single Blooming Crowns; HELLEBORUS NIGER, &c., &c.
A. RIEMSCHNEIDER, NURSERYMAN, Brandenburg-on-Havel, by Berlin, Germany, has just published his Wholesale CATALOGUE of the above, which may be obtained post-free from his Agents,
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

Prize Fancy and Show Pansies.
JOHN DOWNIE, Beechhill Nurseries, near Edinburgh, begs to intimate that his Stock of PANSIES, including the newest and best in cultivation, are now in Full Flower, in one section alone there being at present over 30,000 fully expanded blooms. Inspection invited.

INDIAN AZALEAS.—Economise 30 per cent. and come with your orders to the largest Indian Azalea Gardens in Belgium. For the Illustrated English CATALOGUE, gratis, apply to
EUGENE VERVAET DE VOS, Indian Azalea Nursery, Swynaerde, near Ghent, Belgium.

PINES FOR SALE.
A fine lot of clean healthy plants.
All good varieties.
J. H. GOODACRE, Elvaston Castle Gardens, Derby.

East Lothian Intermediate Stocks.
THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., & 5s. each colour. Price to the Trade on application.
By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

PRIMULA.—Williams splendid strain, strong plants, 1s. 6d. per dozen, 10s per 100.
CINERARIA.—The best strain, 2s. per dozen, 15s. per 100.
The GARDENER, Holly Lodge, Stamford Hill, London, N.

10,000 Surplus Carpet Bedding Plants for Disposal.
ALTERNANTHERAS, 4 kinds, viz.:—Amœna spectabilis, magnifica, Cœcilis amœna, aurea nana, new dwarf from America, fine light golden colour; price 4s. per 100. No post-card or personal application entertained. Also about 500 COLEUS VERSCHAFFELTI, same price.
R. A. SMITH, Head Gardener, Catton, Norwich.

LOVEL'S STRAWBERRY RUNNERS.
Strong, healthy, and well-rooted.
Sample of 6 Plants, 3d. Price LIST free.
W. LOVEL AND SON.
Strawberry Growers, Driffield.

New Turnip Seed.
CHARLES SHARPE AND CO. have to offer, of crop 1885, their choice selected stocks of TURNIPS for present sowing.
CHARLES SHARPE AND CO., Seed Merchants, Sleaford.

## SALES BY AUCTION.

**Tuesday Next.**

ONCIDIUM VARICOSUM ROGERSII.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, on TUESDAY NEXT, July 7, at half-past 12 o'Clock precisely, a very grand importation of ONCIDIUM VARICOSUM ROGERSII, just to hand, in extra condition. Its easy culture, and its long golden spikes, make it one of the very finest Orchids extant.

On view morning of Sale, and Catalogues had.

**Tuesday Next.**

AERIDES LEONI, fine specimen and extra variety, in flower.
ORCHID SPECIES, in flower, very beautiful.
MORMODES LUXATUM EBURNEUM, in bud.
ODONTOGLOSSUM POLYXANTHUM, extra variety, in flower.
CATTLEYA MOSSIÆ, superb variety, in flower.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL the above fine ORCHIDS, in bloom, by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, July 7, at half-past 12 o'Clock precisely. Also the finest specimen of MORMODES LUXATUM EBURNEUM in existence; very fine importations of ONCIDIUM SUPERBIENS, PAPHINIA SANDERIANA, &c.

On view morning of Sale, and Catalogues had.

**Wanstead.**

CLEARANCE SALE of STOVE and GREENHOUSE PLANTS

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Park Gates, Wanstead (the residence of the late Mr. Alderman Finnis), on WEDNESDAY, July 8, at 2 o'Clock precisely, without reserve, a quantity of well-grown STOVE and GREENHOUSE PLANTS, viz.: fine Orange Trees, specimen Azaleas for exhibiting, Eucharis amazonica, Camellias, Lapageria rosea (good plants), Rhynchospermums, Orchids, and many other plants.

On view the day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and High Road, Leytonstone, E.

**Friday Next.**

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, July 10, at half-past 12 o'Clock precisely, a fine lot of IMPORTED ORCHIDS from Messrs. Shuttleworth, Carder & Co., in splendid condition, consisting of Lælia albida, very large masses, with several hundreds of bulbs; Epidendrum vitellinum majus, Lælia anceps, the very dark form; large masses with perfect leaves; Odontoglo-sum Rossii majus, O. citrosmum, O. crispum (Alexandræ), the very best type, and many others.

Also from Mr. J. E. Bonny a fine importation, in unusually good condition, of SCUTICARIA STEELII MAJUS, ONCIDIUM LANCEANUM, ZYGOPETALUM ROSTRATUM, IONOPSIS UTRICULARIOIDES, CORYANTHES MACRANTHA, PAPHINIA GRANDIS, &c.; a fine lot of DENDROBIUMS, ONCIDIUMS, and other ORCHIDS, together with 300 very fine bulbs of EUCHARIS AMAZONICA.

On view morning of Sale, and Catalogues.

**A large consignment of Mexican Orchids received** direct through a gentleman in Liverpool, to be sold without reserve, consisting of splendid masses of CATTLEYA CITRINA, LÆLIA ANCEPS, LYCASTE AROMATICA, L. DEPPEI, EPIDENDRUMS, CHYSIS BRACTESCENS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above in the Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, July 14.

**Eltham Park, Eltham, Kent.**

IMPORTANT UNRESERVED SALE of a valuable COLLECTION of STOVE and GREENHOUSE PLANTS, ORCHIDS, &c.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors of the late Thomas Jackson, Esq., to SELL by AUCTION, on the Premises, Eltham Park (fifteen minutes' walk from Eltham Railway Station), on THURSDAY, July 16, at 12 oClock precisely, a valuable Collection of well-grown STOVE and GREENHOUSE PLANTS, including many fine specimens, consisting of several fine Camellias and Azaleas, Greenhouse Rhododendrons, splendid examples of Eucharis, Dracænas, Crotons, Cycas revoluta, Anthuriums, Palms, Ferns; an assortment of ESTABLISHED ORCHIDS, amongst which are several large examples including Peristeria elata, Dendrochilum filiforme, Aërides, and Dendrobiums in variety, Cattleya Skinneri and C. speciosissima, Vanda tricolor and V. insignis, &c.

May be viewed day prior to Sale. Catalogues may be had of Mr. WAKELIN, the Head Gardener, on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

**Notice of Postponement of Sale.**

NEW ORCHIDS,

Angræcum Leoni, A. Scottianum, A. fuscatum, and other valuable species.

MESSRS. PROTHEROE AND MORRIS beg to announce that the SALE of the above, advertised to take place on Tuesday next, July 7, is unavoidably POSTPONED UNTIL FRIDAY, JULY 17.

**Thursday Next.**—(Sale No. 6,937.)

CYPRIPEDIUM SANDERIANUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, July 9, at half-past 12 o'Clock precisely, healthy imported plants just starting into growth of this splendid golden-yellow Cypripedium.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6937.)

TREE and other FERNS from NEW ZEALAND.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 9, a Consignment of TREE FERNS, TODEAS, ASPLENIUMS, &c., from New Zealand.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6937.)

ODONTOGLOSSUM ALEXANDRÆ ARTHURIANUM, and eleven other varieties, in one lot; LÆLIA PURPURATA, very fine importation.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, July 9, at half-past 12 o'Clock precisely, ODOTOGLOSSUM ALEXANDRÆ ARTHURIANUM, in flower. This variety belongs to the group which comprises VEITCHIANUM and JOHNSONIANUM, and is a grand thing. Eleven other ALEXANDRÆS will be sold with the above unique variety in one lot. Among the imported ORCHIDS will be found a grand lot of Laliæ purpurata, and the other importations are also fine and in extra condition.

On view morning of Sale, and Catalogues had.

**Special Sale of Orchids in Flower.**

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS IN FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 15, and he will be glad if gentlemen who are desirous of entering plants for this Sale will please send particulars of same not later than THURSDAY NEXT.

WANTED TO RENT, AT ONCE, about an ACRE of LAND, with Glass suitable for a Florist, also a COTTAGE, within 12 miles of London.

A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**Farnborough.**—(Sale No. 6212.)

Five minutes from Aldershot Camp Railway Station.

TO BE SOLD, with Possession, the NORTH CAMP NURSERY, nearly 17 Acres, with Dwelling-house, Stable, Cart-shed, and Greenhouse standing thereon. May be carried on as a Nursery or a Market Garden; but the Estate having 2000 feet available frontage will ultimately be valuable for building. Price £2400.

Apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside E.C.

**Nurseryman and Florist's Business.**

TO BE SOLD, a bargain, about £200. Splendid Shop, Greenhouses, Yard, &c., including Stock, Plants, Seeds, &c.

Apply, P. L. KINGSBURY, The Parade Nursery, 19 and 21, High Road, Lee, Lewisham, S.E.

TO BE SOLD, a NURSERY and FLORIST'S BUSINESS, doing a profitable return of between £700 and £800. Adjoining busy railway station, 8 miles from London. A rare chance for business man. £550 required for everything. No goodwill. Further particulars of Mr. LARNER, Valuer and Agent, 67, Paternoster Row, E.C.

TO BE DISPOSED OF, a FLORIST, SEED, and NURSERY BUSINESS, near one of the principal towns in the South of England. A first-rate opportunity for a practical gardener.

For particulars apply, by letter, to Mr. HENRY FRY, Romsey Road, Winchester.

NURSERY GARDENS, Maid.. Vale, W. Half an Acre of Land, frontage 125 feet; House, 8-rooms, and Shop; 11 Greenhouses, 3 Pits. Rent only £25. Lease 24 years. Apply to PROTHEROE AND MORRIS, 68, Cheapside, London, E.C.

GARDENER and FLORIST'S. — A good Business. Rising high-class neighbourhood. Price £200, including three Glasshouses; Stock, terms. 21 years. Park Nursery, London Road, Bromley, Kent.

**To Florists.**

TO LET, a commanding NURSERY, with Dwelling House attached; situated in the main road. West End position. Fitted up with all the necessary Plant. Now doing an extensive Trade. Long Lease.

For particulars apply to Mr. EAST, 185, Uxbridge Road, Shepherd's Bush, W.

**Southampton.**—(6209.)

About a mile from this important town.—To Market Gardeners and Others.

TO BE LET on LEASE, 25 Acres of Land, in a high state of cultivation. Rent £160 per annum Open to offer. Crops and Tillages at valuation, under £400.

Full particulars and orders to view of Messrs. PROTHEROE AND MORRIS, Market Garden Valuers, 67 and 68, Cheapside, E.C. Personally inspected.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

**Fifty Nurseries, Market Gardens, Florist and Seed** BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

**Horticultural Shows, Bazaars, &c.**

PROF. BOURNE, the famous VENTRILOQUIST, MAGICIAN, and HUMOURIST (of St. James' Hall), attends the above. For Programme and Testimonials, address Prof. BOURNE, Hoxton, London. Mention this paper.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

The GRAND SUMMER COMPETITION and ROSE SHOW will be held in the Waverley Market, on WEDNESDAY and THURSDAY, July 8 and 9. Scots Grey's Band each day and evening. Admission—Wednesday, 1 to 5, 1s.; 5 to 10, 6d. Thursday, 10 to 4, 1s.; 4 to 10 6d. Members' Tickets admit to Private View at 12 o'Clock. Tickets—1s. each—to be had at Wood & Co.'s and the Seed Warehouses; and also at the Office of the Society, 28, Waverley Market. The Council will pay the expenses of Growers who will send Boxes of Roses for Exhibition. W. YOUNG, Assistant Secretary.

BEDFORD and BEDFORDSHIRE HORTICULTURAL SOCIETY.

SECOND ANNUAL SHOW at Bedford, JULY 15.

SPECIAL PRIZES. Open to all England.

48 Cut Roses, distinct, 1st prize, £10; 2d, £5; 3d, £3.
24 Cut Roses, distinct (open to all amateurs), 1st prize, £5; 2d, £3; 3d, £2.
12 Cut Roses, distinct (open to all amateurs), 1st prize, £1; 2d, 10s.; 3d, 5s.
Collection of Cut Hardy Herbaceous or Bulbous Flowers, 1st prize, £2; 2d, £1; 3d, 10s.; 4th, 5s.

Entries Close, July 7. Schedules with Forms of Entry to be obtained of HENRY TEBBS, Hon. Sec. Stoneleigh, Bedford.

NOTTINGHAMSHIRE HORTICULTURAL and BOTANICAL SOCIETY'S GRAND FLOWER SHOW and HORTICULTURAL EXHIBITION will be held on THURSDAY, FRIDAY, and SATURDAY, July 23, 24, and 25, in Mapperley Park, Nottingham. ONE HUNDRED and FIFTY POUNDS and numerous Special PRIZES will be given. Schedules and all information may be obtained on application to E. STEWARD, Hon. Secretary. 2, Exchange Row, Nottingham.

HIGHLAND and AGRICULTURAL SOCIETY.

FOUR HUNDRED POUND PRIZE.—A Prize of the above amount is offered for the discovery of the most practical and satisfactory Method of Utilising the URINE OF HOUSE-FED ANIMALS. Full particulars can be obtained on application to F. N. MENZIES, Secretary.

3, George IV. Bridge, Edinburgh.

TO THE TRADE ONLY.

CARNATIONS, splendid scarlet, cut, 6s. per 100.
GARDENIAS, good blooms, 3s. per dozen.
TUBEROSES, 10d. per dozen.
ROSES, H.P.'s and Teas, 6d. per dozen.
For cash only. Postage paid for orders over 5s.
MARSHALL BROS. AND CO., Nurserymen, Seedsmen, and Florists, The Nurseries, Barnham, Bognor.

**The New Raspberry.**

LORD BEACONSFIELD, A Seedling.

Finest Rasberry and best cropper in England. First-class Certificate awarded by the Royal Horticultural Society, 1883. Now to be seen in full fruit. Fruitery 3½ miles from Kintbury Station (G. W. R.). Nurserymen and Gardeners are invited to an inspection.

A. FAULKNOR, Inkpen, Hungerford.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SPECIAL OFFER OF GOOD PLANTS.

PALMS, specially hardy grown, Latania borbonica and Seaforthia elegans, 20 inches high, 12s. per dozen, 80s. per 100; Adiantum cuneatum, 5-inch pots, good specimens, 9s. per dozen, 60s. per 100; strong plants, out of thumbs, 3s. per dozen, 18s. per 100. GARDENIA INTERMEDIA, 5-inch pots, good plants, 18s. per dozen; small plants, 4s. per dozen, 30s per 100. All strong healthy plants.

The GARDENER, Holly Lodge, Stamford Hill, London, N

**Sow Now for Early Flowering in Spring.**

ROEMER'S Superb Prize PANSY SEED. The best Pansy Seed in the World.

FANCY VARIETIES, saved from named flowers, splendid, mixed, 10s. per ounce, 6d. per packet.
SHOW VARIETIES, saved from named flowers, splendid, mixed, 5s. per ounce, 6d. per packet.
FANCY and SHOW VARIETIES, fine, mixed, 3s. per ounce, 3d. per packet.
ASSORTMENT of 18 splendid distinct varieties, containing each 1 packet, 3s.
CAREFULLY SAVED only from named Exhibition Flowers, of all varieties, splendid, mixed, highly recommended, 2s. 6d. per 1000 seeds, 6d. per packet.
GIGANTIC-FLOWERED SHOW VARIETIES, new and distinct, flowers up to 4 inches in diameter, 5s. per 1000 seeds, 1s. per packet. My Pansy gained the First Prize at the Exhibition at Berlin, 1884.
GIGANTIC FLOWERS, FANCY VARIETIES, very choice collection, 10s. per 1000 seeds, 1s. 6d. per packet. Awarded First Prize Berlin Exhibition, 1884.
For Separate Sorts, see CATALOGUE, forwarded Post-free on application.
FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

**Roses, &c.**

WM. PAUL and SON invite inspection of their COLLECTION of ROSES, which is now in First Bloom, and will continue blooming throughout the summer and autumn. The collection is this year rich in novelties. The Ornamental Trees, Herbaceous Plants, and Fruit Trees are also very fine.

WM. PAUL and SON, Paul's Nurseries, Waltham Cross, adjoining Waltham Cross Station, Great Eastern Railway.

RICHARD WALKER can supply the following, for cash, all from the very best stock:—Veitch's Giant CAULIFLOWER PLANTS, 6s. per 1000; Knight's Protecting White BROCCOLI, 4s. per 1000; Sprouting BROCCOLI, Brussels SPROUTS, Drumhead SAVOY, and Scotch KALE, all at 2s. 6d. per 1000; Solid Red CELERY PLANTS, 6s. per 1000.—Market Gardens, Biggleswade, Beds.

By Special Warrant.

"Superb SEEDS for PRESENT and Later SOWING."

DICKSON'S CHOICEST strains of PRIMULA, CALCEOLARIA, CINERARIA, CYCLAMEN, BEGONIA, and AURICULA, in packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each. Double German WALLFLOWER, superb strain, 1s. per packet. Extra selected Single Dark Blood-red WALLFLOWER, 6d. and 1s. per packet. Also all other FLOWER SEEDS for "Spring Gardening," as well as VEGETABLE SEEDS for Present Sowing. Carriage and Post free. Seeds and Plants of every description. Descriptive Priced CATALOGUES Post-free.

JAMES DICKSON AND SONS,
108, EASTGATE STREET, CHESTER.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and for his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same protection and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his free on demand.

To the Trade.—Roses in Pots.

GARAWAY AND CO. offer:—
WHITE PET, full of flower, in 48-pots, 8s. per dozen, 50s. per 100.

Tea Roses.

| | |
|---|---|
| DEVONIENSIS<br>ETOILE DE LYON<br>FIANCAILLES DE LA PRINCESSE STEPHANIE<br>GLOIRE DE DIJON<br>JEAN DUCHER<br>HOMÈRE<br>MDME. CHARLES FALCOT<br>MARÉCHAL NIEL<br>NIPHETOS<br>SUNSET | All in 48's, 9s. per dozen, 70s. per 100 |
| GRACE DARLING | 15s. per dozen. |

NEW H. P. ROSES of 1885, our selection, 9s. per dozen.
GARAWAY AND CO., Durdham Down, Clifton, Bristol.

CHEAP BEDDING, &c., PLANTS.
All out of Single Pots.

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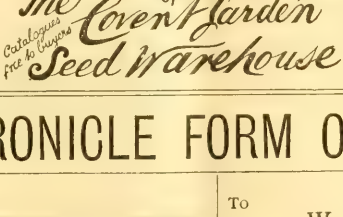
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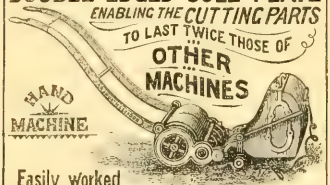
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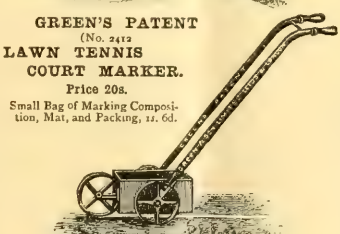
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THE

# Gardeners' Chronicle.

*SATURDAY, JULY 4, 1885.*


## ST. ALBAN'S.

NOT that town dominated by the lofty square tower of a Norman Abbey, and across which the long nave seems to stretch like a retaining wall, nobody knows exactly how far—not that town which Mr. Sander has rendered famous among Orchid lovers, indeed not a town at all, not even a village, is the spot which has supplied a text for this note. St. Alban's Court is an estate belonging to W. O. Hammond, Esq., in East Kent, somewhere about midway between Canterbury and Dover. The downs hereabouts are bleak and barren, the soil a mere skin above the chalk. Good Barley soil it looks; Wheat, the farmers seem to sow thickly, as if they thought the haulms were not strong enough to hold themselves up and so required reciprocal support! Sainfoin, with its pretty pink flowers, is quite at home in the district, and the incarnate Trefoil causes a field here and there to glow with a depth of crimson that even Poppies cannot rival.

Here and there, too, are Hop gardens, though this immediate neighbourhood is not specially a Hop district—the soil is too poor. Not far off, however, some of the best in England are grown. The bines have now got to the top of the poles, they are trailing along the strings stretched from pole to pole like a child's cat's-cradle, or climbing along poles inclined like "fixed bayonets, prepared to receive cavalry," which some growers are now adopting. In Kent the talk is of Hops, very hoppy, and so even here, where Hops are few, we were shown how the bines were brown at the bottom, and a gardener knows what that means as well as a farmer. The Barley looked well, as such a "free and happy" cereal ought to do, the Wheat just in flower and so not requiring rain at present, though to our eyes it looked as if it had been rather stinted in the matter of drink during growth. But from now onward but little rain is wanted for the Wheat, a little drop just to swell the grain, perhaps, and then hot sweltering sun to ripen the golden corn and impart quality to please the factors in Canterbury Market. Roots—well, we did not see any, except some old ones from the pit that the lambs were eating to supplement the too scanty herbage. Clover-hay was lying about in the fields; meadow-hay is a rare commodity hereabouts, but white Clover, closely cropped but full of bloom, was scenting the air with its rich perfume. Peas and Potatos, too, looked promising, as they always ought to do if only to preserve the alliteration. Cherry orchards are not so common hereabouts as higher up the country between Faversham and Sittingbourne, but still the baskets at Adisham Station and the casual conversation of the farmers as overheard on the journey betokened that this part of Kent, if not so richly endowed as some others with the national—of course we mean comital glories—Hops and Cherries, is at least not entirely destitute of them, while as for the pretty women, which constitute

the third and crowning glory of the county, far, indeed, be it from us as born natives to dispute the fact of their existence. If on our journey by Barham Downs we did not happen to see any, that was, of course, our misfortune. Neither did we meet any of Dick Barham's acquaintances, though we were not far from the heart of the Ingoldsby country, a district as well defined as that which that prince of topographers, Walter Scott, has marked out in the northern half of the country.

Though the general impression is one of bleakness and want of shelter, yet there are rounded masses of green foliage darkening into black as we saw it on one of the latter days of June, and in the distance are parks and woods where we know we should find the Butterfly Orchis, perhaps Orchis fusca; the wild Lily of the Valley, and, earlier in the season, the Daffodil. They used to be there in boyhood's days; they must surely be there now; but inexorable fate forbids the happiness of going to look. Down in the hollows, too, are trees and rambling old farmhouses, thatched barns, delightfully pictural; pigs lying sunning themselves in the yards; young chicks running to see if the visitor has not something for them to eat, and, turning away with a disappointed, not to say disgusted, air, when they find the said visitor to be for the nonce merely a loafer. Too close to the homestead are the horse-ponds; indeed, sanitary reform does not seem to have made much progress in these parts. Is it not the country?—and are there not sunlight and oxygen enough on Adisham Downs to burn away all impurities, and bid defiance to bacteria—bad bacteria, we mean, not the beneficent creatures, who, by turning the insoluble into the soluble, convert the inert matter of the soil into the rich food which plumps out the ears of corn. These good friends to the farmer work while he sleeps, but, as a rule, we question whether he is more conscious by day of the services rendered to him by these, his least but his best friends. Down in the "bottoms" hard by we may chance to pass one of those mysterious bournes—rivulets which disappear in some seasons and reappear in others. Littlebourne, Patrixbourne, Bekesbourne, and other villages close at hand derive their names from these intermittent streams.

But what has all this got to do with St. Alban's? This much, that unless the reader can form some idea of the surrounding conditions, and of what Herbert Spencer calls the "environment," he cannot adequately appreciate a garden. With it he can understand why certain things are not to be found, while others thrive; with it he can sympathise with the efforts of the gardener, admire his success in fighting adverse conditions no less than his skill in availing himself of those that are favourable.

The principal attraction for the gardener at St. Alban's Court is the rock garden. Were a competent jury empanelled they would, we are sure, without hesitation give it a First-class Certificate *nem. con.* They would not stop to consider how it was that blocks of Hastings Sand, in defiance of geological propriety and sequence, crop out above the chalk. At present people see no incongruity in such an arrangement, but as knowledge increases, and Girton and Newnham send out learned ladies to regulate the destiny of gardens, we may be sure that anachronisms of this sort will in time be as much subjects of ridicule as was the painter handed down as a subject for perpetual laughter by Horace. It is really worth consideration whether we do not err in attempting to imitate Nature closely rather than appropriately. A rockery which would be appropriate at Groombridge or Penshurst, is certainly not in keeping with the "environment" in this part of East Kent. The chalk downs of Kent with their swooping combes, the landslips with their terraces and plateaux, the pell-mell confusion of the fallen masses by the sea, all furnish hints for the general construction of a rockery in such a district. But after all a rockery is but an artificial device for a certain purpose, and as such, it should, to our thinking, be suggestive rather than directly imitative. In this particular rock-garden—looked at from a cultural point of view—the first thing that struck us was the absence of "pockets" and niches. The rocks at St. Alban's have escarpments jutting out from the vertical plane, and covered with luxuriant Saxifrages now in full bloom; but as a rule, they do not project above the surface—some do so of course—but, for the most part, the plants seem to be growing on the flat, hence at first an impression is given that there can be but little depth of soil for the plants to root in, and that consequently they must be burnt up in summer. In truth, we believe the rocks are tilted downwards at a considerable angle, so that provision is made for depth of soil, while the porous nature of the sandstone ensures a supply of moisture which the dry chalk soil would not afford.

The rock garden at St. Alban's occupies a dell, which looks as if it might have been a disused chalk pit. It is somewhat oval in outline, shaded on the north by trees (including a fine Picea Menziesii). The south wall is of rocks, between which are sinuous paths, appropriately enough leading nowhere in particular, obstructed here and there by a boulder, but allowing convenient access to the plants, and, at one end, running up into a little *couloir* lined with Ferns, among which Adiantum pedatum proves hardy. At the base of this is a little bog, with Irises, Butomus, Pinguiculas, and such like. At the time of our visit the most prominent plants were the Saxifrages—fine masses of S. longifolia and pyramidalis jutted out from the rocks in all directions; S. lantoscana stretched its prostrate pyramid of flowers over the borders. Glorious patches of Sempervivum arachnoideum and Laggeri revelled in the chinks, reminding one of Zermatt. More surprising than this is the profusion of Ramondia pyrenaica, a plant which thrives here better than we have seen it elsewhere. The Edelweiss is all over the place, much of it raised from home-grown seed. The curious Aphyllanthes monspeliaca, with its Rush-like leaves and blue flowers, was in full bloom—one of the plants which the Floral Committee would pass over, while the Scientific Committee might properly grant it a Botanical Certificate. Carpets of white Tyhmus corsicus, blue Veronicas, and creamy Dryas, tufts of Cypripedium spectabile, clumps of Lilies (partly out), screens of Sibthorpia clinging lovingly to the rocks, masses of Campanulas such as pulla, turbinata—let these be taken as samples of what may be seen in this very beautiful and refined rock-garden. On endeavouring to analyse in what its beauty consists, we must yield the first point to its construction (forgetting geological anachronisms for the moment). It is striking without obtrusiveness, well balanced, pleasing to the eye. The next point is the care and judgment that have been exercised in the selection of the plants. Although there is great variety there is no confused medley. There is no straining after effect, by the insertion of bold Yuccas here or Retinosporas there, none of those devices which a less refined taste would undoubtedly have had resort to. The garden is devoted to alpine and low-growing herbaceous plants. Other things would be intruders, and of the plants that are admitted, although all seem at home and growing freely, there are few signs of that desperate conflict for existence that one often sees in other rock-gardens, where the strong overpower the weak, and the delicate and frail have to give place to the obtrusive and rapacious. To some extent this is no doubt a matter of careful planting and diligent supervision, but while attaching due weight to these requisites we incline to think that the success at St. Alban's is due to the great care exercised in selecting the right sort of plant. A meadow, even an alpine meadow, is one thing, a natural rock-garden, such as one sees above the level of the alpine meadow, is another. Doubtless there is competition between plant and plant at the higher as at the lower level, but it is less intense. Some plants are not unfairly handicapped, but all seem on more equal terms, and consequently there is less visible predominance of one over another. Every one who has botanised on the Alps will see our meaning, and if they have the good fortune to visit St. Alban's they will, we think, see what has, consciously or unconsciously, been the guiding principle in its construction. Another point. The rockery at St. Alban's appears to us to be a summer rockery—all rockeries are so in a sense—we mean that there seemed a deficiency of autumn-flowering plants to take the place of those now fast passing their prime. But this is a mee impression, perhaps not well founded.

Elsewhere is an avenue of standard shrubs, including some one is delighted to see, so great is the neglect of such things now-a-days. Then there is—wonderful to relate—a ribbon border; the cold season has checked its radiance so far, doubtless it will be resplendent by-and-bye. On the lawn below the mansion (a handsome modern edifice in the Tudor style) is a large geometric flower-bed, not out of place where it is, and doubtless very effective from the windows. Then, as if to show how well such formal geometric gardens ally themselves to architectural lines, there is a short "Nesfield" border running along the base of a long narrow old building with a turret at one end—a charming piece of architectural effect with which the geometric border is, to our thinking, as much in place as it would be out of place in the rock garden. The Rose garden is also formal; it, too, is encircled by mediæval buildings of stone and red brick, and in it are two or three small stoves, containing a small collection of Orchids: but after all, the charm of St. Alban's resides in its rock-garden, and that is unique.

## New Garden Plants.

CATASETUM MEDIUM, *n. sp.**

A SMALL-FLOWERED Catasetum, with a blackish-red peduncle and numerous flowers. Bracts yellowish, ligulate, acute. Sepals and tepals greenish-yellow, with brown transverse bars. Lip yellowish, with red side laciniæ. Column yellowish, with purple spots at the base. It is highly remarkable, as by the singular callus under the column it approaches "Myanthus" spinosus, as well as in its fringed lip, its total appearance is that of Catasetum bicolor. color. I had it from Mr. W. Bull. *H. G. Rchb. f.*

LÆLIA CANHAMIANA, *n. hyb. art.*

This looks like an improved Lælia purpurata. It might be mistaken for it inadvertently, had it not the rhomboid petals of Cattleya Mossiæ and the broad undulate anterior part of the lip of the same, and those well known diverging rows of oblique brown stripes on the orange ground at the superior part of the lip. The anterior wavy part of the lip is tinted with such fine dark velvet-purple that you may scarcely find finer in the vegetable kingdom. The margin of the upper part of the lip is white. Sepals and petals lightest rose, as in the old Lælia purpurata aurorea. Column white with light green on the sides and under the fovea. Pollinia unequal, four being much smaller, as would appear to be characteristic in all mules between Lælias and Cattleyas. This Lælia is a cross between Lælia purpurata and Cattleya Mossiæ. The plant is thirteen (!!) years old, which I cannot find very encouraging for going in for hybridisation. "Flowering bulb 8 inches long, leaf 12 inches long by 2½ wide, flower-sheath 5 inches long and 1½ wide, whereas

* *Catasetum medium*, n. sp.—Affine Cataseto bicolori; labello parvo conico saccato retrorso lumbo trifido, lacinius lateralibus antrorsis triangulis fimbriatis, lacinia mediana lineari triangula medio utrinque ligulis filiformis quaternis; callo sub columna biaristata trifido; lamina mediana ancipiti triangula; lacinius lateralibus subquadratis superne serratis. *H. G. Rchb. f.*

average length of sheath of Lælia purpurata is with us 6½ inches, and of Mossiæ 2½ inches." Those are the remarks of Mr. Harry Veitch, who wants the plant named in honour of Mr. Canham, a very ardent and assiduous Orchid grower of the Royal Exotic Nursery. *H. G. Rchb. f.*

DENDROBIUM ARACHNITES, *Rchb.* .

This lovely gem has waited a long time from our first knowledge of it up to its flowering in England. It came first from my oldest English correspondent, Mr. Stuart Low, who presented me with a giant dried flower that exceeds in size either of the seven other flowers at hand. It was sent by Mr. Boxall in 1875 to Mr. W. Bull, who sent me a flower and an extract from his correspondent's letter, which said the plant was very rare. Lastly, Mr. F. Sander appeared very pleased with Mr. E. Rimann, a very ardent collector and *connoisseur* of Dendrobia, for sending living plants, dried flowers, and sketches. The bulbs are rather yellowish honey coloured, neatly stalked, perhaps not so always, as Mr. Rimann's sketch does not represent it. The flowers have broad, linear, blunt equal sepals and petals, and a much broader lip of different shape, sometimes simply ligulate, with basilar angles, sometimes with a very attenuate anterior part. It is convolute. The whole flower is of a very bright cinnabar-red, the veins of the lip being partly covered with a peculiar hue. The average flowers exceed 1 inch in length. Mr. Low's flower is like the father, exceeding the present ones by a half length. Mr. E. Rimann speaks in the highest terms of it, and such a pyramid of cinnabar flowers as he sketched them must be striking. Of the leaves I know nothing. I was lately most agreeably surprised to obtain a fine fresh bulb, and a very good flower from our Orchid Crœsus, Mr. W. Lee. *H. G. Rchb. f.*

TRICHOMANES (HEMIPHLEBIUM) LABIATUM, *Jenman, n. sp.*

Rootstock finely thread-like, dark, dirty-tomentose; fronds scattered, variable in shape, suborbicular and cordate at one or both ends, or subovate and narrowed from the middle each way, 1½—2 lines long, the broader ones as much wide, nearly or quite sessile; margins even and clothed with tufts of stellate hairs; texture membranous, dark green, pellucid, veins flabellate, forked, a distinct midrib only in the fertile fronds; sori confined to the apex, usually 1, rarely 2—4; involucres tubular, free or very shortly sunk, with tufts of hair on the margined sides; lips large, expanded and rounded. Herb. Kew. British Guiana, rare on trees at Burtica Grove, The broader fronds have the solitary sorus in the sinus at the top, as in Motleyi, the narrower taper from the middle into it, as in setiferum. Barren ones are in all cases rounded at the top. The marginal tufts of hairs are strong and plentiful in young fronds.

ASPLENIUM (DIPLAZIUM) CAMPBELLI, *Jenman, n. sp.*

Rootstocks small, erect, with a few, minute, pale brown, reticulated scales in the centre, which clothe the base of the stipites, the latter cæspitose, erect, dark, rather strong, 4—6 inches long, fronds erect, composed of one to two pair of contiguous lateral spreading pinnæ and a similar usually slightly larger terminal one, which are lanceolate-acuminate, 3—5 inches long, 1½ inch broad, more rounded than cuneate at the constricted base, and shortly decurrent on the rachis, margins serrated throughout with blunt teeth, texture thin but chartaceous, copiously pellucid, dotted, colour a pale yellowish-green, veins spreading at a wide angle, once forked at the base, and usually again near the margins, sori copious, straight, linear, just short of both midrid and margins, all single or few or several double, involucre very narrow, even-edged. Herb. Kew. British and Dutch Guiana, terrestrial, but growing against the base of saplings in the front. In young plants the fronds are simple, but in all conditions they are fully fertile. Dedicated to the late W. H. Campbell, of Demerara.

STRAWBERRY "THE CAPTAIN."—This, one of Mr. Laxton's raising, has been lately sent to us for an opinion as to its merits. It is a large bluntly conical, good-looking fruit, having moderately prominent yellow seeds. Colour crimson, interiorly pink, and the flesh not solid at the centre. The acidity reminds one of the Elton, but is not so marked as in that variety.

## INJURIOUS INSECTS.

MISS E. A. ORMEROD'S eighth annual *Report of Observations of Injurious Insects and Common Farm Pests* has recently been issued. As in former years, the report treats of injuries to farm and garden crops of all kinds, chiefly from insect agency, though, however, the depredations from the common sparrow come in for a full share of consideration. On this subject, which is one of considerable importance, and one upon which much misunderstanding has arisen, Miss Ormerod is careful to point out, in advocating a wise and careful diminution of the number of birds, the house-sparrow only is intended, and the subject should not in any way be mixed up with the consideration of other small birds. "Nobody," the writer says, "wishes to destroy the small birds broadcast." We should suffer severely if their presence generally was lessened; for instance, there appears to be good reason for considering that the insect presence in 1879 was more than usual, owing in part to the destruction of birds by the cold of the preceding winter, and the cold and wet spring affecting nesting and hatching. On this subject Miss Ormerod quotes the following note from a member of the Committee of Agriculture of the Royal Agricultural and Horticultural Society of South Australia. He says:—"I have been writing lately on the sparrow question, and also to the injury to Australian cultivators done by imported pests. The sparrows here have driven off nearly all our insectivorous birds, which, of course, are small, and have generally soft bills and a timid nature; but the sparrow will eat nothing but seeds while seeds are available; when there are no seeds they will eat fruit; when there are no seeds or fruit they will condescend to kitchen vegetables (or zonal Pelargoniums); but if none of the foregoing are to be had, and the dog, the pig, and the cows cannot be robbed, the sparrow will stay his hunger with aphides, or soft grubs, and caterpillars." Miss Ormerod says she has not received from any of her correspondents a single trustworthy observation of sparrows feeding regularly on insects—such indeed is quite exceptional. Mr. Reginald Christie, of Boynton Hall, near Chelmsford, says: "All other remedies having failed, I am obliged to poison them [the sparrows]. I have examined the contents of a great many at different times, and have invariably found corn and no insects." Another correspondent, writing from Kingsnorth, Kent, says: "As soon as the grains of corn begin to swell and become milky, the sparrows flock to the fields and commit such havoc as alone is enough to make the farmer demand their extermination. It is not what they eat so much as what they destroy that is so annoying."

Lieut.-Colonel Russell, of Stubbers, near Romford, who has paid considerable attention to the habits of the sparrow, says, that of fifty birds of all ages killed one summer, the food in their crops consisted of corn, milky, green, and ripe, and sometimes green Peas; only two small insects were found in the whole number.

Of the Tipula oleracea, or Daddy Longlegs, Miss Ormerod says, that 1884 has been marked by severe attacks from these grubs. The large number of the flies which had been noticeable in many localities in the previous autumn gave signs of what was to be expected, and the steady course in which the attack came on is worth notice, as this is one of the kinds of attack in which (unless measures are taken to obviate it) the presence of the injurious insect may be pretty surely foretold. Miss. Ormerod reports a case which occurred at Stroud in Gloucestershire, where the larvæ of a large kind of Tipula was found in the drinking water, and absolutely poured out with the water from the tea-kettle. All the inhabitants of the house had suffered from illness. Besides the presence of the grubs, the water itself was in a very foul state. On investigation it appeared that the water supply had originally been conveyed by pipes from a tank at some distance, and at some time unknown a drinking place had been made for cattle by forming a pool across the course of the pipes, taking up a portion of them so that the water ran into the pool on one side pure and clean, and out at the other dirty and defiled. The pool was noted as being full of duckweed and green slime, and was open to defilement by cattle standing in it, and the water was reported by the sanitary officer as injurious to the health of those drinking it. A list of the various water-insects which had been carried through the pipes, and which came with the drinking water on turning the tap, was sent to Miss Ormerod. They included dragon-fly grubs, as well as grubs of some of the large water beetles. On this case Miss Ormerod makes the following remarks:—"The above observation is of service in turning attention to the need of looking when unaccountable illness occurs as to what may have happened where supply pipes are open, even to possibility of being tampered with, and likewise to note that though marsh Daddy Longlegs grubs and others may do no harm beyond being exceedingly disgusting when appearing from a tea-kettle, yet that the foul mud that suits them, and the dirty weedy water that suits other larvæ, are some parents of illness, and the presence of the grubs is a sure sign of something amiss that should be looked to without loss of time."

The entire report is full of interesting matter. It indicates Miss Ormerod's power for work, and her assiduity in carrying out what she puts her hand to.

## THE JUNE GARDEN.

"One hour with thee, when burning June
Waves her red flag at pitch of noon."

JUNE is the most beautiful month in all the year. There is nothing like it. After years of wavering choice between autumn and the spring,—which might be best,—the decision is made, and the question, in my own mind at least, at rest for ever, on this green June morning. There is nothing else on earth that ever can compare with beautiful, flowery, flowerful June. The colour of the leaves is exquisite, and as perfect is the colour of the shade they cast. After June is past it will be different, since the leaves will no longer then be thinly half-transparent; but now on this glorious 1st of June the sun shines down upon the trees from his throne of cloudless blue, and there is no shade; it is all green sunshine under the trees. The green, when many-tinted summer is new, if not so brilliant as autumnal gold and red, is yet sufficiently various to satisfy the eye. The olive-green of young Oak, and Poplar, and Ash, contrasts with the fresher greens of Elm and Lime. I remember an old Somersetshire woman who used to say the woods in June were like a piece of "ladies embroidery work." To-day the hedgerow Elms and lines of distant wood are lustrous. No other word could give so well this wonderful glow of June upon the leaves, and only a poet could have found the word! And then when the sun is down, and the glowing trees are by contrast dim and solemn, and the soft "turr, turring" of the turtle-doves in the Thorn tree in the field is hushed, I know that I shall find the white Irises more shining in their polished whiteness than during all the day, filling the air with perfume. In the garden we have gold as rich as October ever gave; and we have silver which is June's alone. Laburnums rain gold above the golden Broom, and intermix with silvern heaps of White Thorn and silvery Broom. And when did ever autumnal-mellowed Beech, light up the yellow groves with velvet fires so softly red as the young shoots of Copper Beech, which scatter now their spray of rubies and clear jacinth, dropping down between us and the sun? And when did autumn ever burn with such crimsons as glow in these scarlet double Thorns, or in the piled-up splendours of Rhododendron, which now illuminate the woods?

The Yews and Yewen hedges have put on a new face, and conceal all trace of gloom beneath young leaves of russet-gold. Yet there is regret and grief this beautiful June morning! I find myself quoting Wordsworth, saying to myself, "There is a change, and I am poor;" for the whole garden is all jubilant with song, but the song that is best is not heard. There is no nightingale this year. We listen and watch in vain. Sometimes some thrush singing notes of unwonted fire and sweetness will for a moment deceive the ear; this has happened once or twice. But when indeed, the nightingale sings, he is never mistaken for a thrush. What, alas! is the mysterious cause of our loss? We are fain to hope it may be the cold winds of May and April, because there are no glowworms, or because there is so little Oak about the place (Oak scrub must this autumn be planted somewhere). Anything is better to believe than the

ugly reason of bird-stealers. Whatever the reason be—

"Such change, and at the very door
Of my fond heart, hath made me poor."

Of a winter garden it is easy enough to write. But in June—the garden in midsummer! Out of the fulness of it how is choice to be made of one sweet flower for praise more than another? It is a world of surpassing beauty. This morning, in the still shade of a south window, one small petal dropped upon the window-sill from a flowery branch of Cotoneaster (Good Neighbour). One is seldom present just at the very moment when a petal falls. The flower may wither or be shaken in the wind, or fall at a touch, and the leaves be scattered. But when both shape and colour are unchanged, and yet the petals drop quietly one by one in some profound calm of a summer dawn or evening twilight, there is pathos in it. The flower is not dead, but her time has come. The flowers of the Cistus family, which are now delighting us, quite literally have their day. In the morning there is a mass of bloom; at evening not a single flower remains. The sole trace left is a pink or white or yellow mosaic, where the falling petals have showered down upon the grass or gravel. The difficulty is, to find room enough for Cistus. They require some bank or lengths of rock garden to be given up entirely to them. Then there might be a blaze of colour through all the summer, in favourable weather, for they do not like too much rain. In proportion to the brief individual existence of the Cistus flowers are their innumerable buds; and they are as costless as they are lovely. A few packets of seed will stock a garden! Once we had the pink Riviera Cistus of the large grey-green leaves and exquisite flowers which light up the hills and dusty roadsides like rose coloured lamps alive in broad daylight! Our plants perished in some unusually severe frost. The white Cistus, with narrower, more polished, aromatic foliage, is hardier, and seems quite happy here in a south aspect. We have but one old Gum Cistus, as fragile, and more wondrously beautiful than all the rest. How the folds and crumples in the satin of her ample petal do but enhance its beauty! It grows on the lawn at the foot of a Noisette Rose that now envelopes the bare stem of a dead Weeping Ash. The Rose climbed up to the top of the tree and falls over in a great luxuriance of flower and leaf and thorn. Within the thorniest heart of this thorny Rose-thicket a thrush has her nest. I think, in her wisdom, she this time made it ju t a little too safe. The young thrushes sit full fledged in the nest; I think they dare not tempt the thorns.

As we pass through the south porch the martin from her mud hut over the door skims out into the sunshine. When she begins to sit there will be little time for these wide sweeps of flight, or to idle upon the Rose arches, twittering and preening those long, blue-black wings of hers! On either side the porch there grows a Lavender bush and a Rosemary. The Lavender is failing, as it did last summer. The bud-stalks look quite firm and healthy up to a certain point, and then each head hangs down, and in a little while they look withered and black—as if they were strangled. "Some failure at the root," is the gardener's verdict for this and many another unpleasantness in the garden. Is it not mostly "failure at the root" in many of our mistakes outside the garden?—None of the other Lavender plants seem affected in the same way, fortunately. Ferns and a fine root of Turncap Lily grow at the back of the Lavender, and up the porch wall is a young Banksia Rose climbing apace, and flowering for the first time. It ought to have been yellow, but it has come white. Under the Rosemary is a great old conch shell, kept filled with fresh water for the birds. The narrow border that runs along under the Oak-room window is my trouble and my dear delight. I hope nothing will ever lead me to call it a "herbaceous border!" It has become so much the fashion to call everything herbaceous which is not "bedding out," that the meaning of the word is usually lost sight of, and all kinds of woody perennials are, so it seems to me, included in the "herbaceous border." The phrase also seems to leave out all the poetry of the garden. Not, I think, more than a dozen or fifteen years old, it dates from the first rage for yellow Calceolarias and Pyrethrums and the carpetings, when "herbaceous" things were admitted only somewhere out of the way by sufferance. May this be the first and last time I have to write "Herbaceous." Under the window a Cotoneaster bears good promise of its pink liliputian Apple crop for the blackbirds in October. And then there is a little wilderness of wood Strawberries. They want to have it all their own way here, and mean to get it. They smother the Hepaticas, and choke the Irises, and over-reach the turf verge, and then ground-Ivy stretches along and over the Strawberries, and has to be quickly made an end of. Red wood-Strawberries are ripening for the children, mixed with a few of the yellow-flowered Fragaria indica, whose berry is very handsome, but so acrid as to stay safe enough on its stalk. Neither child nor bird would taste a second time. Italians, with their characteristic gentle fun call it "Inganna Donne." Vine and Pomegranate and white French Honeysuckle, Clematis and Eccremocarpus, grow up in more or less of wild luxuriance around the window. The Pomegranate never yet has flowered, though her sister plant (since dead) in another part of the garden used to flame with blossom. Were it possible to decide which to like best of all these, one or two at least might attain perfection. It ought perhaps to be the Pomegranate, and a clear place should be made for it. But none of the others can be sacrificed; and indeed I wish for a Pyracantha and a Ceanothus (for its blue),



Fig. 1.—Effect of sand blast on tree trunk. (see p. 9.)

&c., to be added; then there come the Belladonna Lilies, which will never flower, and a line of stately white Lilies which always bloom well, and just now brilliant Roses upon unpruned trees, in gadding wreaths of beauty, stray above the Strawberry leaves, with a sullen glow of yellow and purple Iris (Darius) between the wreaths. These tall Iris defied the over-mastering luxuriance about their roots, while the beautiful "Versailles" was discouraged. There is aromatic Santolina and Woodruff and Japan Anemone, all mixed up, and entangled with the wood Strawberries, and the border ends at a pink wall—pink with great hanging bunches of the old China Rose. Right in front, indifferent alike to Strawberries and all the world, are three Euphorbias. Of their own good will and choice they grow up here. It would be cruel to uproot them, they stand so firm and grand in their placid self-assertion. I do not love them, but they compel my regard. It has been remarked of them that they are beautiful, from the decision of character they display. From the seed they know how they intend to grow, and they complete their plan. There is the smooth firm stem, straight as a line, in colour emerald washed with amethyst, and the narrow leaves, exactly matched in size, placed with perfect symmetry up the stem till they reach the four-branched seed-holders, proceeding like a branching capital from the top of the green tall pillar. The seed-bolders on the four branches support leaves of another shape in ordered pairs, and each pair guards a poisonous-looking flower or seed. First to last there is not a shade of indecision in the mind of any one of these three tall Euphorbias [Caper Spurge].

The "Roman Walk" in the morning, when shadows fall, is almost picturesque. There are some large clumps of Sisyrinchium striatum in profuse bloom; the flower-spikes and Iris-like leaves are most "showy," contrasting well with the rocks and rounded masses of leaf and flower near them. The little pale yellow flowers, taken singly, may seem rather insignificant, yet there is something moving almost, in their religious attention to the hour which unwritten laws have determined; for even when gathered and kept in water in the house, at a distance from the windows, they shut up just the same, punctual to a minute. Lovely little purple Linaria reticulata (aureo-purpurea) scatters itself, self-sown, about the ledges, with the sweet, sad coloured Night Stock; and I am afraid we tread heavier than need be upon the Camomile, spread flatly on the stony walk,—to make it give out all its aroma. The small Campanula pulla's deep purple bells, nod in crevices near Edelweiss clothed in grey cottony bloom. It is curious to see the horror which an English dweller in Switzerland feels for this throned queen of alpine flowers! That Edelweiss, a name *we* pronounce almost with reverence, should ever be called "a cockney flower," seems almost past belief. Yet so it is, and I am sorry, for there had been a certain pride when I thought our plants were finer on the height of the rock-garden than in its lower ranges! There is Mesembryanthemum and painted Portulaca, a coral Schizostylis, a yellow Sisyrinchium, and the Stonecrops are coming into bloom. The Artichoke rears itself grandly, almost like some grey-leaved giant Fern, on the top ridge of rock, casting a great shadow across the stones.

A broad border—screened from a stray bit of kitchen garden by a battlemented Arbor-vitæ hedge—has been divided into large squares of favourite plants. There is a square of Ranunculus, and this is a disappointment. I believe the flower resents its removal from the old place under the south wall. Our Ranunculus used to be small fireballs of vermilion and gold. Then there is a square of yellow Sweet Sultan, and with it a lovely Lily with sea-green silvery leaves. Pancratium maritimum is the right name, I believe, but I prefer to call it a Star Lily. There are Carnations, and then most delicately beautiful Spanish Iris; a large variety. The last square in the border is a blue mass of Anchusa italica. The air just there is perfumed with Musk. We let the Musk wander at will all over this border. We give it neither care nor culture, and it gives back to us, for nothing, the treasure of its sweetness. With the parterre which lights up the lawn before the dining-room windows, I have little to do. The gardener plans the colours and arrangement of it, and I feel it is in good hands; two centre beds this season appear to me especially happy. They are White Bride Gladiolus, mixed with deep red Tuscan Rose, pure white and crimson.

The other long-shaped, narrow parterre we have tried to pattern out like one I saw last summer on a sunny Somersetshire terrace. It was in vandykes of many-coloured Verbena; ours is chiefly variegated and scarlet Pelargonium, blue Lobelias, both bronze-leaved and green dwarf Ageratum—Tagetes for yellow, and Cerastium tomentosum, known sometimes as Summer Snow. This Snow looks very brilliant from a distance, seen through openings in the dark Yew hedge. White is perhaps too much neglected in the ordering of coloured plots; yet in all the best art of old times, in stained glass or Eastern embroideries, it is the white parts that give brilliance to the whole. In the garden, yellow is the trouble. Calceolarias I will not have; I seek vainly some low-growing yellow, the same tone as the little double yellow Rose that is teasing me by blooming high up out of reach by the garden gate. It should have the same effect, only in yellow, as pink Silene.

A short time since this Silene was used at Cliveden in a way that, once seen, cannot be forgotten. An immense circle of pink lay like a Magic Ring upon the grass. There is a set of jewel-shaped beds on a grand scale, leading up to it on either side. Between the ring and the lofty terrace and the house, there simply lies unrolled about a quarter of a mile of green

velvet. Beyond the pink ring, dip down in sweetly wooded lines, steep cliffs and banks to level meads and windings of the silver Thames.

*June* 24.—On this midsummer morn St. John's Wort, under the Elms, is not yet in bloom. Yet I thought as I went over the garden there could not be a more ideal 24th of June.

White and purple Foxglove throng together in stately beauty in the Boccage and Fantaisie, with heads bent in the mid-day sun: but where one slender spike—milk-white or red—rises alone in some shady spot, peering through green Brake Fern, that is better still! I wonder what like was the "lesser dusky Foxglove," observed by Gerard in John Tradescant's garden. Also his "Digitalis ferruginea, with flower the colour of iron." A fine plant of the yellow Swiss Foxglove lives snug and solitary, under a Currant bush in the kitchen garden. It is certainly handsome, but I never know whether to admire it much or not. There is always an uncertainty about the name of Foxglove. In old French it is *Gante nostre dame;* in high Dutch, as in German, Finger-hut. And Roses!—It is Roses, Roses everywhere. A very Pasque della Rose. Never do I remember the garden to be so much of a real Rose garden; and the sweetest Rose of all is that which decks the Sweet Brier hedge. Paul Nèron, with all his seven inches across and no scent, is nothing to that little deep-pink Brier Rose! The damask Roses overspreading a corner of the south wall are an ideal of Rose loveliness. It is worth while to make a good south place for this old Rose; it will soon repay you a hundredfold in delicious beauty. Once more, after nigh two score years, I have the pleasure of smelling a York and Lancaster Rose. Her perfume is divine. And we have a real Black Rose (Empereur de Maroque?), if gathered before the sun has time to burn it, most beautiful, haunting the memory with that old foolish rhyme—

"Rosy in the parlour, Rosy in the hall:
Rosy was a black Rose, better than them all."

As for our old blush Rose age does but increase its charm. *E. V. B.*



FIG. 2 – PINUS ALBICAULIS.

## MELON CANKER.

(*Continued from p. 770, vol. xxiii.*)

PERMIT me to inform "C. H." that I am perfectly well aware that the stems of Melon plants, if carefully planted and subsequently landed-up without being injured in doing so, may be buried a couple of inches in the soil without much fear of their becoming a prey to canker providing that the drainage and after-treatment be good, and that in the application of water to the roots care be taken not to water close to the stems of the plants. Indeed, before I had recourse to setting the plants on mounds, I used to draw a little soil up round about the stems of the individual plants, and made the same firm without pressing the stems, to prevent the lodgment of water thereat. But what advantage does "C. H." claim as resulting from deep planting?—seeing that such a system, if followed by young beginners and would-be Melon growers, would in all probability lead to disastrous results. It was simply with a view to preventing disappointment of this kind from occurring that my previous, like these, notes were penned, and not from any desire to disprove the conclusions arrived at by your correspondent, "C. H.," who has failed in his endeavour to show grounds in support of his previously formed conclusions respecting the cause of canker in the stems of Melon plants.

I thought from the tone of "C. H.'s" observations at p. 671 that he had no experience of either Melon canker or of the plants having been set on mounds, but at p. 770 I find that his mind carries him back to an instance of both which occurred twelve years since, and which he cites as much with a view to weakening my case as strengthening his own, but how far he has succeeded in doing either your readers can decide for themselves. "C. H.," in trying to justify his opinion as to Melon canker being the result of a sudden fall of the temperature in the house or at the roots through cold water having been applied thereat or other cause, says that in his experience "canker usually occurs where the stems come in contact with the soil, and not the buried portion, consequently the temperature of the house would affect it;" adding, "and as the sudden fall in the atmosphere would in most cases be accompanied also by a similar fall in the bottom-heat through the heat from the hot-water pipes not affording enough heat, the entire plant would feel the check." I beg to remind "C. H." that because canker in the stems of Melon plants is first visible at the point of contact with the soil it does not follow that the buried portion was not first affected, and that the canker did not afterwards ascend in the stems so far as the latter were surrounded by damp soil. However, assuming for the sake of demonstrating the advisability of planting on mounds, that canker only occurs at the point of contact with the soil, then, I ask, why not set the plants in the manner indicated at p. 703, so that the stems do not come in contact with the soil, and thereby avoid canker? "C. H." is wrong in his conclusions regarding the corresponding fall in the temperature of the house and the soil at the roots, because it does not follow that when the temperature of the house has fallen from 90° at 4 P.M. to 65° or 60° between then and the following mornings, as is frequently the case during the summer months, where no fire-heat is employed for supplying bottom-heat, that the temperature at the roots has consequently fluctuated more than 5°, if so much, during the interval. As a case in point, I may say that, from plants thus grown, but having one 4-inch hot-water-pipe running round the pit for supplying top-heat, I cut five crops of Melons from the same plants in one year (1877, and which fact was recorded in your numbers for August 14 and September 8 of that year), and the plants were quite as vigorous and healthy when the last crop was cut as they were when the first one (the end of April) was. Your correspondent refers to the effect that too much water at the roots of Calceolaria and Cineraria plants would produce, but says nothing about the like results that potting the said plants too deeply in shitting them out of small pots into larger ones would bring about, though less quickly. In conclusion, I beg to assure "C. H." that I did not for a moment question his ability as a first-rate Melon-grower; indeed, on the contrary, if "C. H." truly represents his name, I believe him to be a good all-round practical gardener, and that it was simply the soundness of his views on the subject under notice, and the conclusions at which he arrived in connection therewith, that I did, and do still, question. *H. W. Ward.*

## PINUS ALBICAULIS, ENGELM.

IN volume ix. of this work, pp. 12, 13 (January 5, 1878), an account was given of the effects of the sand-blast (wind-driven sand) in eroding, scoring, and furrowing the hard wood of some of the Conifers that inhabit great elevations in the Sierra Nevada of California; and the account was accompanied by woodcuts that are veritable *fac similes* of the eroded surfaces of two species collected by myself in the autumn of 1877. These were a Juniperus and the Pinus albicaulis, and fig. 2 is a reproduction of the appearance of the plant of the latter which afforded one of the illustrations, that with the very fine striæ.* The tree in question was denuded of the bark for a great extent of the trunk, the scored naked wood being fully exposed. It grew out of a crest of rock, on the bleak stony side of Shasta Butte in Northern California, at an elevation of about 9000 feet, where it was exposed to the force of a wind thickly charged with coarse sand and even with gravel in violent gales. In its ordinary condition P. albicaulis forms a small alpine tree 20 to 40 feet high, with the trunk very short and stout, and rather bushy straggling branches. I have seen it only in scattered individuals, never forming forests, and it appears to delight in great elevations, where it becomes dwarfed in height whilst retaining its stoutness of trunk and limbs. The latter in these situations are often gnarled and prostrate, covered with a whitish bark and exceedingly compact wood, the rings of which are difficult to count. The wood is described by Professor Sargent as light, soft, not strong, brittle, close grained, compact, with obscure medullary rays, the colour of the heart-wood is light brown, and of the sap-wood white.

P. albicaulis has a wide range and latitude, from the coast ranges and interior of British Columbia to Southern California, at elevations of 8000 to 10,000 feet, it also extends eastward to the Montana, territory. I found it on Shasta only about and above 9000 feet elevation, and on the Sierra Nevada, always as stunted isolated trees. The rude sketch here given was made on Shasta. Engelmann has latterly reduced it to a variety of P. flexilis, which is a Rocky Mountain species, inhabiting lower elevations, and forming small forests, and which does not grow in the mountain ranges where P. albicaulis occurs. *J. D. Hooker.* [To render Sir Joseph Hooker's account more complete we reproduce at fig. 1 the illustration of the effect of sand-blast on this tree. ED.]

## SEED SOWING, &c., AT SWANLEY.

IT may be safely said that in no department of gardening has there been a more real advance than that which has been effected of late years with some of the popular kinds of flowers usually grown annually from seed, such as Chinese Primulas, Cinerarias, Calceolarias, Cyclamens, and Gloxinias. Primulas have always occupied so important a position for winter flowering that almost every one possessed of a greenhouse grows them, yet time was when there were few things caused more vexatious disappointment. A packet of what professed to be good seed would furnish a quantity of plants; but for one decent form worth growing there would be a dozen that produced flowers little if any better than a common Primrose by the hedge side. The result of this was, that to get a sufficient number with presentable flowers, ten

* By inadvertence in the account of these woods, given at vol. ix., p. 13, all three (A, B, C), were attributed to the Juniper, but the central one, B, belongs to P. albicaulis.

times the quantity that were needed had to be grown on to blooming condition. Of the other kinds of plants mentioned, so little dependence could be placed on seedlings that they were mostly propagated from named kinds that possibly stood in the proportion of not more than one in a hundred of the seedlings that were raised. Judicious crossing and careful selection have so far changed all this, that now the strains of the plants instanced are so much improved, that where good seed is obtained a worthless plant is an exception. Messrs. Cannell have taken a prominent part in the advance made in this direction. A sight of the houses when the immense stock of plants grown for seed purposes are in bloom is both interesting and instructive, disclosing the care and labour bestowed to insure the different forms of each kind of plant yielding seed that will come true. Of Primulas there are here a number of forms, sufficiently distinct in the colour and general character of the flowers to make them well worth growing. Amongst red varieties that have recently taken such a prominent position Swanley Red keeps improving year by year, and is remarkable for its vivid ruby colour, with distinct yellow eye, fine habit, profuse blooming disposition, and the increased size of its flowers: many of the plants come with a distinct shade of rose and violet. Swanley Purple is a large-sized flower of an intensely deep shade of purple, the foliage stout and bold. Swanley White, a very fine kind, of excellent habit, producing immense trusses of large pure white flowers. Another white, named The Queen, is a larger grower than the last, of splendid habit, the leaves drooping so as to almost cover the pots. The flowers are the largest I have seen, beautifully fimbriated, with an orange-yellow eye. Princess of Wales, blush white, a distinct and lovely kind, of excellent habit. Delicata, a Fern-leaved variety, with blush-coloured flowers. Lilacina, a very distinct Primula, of a clear lilac shade, sometimes striped with red, like a Carnation. Mammoth, an enormous crimson-purple flower. Some of the individual flowers of this kind that I measured were 2½ inches across. Queen of the Stripes, a large-flowered kind, ground colour white, flaked and striped with purple, and sometimes flushed with crimson. In the long houses occupied by Primulas each form is kept in a distinct group by itself. Fertilisation by hand is regularly carried out. The distinct kinds that have been raised here have not, as might be supposed, originated by accident, but are the result of crossing varieties dissimilar in colour and general character. Precautions are taken to prevent accidental crossing; the doors and every opening by which air is admitted are guarded by close netting, so that flies and bees cannot get through.

### CINERARIAS

are in immense quantities, dwarf and robust in habit, and bear big compact heads of bloom in innumerable shades of colour, the individual flowers being of enormous size, many running from 2½ to 2¾ inches across. These, like the Primulas, are each variety kept in groups by themselves. Exceptionally fine varieties that from time to time make their appearance—such, for instance, as Victory, March Past, and others—are propagated in quantity from suckers or grown on for producing seed. Like care is here taken to exclude everything in the form of a winged insect that could carry pollen from one plant to the other.

### CALCEOLARIAS.

With these selection and rejection have been carried out until the stock appears to have a fixed uniformly dwarf robust habit, every plant being in this respect a counterpart of its neighbour. They fill one of the long houses. The plants are grown in larger pots than usually employed with plants for seed: 9 or 10-inch are used; this, with liberal feeding admits of their getting a large size, showing their true character. Self-coloured varieties, from yellow, through the various shades of red, to the deepest crimson, receive equal attention with the spotted flowers.

### CYCLAMENS.

Of these a very large stock is grown for seed. The seed is sown in July for blooming in the spring but one afterwards. Here again each colour is kept separate. The strain collectively is unexceptionable, the plants having stout foliage, and producing a profusion of full-sized flowers in all shades from pure white to blackish-purple. Hand fertilisation is with these plants also carried out daily when there is sufficient sun to dry the atmosphere, the flowers on each plant receiving a good shaking with a thin pliable stick.

Those who have seen the wonderful plants of double Primula exhibited by Messrs. Cannell, will not require to be told of the extraordinary cultivation brought to bear on them. The old white and fimbriated white still stand unequalled for their general usefulness, especially for cutting. A very large number of these are grown in all sizes, from small trade plants up to the largest specimens. Gilbert's seedlings are also grown in quantity; here, as elsewhere, they sport in all directions: Marchioness of Exeter and Earl of Beaconsfield appear to be the best.

### BEGONIAS.

Amongst flowering plants grown here that keep on blooming continuously through the winter and spring, the following were conspicuous:—Of Begonias, which are a feature at Swanley, may be named the old B. nitida, with its spikes of silver-blush flowers, still one of the best; B. semperflorens alba, one of the freest of all white flowering kinds; B. semperflorens gigantea, one of Lemoine's seedlings, flowers carmine; B. semperflorens rubra, flowers white, edged with red; B. Digswelliana, a compact habited kind yielding an abundance of flowers of a soft pink colour; B. Saundersi and B. Ingrami, the last the largest flower, both bright crimson. The old B. fuchsioides, when well managed, is not only one of the freest bloomers, but its bright coloured flowers and neat foliage give it a highly decorative appearance in spring. Of newer kinds, B. Carrierei is one of the most desirable that has ever been introduced, it is a hybrid between B. semperflorens and B. Schmidtii; the flowers, pure white, a little inferior in size to B. semperflorens, are borne in quantities.

### WINTER FLOWERING CARNATIONS.

Amongst these, now so deservedly popular, the undermentioned were the most attractive:—The Moor, dark crimson; Marie Nugue, pure white, lightly tipped with scarlet; Mrs. George Hawtrey, a fine yellow; Andalusia, yellow petals, fringed; Avalanche, flowers large, white, edged with purple; Petunia, base of petals pale flesh, rosy-purple at the extremities; Alegatière, still one of the best reds; Miss Jolliffe, another old variety, unsurpassed in its colour. Another good old winter and spring blooming plant, now very seldom seen, is Browallia Jamesoni; it is grown in the form of small standards; its uncommon-looking orange-red flowers are produced freely from every bit of growth it makes. *T. B.*

## ORCHIDS FOR AMATEURS.

(*Continued from p. 8, col. 1.*)

THE second type of Cattleya consists of a single species, C. chocoensis. The general appearance of this plant is like those of the Labiata section, but the flowers are not so open and have a campanulate form. The petals have more substance than in the Labiata type, and are often pure white; some varieties have a delicate rose tint, sometimes rayed with carnation. The labellum is either white, or more usually more or less coloured with rose or violet on the limb, with a citron-yellow spot in the form of an anchor in the throat. It flowers in the winter, and is a native of New Grenada.

The third group of Cattleyas is very distinct from the Labiata section; the pseudobulbs are long and cylindrical, and surmounted by two or three coriaceous leaves. The flowers are thick and fleshy, and form large racemes. The petals and sepals are of a rich orange-green or brown, marked with chocolate or crimson spots; the labellum is three-lobed, and entirely encloses the column. They form the

### CATTLEYA FORBESII SECTION.

*Cattleya Forbesii.*—This plant has been made the type of the section, but it is less beautiful than the nearly allied form, Cattleya granulosa, which it resembles very closely. It is a native of Brazil. The flowers are yellowish-green with a yellow or white labellum, rayed and spotted with crimson on its middle lobe.

*C. granulosa.*—A native of the hottest parts of Bahia and Guatemala. It has long, narrow, upright pseudobulbs, about 1 foot to 15 inches long, knotted and channeled, partially covered with white glistening membranous sheaths, with two horizontal coriaceous leaves at their summit. The flowers are faintly fragant, 2 to 3 inches in diameter, and six or eight on each spike. The sepals and petals are of an olive-green, with a few blood-red spots scattered over them; the labellum is fleshy, three-lobed; the lateral lobes, folded upwards over the column, are pure white; the middle lobe is deeply cleft and dilated into two round lobules with toothed borders; these lobules are folded fanwise, and speckled with dots of bright crimson. The interior of the lip is yellow. It flowers in autumn and winter.

*C. guttata* is merely a variety of C. granulosa, with the middle lobe of the labellum of a uniform purple tint. It is remarkable for the number of flowers on each spike.

*C. guttata Leopoldi*, sometimes called C. Leopoldi, is a large variety of guttata with rich brownish-green flowers marked with spots of deep magenta and having a metallic lustre. It is very floriferous and fragrant.

*C. amethystoglossa* is also a mere variety of granulosa, with a deep carmine lip and pale rose-coloured sepals and petals spotted with small crimson spots arranged in rows. It is a very variable plant like all those included in the section, some have comparatively poor flowers.

*C. luteola* or *sulphurea* is a small variety of granulosa, probably a cross between it and some single-leaved species. It usually has only one leaf to each bulb. The flowers are small, and of a pale citron-yellow colour. It flowers in winter, and is a native of Brazil.

A distinct species, with numerous varieties closely allied to the preceding, but of smaller size than any except the last, is called C. Loddigesi. It has lilac flowers with a yellow throat to the labellum.

*C. Harrisoniana* appears to be a maritime variety of C. Loddigesi with rose coloured flowers; a violet variety is also known.

*C. intermedia* is another variety of Loddigesi, but differs in having violet in the throat of the labellum instead of yellow; it is not considered nearly as good as the last.

All the plants included in this section come from the hottest regions of South America, grow in the full glare of the tropical sun, and pass through a very severe resting period, which is described by Humboldt in the following graphic terms:—"Then beneath the vertical rays of the bright and cloudless sun of the tropics, the parched soil cracks and bursts as if rent asunder by a mighty earthquake; and if at such a time two opposite and conflicting currents of air, moving in rapid gyrations, come into contact with the earth, a singular spectacle presents itself: funnel-shaped clouds of sand rise from the earth, sweeping on like the rushing waterspout which strikes such terror into the heart of the mariner. A dim sallow light gleams from the lowering sky over the dreary plain. The hot and dusty earth forms a cloudy veil which shrouds the heavens and increases the stifling oppression of the atmosphere. (In the middle of the sand cloud the thermometer stood for several minutes together at 111° Fahr. The dry sand in the village of San Fernando de Apure had a temperature of 126° Fahr.)" The trees all lose their leaves, and every particle of vegetation is dried up, the pseudobulbs and leaves of the Orchids are shrivelled and desiccated. The first rains, however, bring about a total transformation; vegetation everywhere bursts forth, and in a few days the blossom buds of the Cattleyas break from their sheaths.

Experience tells us, however, that in cultivation such severe desiccation is undesirable—at least, that is the opinion of most growers, although severe and forced rest is absolutely necessary, or new shoots will appear after the formation of the flower-sheaths, and no flowers will reward the cultivator.

The maritime varieties are subject to less severe drought, but they are often found almost within the reach of the salt spray. I have found that a pinch of salt in a gallon of water agrees well with C. Harrisoniana, and I believe its natural habitat indicates such treatment. I hope to recur to this subject on a future occasion, when a longer experience in its use has enabled me to compare the condition of plants which have been so treated with those in which no salt has been given, and also when I have been able to note the effect of an increased quantity upon my plants.

*C. guttata* certainly needs a considerable supply of nitrogenous material, and flourishes well if guano water, of the strength already noted, is freely supplied. It is known to be a plant which feeds greedily by its roots. My own belief is that all the Cattleyas with cylindrical pseudobulbs require much sun and air to bring them to perfection. A close moist atmosphere does not agree with them, and the period of rest needs to be more severe than in those with ovoid bulbs.

### CATTLEYA ACLANDIÆ SECTION.

The form of the labellum in this group is remarkable, the lateral lobes are very large and not folded over the column as in Cattleya Forbesii, but are flattened out. The terminal lobe is deeply cleft and very broad.

*Cattleya Acklandiæ* is the type form; the pseudobulbs are clavate, dilated towards their summits, with two or three short almost round leaves. The flowers are usually solitary, more rarely in pairs, nearly 3 inches in diameter, of a pale green, strongly

marked with intense chocolate-brown, inclining to purple, with a more or less metallic lustre. The lateral lobes of the labellum are white. The terminal lobe is white, veined with rose, and marked with median and longitudinal striæ of a violet-purple colour, not unlike that of Læliæ purpurata. The column is very large and flattened. It is certainly one of the most beautiful and remarkable flowers in the genus Cattleya. The perfume is aromatic, and has been compared with the odour of pepper. A variety deliciously perfumed, with gigantic flowers, is known as C. Aclandiæ grandiflora. It grows near the sea, and is a native of Bahia.

*Cattleya bicolor*.—This plant also belongs to the C. Aclandiæ group; it has long slender pseudobulbs, often 2 feet in length, which bear a scape of eight or ten flowers. The sepals and petals are pale green, with bistre-coloured spots, and the labellum is of a rich purple colour. It is a native of Brazil; it appears also to be essentially a maritime plant. *B. T. L.*

(*To be continued.*)

## ASCENT OF MOUNT TORLESSE.

MOUNT Torlesse being the nearest or, at any rate, the easiest attainable mountain to Christchurch, offers to the botanist or geologist a most interesting ground for collecting specimens. Hence to me it has always been a tempting goal for the holidays. Although not by any means to be considered a first-class ascent in a mountainous country like New Zealand, Mount Torlesse is nevertheless 6400 feet high, or twice the height of the principal peak in England—Scawfell—which I several times ascended when a boy. The mountain forms a gigantic mass of schistose rock, extending from the Waimakariri Gorge to Porter's Pass, and has two peaks reaching the height abovementioned. Leaving the train at Springfield one windy day in January, I walked from that pleasant township to the top of Porter's Pass, 3160 feet above the sea, and the highest point on the West Coast road. Being provided with a small tent and the necessary kit, I camped for the night in a gully some 500 feet higher up the mountain.

On the following morning I commenced the ascent at five o'clock, the early hour being selected from an impression that a nor'-wester was brewing, and, unfortunately, my prognostications proved correct, and my investigations were much interfered with by the wind, of which those who have only experienced the half-tamed nor'-wester felt in the streets of the city can have but a faint idea. In ascending the mountain, one is struck by the apparently barren nature of the surface, which consists of large areas of rolling, ever-moving *débris*, alternating with narrow strips of low shrubs interspersed with beautiful herbaceous plants.

The shrubs are principally species of Veronica, Snowberries, two alpine kinds of Tutu, one or two small mountain Conifers, and several kinds of Neineis (Dracophyllum). In an angle of the mountain a few trees of Fagus solandri, the White Beech of the settlers, have found a home, and formed a miniature hanging forest crowded with the usual shrubby subalpine vegetation, the ground and rocks being clothed with Filmy Ferns. The grassy strips and moister parts of the mountain are clothed with immense numbers of the larger kinds of mountain Daisies or Cotton plants (Celmisia), which at the time of my visit were in full bloom and covered the ground with their pure white Chrysanthemum-like flowers. No fewer than ten species of these fine plants were collected, one of them (C. Haastii) being very rare, and not previously obtained on Mount Torlesse. Altogether about 150 sorts of plants were obtained on the grassy slopes, and about fifty more on the rocks and shingle slips. To give the names of these would only weary the unscientific reader, but a few of the more interesting will be mentioned. Although the shingle slips look so barren to the eye at first, a close examination reveals the existence of many plants peculiarly adapted for living in such places. Many partake of the fleshy habit of succulents, although belonging to genera quite distinct from the succulent plants of other countries; thus there is a fleshy Lobelia, numerous fleshy-leaved plants of the Carrot tribe, a fleshy-leaved Buttercup (Ranunculus Haastii), and many others.

Climbing these masses of loose *débris*, which rest on a bed of rock at a very acute angle, and cover the greater part of the mountain, is rather fatiguing work, as the feet often slip back a foot or so at every step. But the botanist is repaid by the harvest of plants found only on such places in this colony, and in no other country in the world. The vegetation of the New Zealand Alps is quite unique, almost every plant being confined to the colony. Thus a rich harvest was reaped by Dr. Haast and Dr. Sinclair on their first explorations of these mountains, and Dr. Haast tells us that on his first visit to Mount Torlesse, now twenty years ago, he collected over thirty plants new to science. Of course now-a-days the case is different, scarcely anything new is to be found, but there is plenty of work to be done in working out the relationships of certain plants of doubtful position, and in determining the altitudinal range of the species.

My object on the present occasion was to study the native grasses in their wild state, and to obtain fresh specimens of what are called by the curious name of Vegetable Sheep, in order to determine their botanical relationships more definitely than has been done hitherto. In both these objects I was perfectly successful, obtaining an excellent series of rare alpine grasses and excellent specimens of both kinds of Vegetable Sheep in perfect condition. These are most singular plants, belonging to the Cudweed tribe, and which have hitherto been placed in the genus Raoulia. They grow on loose *débris* at 4500 feet to 6000 feet altitude, and form round or kidney-shaped patches like immense cushions, some of them as much as 8 feet across and 3 feet high. In one species the cushion is snow-white, in the other silvery-grey, and in both is formed of a dense mass of leafy branches, so closely packed together that a chisel can be thrust into the mass only with considerable difficulty. The flowers are so very small that their parts cannot be distinctly seen without a microscope, but in one species they exhale a delicious perfume. Owing to the peculiar shape and appearance of these plants they were, in the early days of settlement, sometimes mistaken for sheep by the shepherds, and hence the name.

After hours of hard climbing, scrambling over rocks and up shingle slips, enlivened at short intervals by the discovery of some rare or beautiful plant, which of course was duly transferred to the vasculum or tin box slung over my shoulder, I reached the top at noon, and, owing to the clearness of the atmosphere, a fine panorama met my view. The whole Canterbury Plain was spread out at my feet, with the Port hills and Lake Ellesmere in the east, whilst westwards Mounts Rolleston and Franklin shut out the view of the sea. Southwards the greater part of the Upper Rakaia Valley was visible, with the angular mass of Mount Cook in the extreme distance. The scene well repaid the trouble of climbing, and the pure mountain air was a most acceptable change from the close atmosphere of the lower plains.

The descent of the mountain is very easy, though a trifle dangerous. In order to get down quickly it is only necessary to sit down on a shingle slip, set your heels moving, and away you go at a pace far exceeding at times the average speed of a New Zealand express train. It is necessary to see that you are not going in the direction of a precipice, and to keep a good look-out for the small boulders which sometimes follow in your wake, and that is all the danger, unless, indeed, you attempt to stop too suddenly, in which case your nervous system is apt to receive a shock not forgotten in a hurry. In this kind of mountaineering the alpenstock, or some good substitute, is very useful. By the aid of a few of these shingle slides the bottom is reached in an hour and a half, or sometimes less.

One striking feature of the mountain is the paucity of animal life. Wekas are fairly numerous still, and as mischievous as ever. A few stone chats were to be seen on the lower slopes, and these were all the birds observed except a pair of rock wrens (Xenicus Gilliventris), which were hopping about on some boulders far up the mountain. This bird has peculiar large feet, evidently adapted to life among loose rocks. When frightened, it does not fly away, but hides among the rocks. The pair I saw were singularly tame for their kind, and performed some amusing antics apparently for each others amusement. On the way down I found large quantities of the rare mountain shield Fern, Polystichum cystostegium, which grows in snow runnels, and forms compact green masses of soft-textured fronds with curious bladdery fruit. A lovely yellow flowered species of Forget-me-Not also rewarded my search; it is probably the finest of the family, and will no doubt become a great favourite in gardens. It is strange that Mount Torlesse is not more visited by tourists, as the view from the top is so fine, and the exercise of climbing very healthful.

Lake Lyndon, a fine sheet of water, and the highest lake in the province, lies at the western foot of Porter's Pass, and affords some shooting and fishing, with capital camping ground on its banks. The whole can be easily reached the first day from Christchurch, and may some day become a popular resort.

"*Littleton Times*," *New Zealand*.

## RHODODENDRONS IN DRY SOILS.

THE present race of hardy Rhododendrons hold undisputed possession of the first place amongst outdoor flowering shrubs. The endless variety in the colours, shades, and markings of the flowers of the numbers of fine varieties now existent, combined with their profuse blooming disposition, leave little to be desired. Even when not in flower their handsome dense glossy foliage renders them second to none of the evergreens in cultivation for their leaves alone. Consequently it is no wonder that all who are located where the character of the soil is naturally such as suited to them or admits of being made suitable, give them the first position in their planting arrangements. As to the nature of the soil Rhododendrons like best it goes without saying that peat is the material before all others which they prefer. It used to be thought that they would not succeed without it, and on the strength of such supposition, where soil of this nature is scarce, much trouble and expense has often been incurred in procuring it. One thing, about which there can be no question, is that these shrubs cannot thrive where there is a deficiency of moisture within reach of their roots. The moisture-holding property of peat has a good deal to do with the liking these plants show for it, independent of the natural food elements suited to their wants which it contains. A cool bottom is what they like, such as is present where the subsoil is composed of clay, which as a matter of course does not admit of the water passing except slowly through it. Where such is present, and where in addition the upper soil within reach of their roots is alike of a nature that admits of its holding moisture, there Rhododendrons are to be seen in their best form. Where the opposite of this exists both as regards the top and under stratum—that is, where in addition to the surface being of a light nature it rests on gravel or sand—something requires to be added if Rhododendrons are expected to succeed. Those who have had anything much to do with the plants under notice are no doubt aware that where peat is scarce clay can be made to do duty in the place of peat. Yet this is evidently not so generally known as it might be, and in many cases where clay is used the way it is applied is such as to preclude the possibility of its being of much benefit to the plants. Clay when fresh dug, and in its crude raw condition, is totally unsuited to the roots of any plant, being too adhesive for them to enter it; whenever used, it should, before being dug in, be allowed to lie on the surface until it is pulverised—a state to which it is soon reduced either in winter or summer; in the former by the action of frost, in the latter by the drying influence of the sun, followed by rain: either way it crumbles down so as to admit of its being evenly incorporated with the soil, and helping it to hold moisture, and in this condition the particles of the clay are in a state to invite the roots to enter them, which they do freely. In light dry soil, where a selection of good Rhododendrons was to be planted, I have worked in as much as 8 or 10 inches of clay. The ground was prepared during summer for planting in autumn; half the quantity was laid on first; as soon as fit it was dug in, and a second application followed. Where so much as this is given, if all put on at once it is difficult to get in condition. In place of letting the clay have time to thus become fully disintegrated, it is not unfrequently dug in at once, simply chopping it in pieces with the spade, in which state it is little capable of holding moisture, besides being impervious to the roots. I have seen ground where raw clay without stint had been added for Rhododendrons, and which, after lying several years, was little altered in condition; the square lumps as left by the spade had kept intact, the roots refusing to enter them.

In parts of the kingdom where the rainfall is light and the subsoil is such as not capable of retaining enough moisture, however liberal the addition of

clay or peat may be, it often becomes necessary to water freely in dry spells during the growing season.

Where large breadths of Rhododendrons are grown, the labour involved often precludes the possibility of this being done unless special provision in the shape of hydrants and hose-pipes is made. But where the natural soil is of a character to require additions, such as instanced, it is better to keep the quantity grown within limits that will admit of their receiving the attention they need. There are no plants existent that better deserve to have all they require than Rhododendrons; but, the young shoots flagging day after day, as may often be seen in dry summer weather, is the certain forerunner of a thin crop of flowers the year following, and a sickly condition of the plants. One of the most common mistakes made in preparing the beds for these, and other things, in dry districts, is rounding them up in the middle in place of making them flat. By this means half the rain that falls runs off to the sides instead of soaking equally in over the whole surface. The advantage of picking the flower-heads off as soon as faded, before seed formation takes place, is sufficiently known, but far from being generally acted upon. *T. B.*

## PRCFITABLE FRUIT CULTURE.

MR. WATKINS, a practical fruit grower, in a paper read before the members of the Herefordshire Chamber of Agriculture, cited two successful cases of Apple growing last season that came under his own notice. In one case a small orchard of about three acres was recently planted with standard Apple trees of good sorts for table and kitchen use. The trees were properly cared for and manured, and as some sorts were found to be growing too freely they were root-pruned. The result was a magnificent crop of fruit last season, which realised about £16 per acre after paying all expenses.

In the other case an orchard was placed in Mr. Watkins' hands. The trees were a mixture of culinary, dessert, and cider Apples, a few of the sorts being inferior; but care was taken in picking and selection, and there was a profit of £15 an acre. In both cases grass was grown in the orchards, and paid the rent. On the other hand, he said, there were hundreds of acres of orchards in the county that barely paid the rent, but only because the trees were mostly of inferior sorts, not fit for cider or any other purpose.

Many more than the 188,000 acres of land under fruit in the United Kingdom might be similarly employed if tenants had proper security for their capital, and if varieties suitable to the climate and soil of the district were selected. All sorts of small Apples must be discarded by those who grow for profit—such sorts as Court of Wick, Golden Harvey, Old Golden Russet, Downton Pippin, Pearson's Plate, Sam Young, and many others.

The following are a few of the varieties which succeed in most soils, and should be extensively planted:—Yorkshire Beauty, Keswick Codlin, and Echlinville Seedling for early culinary Apples; Beauty of Kent, Warner's King, Mère de Ménage, Hambledon Deux Ans, Blenheim Orange, and Dumelow's Seedling for mid-season and late culinary supply; Devonshire Quarrenden, Duchess of Oldenburg, and Worcester Pearmain for early dessert Apples; King of the Pippins (also called Prince's Pippin), Seek-no-Further, Cox's Orange Pippin, Duke of Devonshire, and Devonshire Pearmain for mid-season and late dessert Apples; and Cherry Pearmain, Cowarne Red, Forest Styre, and Kingston Black for cider.

In an exposed situation plant rather thickly, say 18 feet to 20 feet apart; but if you have a sheltered situation, with a good deep and generous soil, give the trees plenty of room—30 feet or more. Apple or Pear trees may be planted alternately with Plums; the Plum tree is a much shorter-lived tree than the Apple or Pear, and comes into bearing sooner, thus bringing in a return till the other trees get fairly grown. A strong grower and a small grower may be placed alternately each way. Yet another plan is to plant them in hexagonal form instead of square; that is, instead of the trees being exactly opposite each other in adjoining rows, they are midway, thus giving more room to each individual tree without increasing the distance between or in the rows.

In filling up old orchards never plant in the old holes; it is better to get the trees planted irregularly than to do this. Deep digging is essential in planting; but the trees should not be put in too deeply.

The want of care in picking and packing the fruit is a frequent cause of loss. Mr. Watkins prefers autumn planting, except in cold wet soils, where he would plant in spring, not later than March.

## POLEMONIUM CONFERTUM.

THIS is probably the most beautiful species of the genus. It is a native of the Rocky Mountains of Colorado, and of the Californian Sierras. It is of dwarf habit, more or less densely covered with Musk-scented glandular pubescence, with linear pinnated leaves, the pinnæ very numerous, and overlapping, roundish-oval to linear-oblong. The flowers are clustered on the ends of the stalks, rich blue, funnel-shaped, about half an inch across, and have three ovules in each cell of the ovary. The specimen



FIG. 3.—POLEMONIUM CONFERTUM.

from which our figure (fig. 3) was taken was grown in the garden of E. G. Loder, Esq., of Floore, Weedon.

# Orchid Notes and Gleanings.

### CATTLEYA MOSSIÆ (WHITE VARIETY).

A SUPERB form of this is now in flower with H. M. Pollett, Esq., at Fernside, Bickley, who seems to have a happy knack of acquiring good things and growing them to perfection. The variety in question has soft white sepals and petals of fine substance. The labellum is of great beauty, the throat being veined with mauve, merging into dark orange, showing the white veins, which also run into the pale mauve tint which fronts the orange, the whole of the lip being edged with a handsome pure white fringe, half an inch in width. It is one of the very best of white Mossiæs, and some idea of the massive appearance of its flowers may be formed when we consider that actual measurement proves each petal to be 4 inches in length and 3 in width, every point of the flower coming into a perfect circle. Phalænopsis Mariæ and several phenomenal Odontoglossums have just flowered with Mr. Pollett, whose collection always has an extraordinary proportion of fine things in bloom. *J. O'B.*

### ODONTOGLOSSUM CRISPUM.

Baron Schroder has most kindly sent me, as my share of the Conference Exhibition, three varieties of this protean plant. I think if any varieties deserved to be picked out, at least two of these have the greatest claim. As to my private taste, I admire, as much I can admire a plant, the one I have called elegantissimum, for the chaste nobility of its colours. As is the general rule with Baron Schroder's consignments, these came fresh and richly represented, and unusually well packed—the flowers in the thinnest paper, then in cotton—so that they did not come out of the box woolly as lambs.

*1a. Sanderiana.*—This has both sepals and side petals very broad. Sepals nearly covered by the finest mauve-purple, with very narrow white borders, and one or two small white included areas. Lip with some large spots of the same colour. Column yellow, with purple below the top. Wings of column exceedingly variable. I gladly adopt the name, which would appear to have been given at the Orchid Conference in honour of Mr. F. Sander. It is the highest development of crispum fastuosum I ever saw.

*2b. Ballantynei.*—This has the sepals nearly covered with a grand blotch of a very fine colour. I nearly imitated it by adding sepia-brown to cinnamon. Petals neatly high and angled, with one or several similar spots, but showing far more white, producing a very good contrast. There were some similar but smaller spots on the lip and apex of the column. It is light yellow at the base of the column and at the base and anterior part of the disc of the lip, and at last place exceedingly light.

No. 3 is *elegantissima*, a crispum Alexandræ guttatum, with an unusually broad lip and some mauve at the apex and base. *H. G. Rchb. f.*

### CALANTHES AND THEIR CULTURE.

Such varieties as C. Veitchii, C. superba, &c., when in bloom, are very generally acknowledged to be exceedingly decorative, and for early winter blooming they have few to equal them for usefulness. The bloom-spikes keep in perfection a long time when used in the living-room, as pot plants in vases, &c., and the flowers are equally good as cut bloom, for which they are very suitable if kept in the warmest part of the conservatory, and kept free from draughts of cold air, and given but little water; they are, therefore, most convenient plants for the decorative gardener to have on that account. I grow about seventy pots in three sizes, viz., 6-inch, 7-inch, and 8-inch pots, three bulbs in each pot. I select the largest bulbs for the largest pots, and with the following treatment they bloom about the middle of October, bearing spikes of flowers 2½ to 3 feet in length, and at that season, when good flowers are usually very scarce, they are very effective. I keep up the supply of them till January, and they can be kept much longer if required.

About the middle of March I pot them into the three sized pots as above-mentioned. The compost to be used may consist of half good fibrous loam, one-fourth turfy peat, and one-fourth of dry cowdung, well mixed, with a little broken charcoal. The cowdung should be thoroughly dried either in the sun or on the hot-water pipes till it is quite hard, when it should be broken into pieces about the size of Walnuts, and mixed up with the other materials. The pots should be well drained, and the soil should be firmly pressed round each bulb when potted. The most suitable place for them to stand is on shelves in the front of the fruiting Pine stove, where they are kept till the flower-spikes are seen, about the middle of October; and as they come into flower they are removed into the plant-stove and drawing-rooms and conservatory. Many of my plants have now leaves on them 18 inches and 2 feet long, which require very great care and attention to keep them on through the flowering season. The temperature most suitable for them is 75° to 80° by day, and 70° by night, and placed on a light, airy shelf, shaded from the sun, during the daytime. I syringe them daily in April, May, and June, but not after that time, but keep the leaves dry. They have air every day.

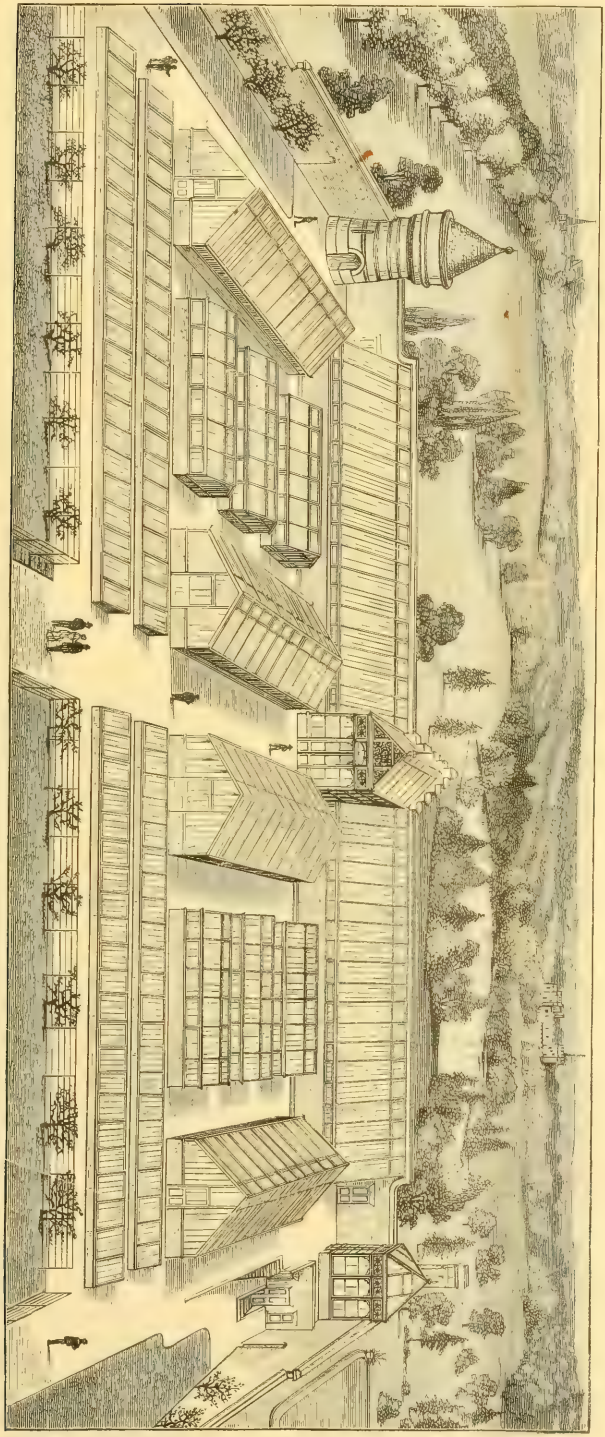


Fig. 4.—New houses at Buchan Hill, Crawley.

As soon as the plants have done blooming I take them back to the Pine stove, and pack the pots away under the shelf, putting the pots on their sides. They can remain there till potting-time comes again, when the bulbs will have begun to throw out young shoots at the sides, indicating that it is time to recommence operations. I shake all the old soil from the bulbs at repotting, and sink the bulbs to half their length in the soil.

Propagation is very easily accomplished, as the bulbs or pseudobulbs, when they are dry and ripe, shed the top of the bulbs, which will strike freely, and make new plants if potted in the same soil as recommended for the older bulbs. *Wm. Smythe, The Gardens, Basing Park, Alton.*

### Burmese Dendrobes.

In the new edition of Mason's *Burma* we find the following notes from the Rev. C. Parish concerning D. Dalhousieanum, D. calceolaria, D. moschatum, and D. fimbriatum:—"Of the four species here described, D. Dalhousieanum and D. calceolaria have creamy-white flowers tinged with rose. D. moschatum and D. fimbriatum have yellow flowers. D. Dalhousieanum may always be infallibly distinguished by the purple lines on the first season's stems, whereas those of D. calceolaria are stippled and not striped. As the stems of D. moschatum, however, are also stippled, I know no mark whereby to distinguish this species from D. calceolaria when out of flower. When in flower the colour alone (yellow) is sufficient mark. D. fimbriatum may at all times be distinguished from the other three, both by the absence of all special marking, and by the circumstance that its stems (according to my experience) invariably taper at both ends, being stoutest in the middle. All four are beautiful Orchids, but D. Dalhousieanum bears the palm. I may add, that D. moschatum and D. calceolaria smell strongly of Rhubarb, the other two do not. They are all abundant in the ten Asserim Provinces, except D. calceoria, which I never found but once."

## BUCHAN HILL, CRAWLEY.

Our illustration (fig. 4) represents a group of garden erections which have recently been built by Messrs. H. Ormson & Co., of Chelsea, horticultural builders, for P. Saillard, Esq. These houses form a rectangular parallelogram at the northern side o the kitchen garden, from which they are separated by a fence or espalier of fruit trees. The conical-roofed structure in the left-hand corner is a reservoir for water, the tank being overhead, so as to obtain sufficient force to carry the water to any point in the houses and gardens. The building in the opposite corner is a plant-house, near it being the stoke-hole and boiler-house, containing the two Trentham boilers with which the houses are heated.

The northernmost range consists of a span-roofed greenhouse in the centre, flanked on one side by two vineries, an early and a Muscat-house, and on the other by a late vinery, the end divisions of the range being Peach-houses. The central path divides a span-roofed plant stove from a greenhouse of the same external construction. The span house to the right of the group is intended for a late vinery, and that to the left for the culture of Roses. These four span-roofed houses measure each 60 feet in length by 20 feet in breadth. The smaller erections lying between these are pits, to be used for a variety of useful purposes, as propagating, Melon and Cucumber growing, for Pine-apples fruiting and succession, Gardenias, &c. Each is 30 feet long and 14 feet wide.

The long rows of pits on the south side of the block comprise two warm ones and two cold ones, 88 feet long by 6 feet 6 inches wide—capital adjuncts for vegetable forcing. The whole is surrounded by a brick wall, on which it is intended to grow fruit trees. In the construction, the best Pitch Pine has been employed, and every useful modern appliance in ventilating has been adopted.

Tree Lupines.—These are plants common enough in gardens some twenty years ago, but now rarely seen. At Mr. Barr's nursery at Tooting great bushes of them are to be found 7 feet in height, perfectly loaded with their short spikes of primrose, light blue, and white. They are well adapted for shrubbery borders and the like places.

## FRUIT TREES IN BOKHARA.

The first thing that struck me, says the Rev. Dr. Lansdell in his recently published work on Central Asia, was the enormous size of the Apricot trees, standing like avenues of old English Pear trees, from 30 to 40 feet high, whilst in circumference the first I measured was 3 feet 10 inches, and the next 5 feet 3 inches, the latter being about four years old.

The wood is good for fuel only, but the Bek of Shahr had told me they often grow so many Apricots that they do not trouble to gather them. They have three sorts in Bokhara, the earliest being ripe towards the middle of June. A second kind, white, is obtained by grafting, one peculiarity in the process being that the scion is first dipped into a bowl of fresh cow's milk. Of a third and reddish kind, the stones are largely prepared as food. The dried Apricots, called "Mriark," of which I had read so much, were to me disappointing, and, till cooked, uneatable.

The Cherry and Peach trees did not strike me as so remarkable. Both are usually grown from the stone. The fruit of the Cherry, being acid, is very little used. Peaches are of three varieties, distinguished as red, white, and green. When sown the seed is put in the earth two fingers deep, before the frosts set in; water is then let in and allowed to freeze. After that earth is put over it and left till the following spring, when the young shoots are transplanted at intervals of four paces. The best Peaches are said to come from Samarkand.

The Vines in the Bek's garden were in some cases allowed to trail, and in others were trained to form colonnades, under which one might walk. In Bokhara are cultivated thirteen different kinds, and of these we tasted several. A small round, greenish variety, called "Kishmish," was thought much of, but there were larger kinds, the berries of which measured from 1 inch to 1½ inch in length. The mode of cultivation, however, was to me more curious than their flavour. In grafting, the stem being cut, they raise the bark all round for half an inch, though without removing it from its point; they then peel the graft for an equal distance and fix it on the stem, binding it all round with the bark. The two soon unite, and next year the Vine yields fruit. In autumn a trench is made, and the tops of the Vine buried beneath the soil for the winter. The soil chosen for the Vine is half clay and half sand, enriched with from 1 to 2 tons of manure to the acre. The ground is usually watered twice before budding time, and once towards the end of May, when the earth is completely inundated for 24 or 36 hours. A good crop averages from 40 to 50 tons to the acre.

Towards the end of the summer the bunches are enclosed in bags, and cut off later on to be suspended from the ceiling, and so preserved through the winter as food, but not pressed for wine. On the manufacture of this I neither heard nor saw anything in Bokhara, unless it were to some insignificant extent among the Jews. The Bokhariots use the Grape for making syrup and vinegar and for raisins. The last is done by exposing the picked fruit to the sun on the housetops for three or four days, whilst the syrup is made by treading Grapes in a cylinder lined with plaster, refining the juice with pounded clay, and then boiling it to the solidity required.

We saw likewise in our garden many dwarf Pomegranate and Fig trees, planted in what appeared like sunken beds, the muddy-looking soil at the bottom showing that it was so done for purposes of irrigation. The Pomegranate requires a more sandy soil than the Vine, and that it be under water the whole of every tenth day. A tree springing from seed can yield fruit in the fourth year. Bokhara Pomegranates are excelled by those of Shari-saby, where also is a peculiar kind, with small seeds, called *bidone*, or seedless. The Bokhariot gardeners think the crop improved by the tree being dwarfed.

The Fig tree requires no peculiar soil, and only two fingers' depth of manure; but as the fruit advances towards maturity the roots have to be covered with water three days in the week. The crop is usually from 70 to 140 lb. from one tree.

They have two kinds of Plums—yellow and black. Of course, by October 11 we were late for fresh fruit, but I observed some of the *siah*, or black Plums, on a branch suspended in a shop, which having told Yakoob to purchase, I found particularly well flavoured. From 150 to 200 lb. usually grow on one tree. There were in our garden Apple trees, but none of the round fruit. These last are brought from Hazarasp, but I cannot say much for the flavour of any I tasted in Central Asia, as compared with good sorts in England. Of Quince trees we had noticed abundance at Khokand and elsewhere. They grow on almost any soil, and need little water. The fruit is not eaten raw in Bokhara, but minced meat is mixed with them; the seeds are administered in medicine, the pulp is used in soups, and, once more, boiled Quinces are prescribed as good against humours.

The various sunken beds, to which I have referred, in the Bek's garden, were connected by runnels with the quadrangular pool near the women's apartments, and near this pond were shady trees and two or three flower-beds; but of flowers there were only three or four varieties, and those of the commonest in England. The Bokhariots cultivate flowers only to a very limited extent—the Rose, however, among them—and then not for ornament in the house, but simply to be carried.

## THE GENUS ARCTOTIS.

This is one of the finest of the interesting and beautiful Cape genera which have been neglected for a long series of years. In some measure this neglect is due to the modern taste for indoor decoration, which necessitates the devotion of considerable resources and attention to a class of plants suitable for the purpose. Be this as it may, we are assured that popular favour may be revived, by the late satisfactory appreciation of alpine and herbaceous plants which formerly suffered the same neglect, and those who do appreciate the beautiful Cape Heaths and choice greenhouse plants in general, can scarcely do too much to show forth their claims for a much larger share of attention.

Of the four cultivated species of this genus two at least must be regarded as valuable greenhouse plants, and another, the one annual kind we have, is ornamental in pots or on the border out-of-doors. They are as follows:—

*A. aureola.*—This very fine species has long been an inhabitant of our gardens; it was introduced in 1710, was figured in the *Botanical Register* in 1815, and during later years it has been known as a rarity in several choice collections. For a long time it was known erroneously as A. grandiflora, but when the correct name was applied about three years ago, Mr. Harpur-Crewe remembered that it was the name he originally used. Quite wrongly, I think, judging from cultivated specimens, it is placed by De Candolle and Harvey as a variety of A. aspera—a mistake, I believe, because it is in no degree hispid or scabrous, but always soft and cottony, and because it appears specifically distinct from the undoubted variety we cultivate as arborescens. The figure in the *Botanical Register*, t. 32, evidently represents our plant, though the colour was made or has become too dark. A coloured plate, drawn from Cambridge specimens which had been verified at Kew, was published in the *Garden*, October 14, 1882. Mr. Gumbleton, in a letter to me shortly before, pointed out that it could not be A. grandiflora, but that it was rather A. aureola. He also said in the same communication—"Mr. Crewe writes me that when first he got the plant from the late King of Scilly, Augustus Smith, it was named A. aureola, and he so called it for several years, till he found every one else who had it, called it grandiflora. In habit it forms a small stiff erect shrub; the stems are covered with silky tomentum, as also are the leaves, which have a silvery appearance; they are pinnatifid, with long, spreading and undulated lobes. The flower-heads are 4—4½ inches across, and the rays are of fine orange colour, without dark basal blotches, in the absence of which it differs conspicuously from A. grandiflora.

The cultivation of this species is not perfectly easy, for although it does not often die, it is liable to become yellowish if it is not happy at the root. I have, however, I think, found a means of growing it well without trouble, and that is by grafting it upon A. arborescens, which is always robust and strong. A specimen so grafted last spring is now strong and healthy; it has made free growth, and is the best I have. It has had, I think, five flower-heads open at once on the same branch, and each about 4½ inches across. The grafts appear to take no more easily than the cuttings root, but the after success is evidently worth the trouble of grafting. Cuttings are most easily rooted in July and August, and they must have hard wood for insertion in the soil, as soft tissue is sure to rot. The cuttings should stand on a greenhouse shelf with but sligh shade, and a bell-glass should not be used, as it appears by enclosing moisture to do more harm than good. I think, however, when a sufficient amount of care can be assured in watering, that a bell-glass may be of service. Gardeners who succeed well in striking Centaurea ragusina will succeed with this, as it requires similar treatment, being of a somewhat like nature, though it is of more delicate vitality. In potting it is important not to use unnecessarily large pots, because a large body of soil with few roots is liable to remain too long wet. The drainage must be good, and the soil should consist of good loam with enough grit or sand to permit free percolation of water. In winter the plants grow, following, as many kinds do, the time of their activity in a wild state, and therefore, though growth should not be encouraged, it must be allowed, and water should be given to keep the soil in only just appreciably moist condition. The object is to have as much growth as possible in the longer days of spring, when the flowers are much the finest, though they are produced also at other times of the year, often freely in summer, but principally after Christmas. I have never known good seeds to be saved from this, or the two other frutescent species, and I have failed to cross it with A. aspera var. arborescens. I have tried A. aureola in the open ground, out-of-doors in summer, where A. aspera arborescens does so well, but it did not flower, and the general result was not so good as by pot cultivation, though Mr. Harpur-Crewe has found it effective as a summer-bedding plant, and therefore it will have to be tried again. In Scilly it is perfectly hardy.

*A. aspera var. arborescens.*—I found this plant when I came to the Cambridge Botanic Garden, and I have not been able to discover that it was cultivated anywhere else at that time. I find in the University Herbarium a specimen named A. aspera dated 1826, so that probably it has been cultivated from or before that year to the present. In the *Botanical Magazine* Sir Joseph Hooker says "It was cultivated in England before 1710, and in Holland much earlier, for it is described in Johan Commelyn's *Hortus Medicus Amstelodamensis*, published in 1697, as "Anemolospermos Africana, foliis Cardui Benedicti, florum radiis intus sulphureis." There is a figure of it in Jacquin's *Hortus Schœnbrunensis*, published in 1797, and the next after is the beautiful one in the *Botanical Magazine*, 1880, t. 6528. This is the A. arborescens of De Candolle, that of Willdenow being the A. maculata of the *Botanical Register*, t. 130, and of Jacquin, *Hortus Schœnbrunensis*, ii., 171, which is A. aspera var. scabra of De Candolle's *Prodromus* and Harvey and Sonder's *Flora Capensis*. Our plant differs from it in the colour of the flower, and in having softer foliage. Willdenow's A. arborescens has white ray-florets tipped with orange, and orange-coloured beneath, while the rays of this plant are creamy-white, yellow at the base, and tinted below with rosy-pink. It is described by De Candolle, but omitted by Harvey. Besides the figure in the *Botanical Magazine*, from Cambridge specimens, there is an illustration in the *Gardeners' Chronicle* from the same source February 3, 1883, p. 145. It is certainly a valuable species, and, unlike A. aureola, it is grown and propagated with the greatest facility. It is shrubby in habit, but the stems are weak and require some support in pots; out-of-doors in beds this decumbent habit is advantageous, as the plant spreads instead of becoming unduly tall, and no sticks are necessary. The leaves are extremely elegant, oblong, or oval, and pinnatifid with lanceolate lobes, angularly toothed, and undulated. The flower-heads are from 2½ to 3 inches across, and coloured as before described.

For cultivation in the greenhouse it is one of the most charming of Composites, and the flowers are chiefly produced during late winter and spring. The cut flowers are very lovely in vases, and they remain open at night, though on the plant they close. The buds are pretty because of the flush of pink beneath the ray, and they expand well in water. As a flower-bed plant I have found it extremely attractive, though it does not flower until some considerable growth has been made; it forms an excellent undergrowth for such large-leaved plants as Ricinus, and the creamy flowers and light green foliage contrast well with the red-leaved kinds. Its cultivation is so easy that little need be said; it should have a position always in full light, and in striking cuttings it is better to give too little than too much water. *R. I. Lynch.*

(To be continued.)

# Florists' Flowers.

## THE CALCEOLARIA.

It will now be quite time to sow seeds of the choice florists' strain. These showy flowers are almost indispensable ornaments in our greenhouses and conservatories during the summer months; they make a splendid display during April and May. Those of us who have been watching the progress made in the way of improvement during the past thirty years feel confident that it has been much greater in the past decade than it was in the twenty years preceding it. The newer brilliant colours, such as orange-scarlet, crimson, crimson-scarlet, crimson tinted magenta, &c., are not only valuable acquisitions as regards colour, but the flowers themselves are of full size and good form, thickly placed on dwarf plants, or at least dwarf in comparison with the named varieties of the old florists, which were borne on stems 2 feet high or more. The best or, indeed, the only way of propagating these Calceolarias is by sowing the seeds as soon as they are ready in fine sandy soil, placing the pots or pans in frames or hand-glasses in a shady place. A frame facing north or a handlight behind a low wall is as good a position as can be found for the young plants when they vegetate. The tiny seeds must scarcely be covered with the finest soil or sand. It is necessary to shade from the sun until the plants are well up; indeed, at no period of their growth should they be exposed to the scorching rays of the summer's sun. If this should happen during the process of the vegetation of the seeds the embryo plants would all be killed. Prick off the little seedlings as soon as it is possible to handle them, if the plants vegetate thickly in the seed-pans—they soon die off from overcrowding if not speedily separated.

## AZALEAS.

It is safe to say that few hard-wooded plants are more easily grown than the Azaleas if they are kept clean, and one or two essential points in their culture carefully considered. At present they are, or ought to be, making or completing their growth in the hothouse. At that time they luxuriate in a moist Cucumber-house or Pine-house temperature, being shaded from the direct rays of the sun. They ought also to be well supplied with water at the roots and overhead. Those not repotted ought to be surface-dressed with some artificial manure. I have always used a small quantity of guano—a teaspoonful to a pot 10 inches in diameter. I mix with it a good handful of sandy peat, and spread the mixture thinly over the surface. The small rootlets soon form a perfect network in the dressing: another may be applied in two weeks. This causes a very vigourous growth, and the leaves become of a darker green. On some plants the flower-buds set too thickly; in that case it is best to thin them out. When the buds are set, give more air, less shade and heat, the plants to be ultimately placed out-of-doors; but do not be in too great a hurry to place them outside. Azaleas do best out-of-doors in the late autumn, when the leaves are laden with dew from dusk to daybreak. *J. Douglas.*

# MESSRS. BARR'S GROUNDS, TOOTING.

Herbaceous Pæonies are just at present obtaining special attention at Mr. Barr's hands, and we found the finest collection of these showy plants which it is perhaps possible to meet with anywhere in this country. In making the collection much difficulty has been met with, owing to the confusion existing in the various sub-sections of the genus, different authorities holding a variety of views as to which are the distinguishing points of P. mollis, P. edulis, P. officinalis, P. decora, P. paradoxa, &c., and even if any order may eventually be arrived at in the modified chaotic condition of the genus there will yet remain the parentage of the various hybrids to clear up.

The quantity of plants that have arrived at a flowering age, and which have been collected at no small expense from home and Continental sources, permits of a botanist identifying, by means of the excellent living material, many of the species with a maximum of certainty. And should that desirable object be attained, much benefit ought to accrue to the public generally, as it would then know with reasonable certainty, when making purchases, that the plants were what they were said to be. Mr. Barr is especially to be commended for his useful endeavours in the way of clearing up the many disputed and doubtful facts in connection with Pæonies.

## IRISES.

Of the germanica, squalens, and variegata species, the flowers were mostly over, and the best of the remaining ones were being cut for an impending show. That a wonderfully complete collection has been here got together admits of no doubt, and the success that is seen in their culture proves that the soil suits them generally to perfection. It was a great treat to see great beds of Iris virginiana, sheets of blue and white, the flower-stalks tall and slender, and the newly opened flowers unrivalled in their colours. These plants always look best in colonies, as in isolated small patches the delicate blues, purples, bronzes, browns, and other colours not easily described, are not noticeable in the same degree.

# Plants and their Culture.

## DIVERSE FERNS.

There are several species of exotic Ferns which deserve more recognition than they generally receive in most gardens. Notably so is this the case with Asplenium cicutarium, than which it is hardly possible to select a more light and elegant Fern when well grown in large 60's, or even in smaller pots than these. It has a special adaptability for cultivation in small pots, and in such we have used it effectively in groups at exhibitions, and likewise in dinner-table decorations, placing the pot in a finger basin and filling in the intervening space between the pot and glass with fresh green moss. This Fern is not one of the easiest to propagate, but if a well established plant can be obtained, seedlings can be secured, and a stock gradually worked up. The tinted Adiantums, A. tinctum and A. rubellum, are also very pretty in a small size, being distinct and striking in the beautiful tints of their younger fronds. Cheilanthes hirta Ellisiana is one of the most effective of its genus, of stronger growth than C. elegans, and of a deeper green shade. This, like the Asplenium just named, is most useful when of a medium size, and is very readily propagated from spores. When growing this genus it is well to allow them an abundant supply of water at the roots, and a rather dry atmospheric condition if possible. Hypolepis distans, of semi-scandent growth, is a rarely seen Fern which thrives well in a cool moist house, and can be increased both by division and from seed. Onychium japonicum can be increased in a similar manner, being an excellent and durable Fern for conservatory decoration, where Pteris tremula can likewise be turned to a good account, particularly during the summer months. *James Hudson, Gunnersbury House Gardens, Acton.*

# Fruits Under Glass.

## THE VINERY.

In early started vineries the Grapes will, ere now, be cleared off the Vines entirely. This will allow the ordinary course of syringing them twice a day now to proceed uninterruptedly. On sunny days, however, the surface of the borders should also be thoroughly well moistened, in order to keep the atmosphere cool and salubrious—a condition much needed about early started Vines at this season for the preservation of their foliage and for the perfecting of the wood. As the season advances and the foliage on these Vines matures and becomes thin the surface or mulching materials on outside borders will naturally, by the powerful effects of sunshine, be liable to become dry much sooner than before; as this material is undoubtedly permeated by the young roots, which should be carefully preserved, it will, under those conditions, be advisable to add a little more to the mulching material for this purpose, and thus encourage these rootlets to grow and take up the nourishment which is applied for the benefit of the Vines, which at this season need much support; therefore whenever necessary give diluted manure-water at the roots abundantly, and see also that the outside borders do not lack for this element.

In those houses where the Grapes are ripe, and these are required to hang on the Vines for some time to come, it will be necessary to keep the house cool and moderately moist, giving them air at all times, and an abundance of it during the prevalence of hot dry weather. Although these conditions are indispensable to keep them fresh and plump, these should however be exposed by degrees, so that the temperature accorded to the Vines during the ripening process is not brought down low too suddenly. In houses in which Grapes are now colouring, the temperature, both by night and by day, should be kept as uniformly as possible at about 70° and 80° respectively; for this purpose a little fire-heat will at times be required, so that the air at the apex of the house may be admitted constantly, thereby ensuring a circulation of a warm and genial nature. When sunshine abounds, freely ventilate and also maintain a moderate degree of moisture by sprinkling available places within the house. *G. T. Miles, Wycombe Abbey Gardens.*

# The Hardy Fruit Garden.

## WALL TREES.

Peach, Nectarine, and Apricot trees on walls should by this time have all superfluous shoots thinned out to the proper distance apart. Nothing is ever gained by having the shoots crowded; from 9 to 12 inches apart is a good distance, but it is better to err on the side of having the shoots too thin, than crowded thickly on the walls. Where any gross shoots appear they should be cut back to one or two eyes so as to encourage a side growth to take the place of the gross shoot—for these last seldom bear any fruit and as a rule only rob the tree if allowed to grow unchecked. Pears, Plums, and Apples, on walls, should have all side shoots stopped, and well thinned out. Where there is little fruit on the trees, it will be found that such tree will make strong growth instead of forming fruit-buds. These shoots are better thinned out by breaking a number of them right off the stems. This is to be preferred to cutting back to one or two eyes, as by cutting, a thicket of young growth ensues instead of fruit-buds forming. Bush and and other trees may be treated in the same manner. Cherries and Plums may be budded at any time during the month. Strawberry runners not required for forcing or forming new plantations may be removed every week, should time permit. If not convenient to layer in pots, they may be lifted, and pricked out thickly in a frame, where, if kept shaded and well watered, they soon form plants fit for potting up, or for making new plantations. *J. Smith, Mentmore, Bucks.*

# The Kitchen Garden.

## SEED SOWING.

Any spare ground at the foot of sunny walls should now be sown with French Beans, and dwarf early Peas, placing the seed at about 1 foot distant from the wall, as in Potato planting. Both these will continue bearing in the autumn much longer than plants in the open border, they are also easily protected. Should the soil be dry, water the drills just previous to sowing, and as soon as large enough they should be well mulched. A frame of each should also be sown; not placing the lights over them until the nights get cool in the autumn. The following varieties of Peas are suitable for sowing in frames in the middle of July:—American Wonder, Chelsea Gem, and McLean's Little Gem.

A good sowing of Cos Lettuces should take place in the first or second week in July; these will be full grown before frost sets in, and if lifted and placed in frames or houses, will keep up the supply for a month or so later. Hick's Hardy is the best green Cos for this purpose. Unless with the idea of lifting when partly grown, to place in frames, the above should be the last sowing of white and green Cos. About the middle of July sow a good bed of hardy Brown Cos and several good winter varieties of Cabbage Lettuce, such as Hammersmith Hardy Green, Stanstead Park, and Hardy Dutch. The last outdoor sowing of Cabbage varieties should be made the beginning of August; these will come in for planting under walls and in sheltered positions, or planting in frames. Endive sowing may now commence. *G. H. Richards, Somerley, Ringwood, Hants.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| TUESDAY, | July 7 | National Rose Society's Show, at the Royal Horticultural Society's Gardens, South Kensington<br>Ealing, Acton, and Hanwell Show, in Gunnersbury Park (two days)<br>Sale of Imported Orchids, at Protheroe & Morris' Rooms<br>Lee, Blackheath, and Lewisham Horticultural Society's Show (two days) |
| WEDNESDAY, | July 8 | National Rose Society's Rose Show, at Sutton, Surrey<br>Royal Caledonian Horticultural Society's Show (two days)<br>Sale of Plants, at Park Gates, Wanstead, by Protheroe & Morris |
| THURSDAY, | July 9 | Hereford and West of England Rose Society's Show, at Hereford<br>Sale of Importation of Rare Orchids from Mr. F. Sander, at Stevens' Rooms. |
| FRIDAY, | July 10 | Chiselton, Chester, Rose Show. |
| SATURDAY, | July 11 | Sale of Imported Orchids, at Protheroe & Morris' Rooms<br>Royal Botanic, Manchester: National Rose Society's Show, at Manchester.<br>Sidcup Show. |

IT is now a matter of certainty that the visitors at our various floral exhibitions are most numerous, and linger the longest over the bank devoted to the Orchids. This is not at all surprising, for there is much in such groups to arrest and fix the attention of those who know little and of those who have an intimate acquaintance with the numerous forms and varieties that are then displayed; here opportunities are offered for comparing forms that may have been seldom seen, or inspecting varieties that are quite new, whether natural hybrids or those that are the product of the skilful and patient hybridist; or, again, to gaze upon old favourites which, under the hand of a clever grower and equally clever exhibitor, are displayed in such a manner that the older forms often seem to be the best; and a determination is formed to endeavour at home to encourage growth and vigour in those under culture, so that the best results may be obtained in growth and flower. All this comes to the mind of those already possessing a knowledge, and having a collection at home to work upon; and then, too, to the many who have but vague ideas respecting this class of plants, those who simply gaze, and wonder, who express astonishment and surprise at every turn, whether in the inspection of the bulbs, roots, or singular flowers. Numerous examples of each class are always to be found around the Orchid groups, and doubtless for many years to come it will still be the same; and yet one cannot help thinking that even in this interesting class of plants, as we have hitherto seen them, there is room for improvement—that changes may be introduced which would certainly be beneficial, to the plants, to the exhibitor, and to the general public. For some time past a laudable attempt has been made, and if this is followed up more assiduously and determinedly it will, as certainly as anything can be predicted, be of service to the plants. We allude to the offering of prizes for *bonâ fide* specimens. No doubt, in the original offer of prizes at our different exhibitions, *bonâ fide* specimens were intended to be shown; but gradually, a lax and tolerant spirit creeping in, many specimens were admitted that by no attempt of reasoning or sophistry could be looked upon as single plants, until at the present time the chances are, that at most of our shows made-up plants are as numerous as those that are single specimens.

All have transgressed more or less in this matter; but though adopting the method nine out of every ten disapprove of the practice, and would much rather show their plants just as they are grown. Now to show sixteen Orchids there are often fifty, sometimes sixty, and it may have happened a larger number even than that have been used, shaken out, worked in, so that an effective group may be set up. Now instead of thus jeopardising, risking, and too often sacrificing a large number of plants, why not make classes for larger numbers of plants—say a class for fifty plants, admitting three of a sort? This would bring greater variety into collections, and would be equally certain to bring the best grower to the front. Another class for thirty—these should be mixed groups; then again a class for twelve Cattleyas and Lælias, two of a kind; the same for Cypripediums, and also Odontoglossums, with a clear understanding that they are *bonâ fide* specimens, not made-up or plunged for showing purposes. Each group should have worked in with it a stipulated number of Adiantum cuneatum, in 5 or 6-inch pots, so arranged that the light fronds of the Fern may help to throw up the beauty of the flower, as well, also, to hide in some degree the harshness of the flower-pot, or the angularity of the baskets, or the rusticity of the blocks upon which some may be growing. This method would be beneficial to the plants, it would also be an advantage to the grower, for how often after a show where made-up plants have been admitted has one to look along the stage in the Orchid-houses and note at a glance, by shrivelled bulbs and sickly leaves of such and such an one that was used on an important occasion, and is now suffering on account of the ruthless manner in which it was then treated? Such sickly subjects are the cause of considerable annoyance to master and man. And then to the public—first those who understand and know what Orchids should be—is there any pleasure to them in seeing thirty spikes of Odontoglossum Alexandræ all huddled together in a pan a yard across?—in a score of plants of Masdevallias placed with geometric precision in a square deal tray?—or a heap of Oncidium concolor fixed round an immense block?—or a company of Cypripedium barbatum and its varieties worked in so exactly that the flowers face all to the front? It is a pity that plants should be subjected to such treatment; and then the general public—those who having a few plants at home, are ever comparing their little plants with the elephants at the show, imagining, through imperfect knowledge, that the plants, as staged, are the standard by which their own should be judged; and thus a painstaking and careful man at home is placed at a disadvantage because he cannot produce anything like the plants at the show. And again, those who have no knowledge whatever of the culture and practices of Orchid growing and exhibiting—these often receive wrong and false impressions when such unnatural masses are placed before them; but if the plants were staged in the manner suggested, a great advantage would be obtained, and the groups at our shows would be much more effective and pleasing than the two or three rows of plants that are now mostly staged, with but little idea or attempt at beauty of arrangement or effective display.

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IN many respects, so far as the year his gone, THE SEASON has been a pleasant one. The flowering of the spring shrubs has been exceptionally fine, whilst the leafing of the greater trees has been everything that could be desired. A rather severe attack of caterpillar now on Oak trees in some districts, on Thorns in others, is, however, much to be regretted. Grass, cereals, and Pulse for the most part look healthy and promising. But doubtless there will be local complaints amongst the fruit crops. In Warwickshire, which is not an Apricot district, there are, we learn, more than for many years. Plums are thin. Cherries, especially Morellos, are plentiful. Peaches and Nectarines have not bloomed nor set well out-of-doors. Apples are good in many places, elsewhere disappointing. A correspondent in the Midland Counties has been at great pains in establishing a small orchard of Apples and Plums. The bloom on the Apples was exceedingly plentiful and strong, and equally so on transplanted and non-transplanted trees; but it is all gone! This is a lesson which teaches us to be careful, and in nothing more than in anticipations of fruit crops. As regards these, there are two old English proverbs which ought ever to be borne in mind. The one is, "Not to count our chickens before they are hatched," the other, "Not to halloo before we are out of the wood." Gardeners may grow fruit trees through all stages, from the graft to the blossom, but then, at the very moment when success seemed possible, and, lest one should feel too proud, Nature steps in and the old Adam of Apple proclivities leaves us nothing much for our pains but barren trees. Almost as soon as the new year sets in some writers, who ought to know better, are busily at work peering into the very womb, and making calculations of the probable amount of Nature's fruitfulness for the ensuing year. It is so like a child at breakfast-time asking its mother what kind of a pudding they are to have that day at dinner-time. Pears are not much better on standards or pyramids, but on walls, and especially where they have the advantage of a flued wall, they are very satisfactory.

Small fruits, such as red and black Currants, will scarcely be quite an average. Gooseberries are good, but thin on the bushes, but it is a comfort to be able to say they are generally, but not entirely, free from caterpillar this year. Strawberries are plentiful but will require plenty of water to carry them on, and nets to protect them from birds, which latter, owing to the last few mild winters, have increased in extraordinary numbers. Hazel nuts and Walnuts seem promising.

In an early number we shall be in a position to lay before our readers an estimate of the condition of the fruit crops throughout the length and breadth of the land.

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—— THE GLASSHOUSES AT LAEKEN.—Some time since we published large views of the exterior and interior of the giant conservatory at Laeken, erected for His Majesty the King of the BELGIANS. In our present issue we give—thanks to the courtesy of the *Compagnie Continentale*—a view of the new houses erected under their auspices (fig. 5). They are devoted especially to the culture of Orchids, Azaleas, and other decorative plants; for the great conservatory, like others of its class, is ill-suited to grow plants, however well adapted to display them when grown.

—— THE BENTHAM PORTRAIT.—It was felt by many that some memorial to the late Mr. BENTHAM should be placed in the Royal Gardens, Kew, to commemorate the services of the eminent botanist in the locality where so much of his life-long work was accomplished, especially in connection with the *Genera Plantarum*. With this view some friends of Mr. BENTHAM subscribed funds for a copy of the portrait in the Linnean Society's rooms. This has now been executed by Miss MERRICK, and was exhibited on Wednesday evening at the *conversazione* of the Linnean Society prior to its removal to Kew.

—— GREAT HORTICULTURAL EXHIBITION, BERLIN.—A general exhibition of horticultural productions is announced to take place in Berlin during the month of September next, lasting from the 5th to the 15th, inclusive, it being held in the formerly Hygienic Exhibition building near the Lehrter Railway Station. A prize list is already issued, in which are to be found a great number of medals—gold, silver, gilt and bronze—and objects of art. Mr. SPÄTH, Kopnickerstr. 154, Berlin, has the management of the Exhibition.

—— ANTWERP BOTANICAL AND HORTICULTURAL CONGRESS.—We have before us the first part of the preliminary reports on various subjects of the programme, previously published. This circulation beforehand of the papers to be read and discussed is an excellent plan, which was adopted in London in 1866, but has been improved upon by our Antwerp friends. We shall in a future number call attention to the papers just issued, and may again remind our readers that the Exhibition and Congress will be held from August 1 to August 10

—— HALESIA HISPIDA.—Mr. DARTNALL sends us from the Tunbridge Wells Nursery sprays of this beautiful plant. The leaves are like those of a Phila-

delphus. The flowers, which are like those of a Deutzia, are produced freely on the young wood in long pyramidal racemes. We do not know if any one has tried it as a forced plant in spring, but it seems as if it would be a suitable plant for the purpose. A large figure was given in our columns, 1884, August 9, p. 177.

—— LISSOCHILUS SAUNDERSONII.—About thirty species of this genus are known to science, inhabiting tropical and South Africa. According to the translation of the generic name the above species would be a Eulophia, for a well-developed crest of elevated plates or ridges are present on the labellum. The classification, or rather the delimitation, of the two genera, according to the *Genera Plantarum*, rests on the dissimilarity of the sepals and petals both as to size and colour. In the present instance the sepals are comparatively small and greenish, while the petals are large and pure white. The large labellum has the lower part and lateral lobes greenish, striped with purple, while the terminal lobe is clear, pale purple. A magnificent specimen is now flowering for the first time in the Palm-house at Kew, where it was sent about six years ago from Natal. The flowering stem, when fully developed, will be over 6 feet high, and the great lanceolate plaited leaves are 3 to 4 feet long. The species of Lissochilus are terrestrial in habit, and the plant under notice is planted out in one of the beds in a mixture of peat and loam.

—— EXTRAORDINARY LOW TEMPERATURE AT THE END OF JUNE.—Mr. WOODS, of Osberton Gardens, Worksop, writes that "on the night of the 25th ult. the thermometer at 10 P.M. stood at 39°, on the morning of the 26th at 4 A.M. it fell to 32°. To show the effect of the frost I send you the tops of a root of Potatos taken from a piece of ground at the end of the park here where there is about 2 acres planted, the tops having all been caught in the same way."—The temperature has been unusually low in Cardiganshire since June 10, both day and night. On the 10th the thermometer fell to 34°, on the 12th, 37°; 21st, 42°; 26th, 34½°; 27th, 34°; 28th, 40°; with strong, cold north winds which continue till the 30th. On the 26th, in the meadows at 5 A.M., there was ice on the grass. Outdoor Strawberries are not ripe yet, and everything is correspondingly late. What Apples and Pears there are will be small and scrubby unless warmer weather succeeds this wintry description.

—— NANODES MEDUSÆ.—On a superficial examination this beautiful and extremely curious Orchid bears little or no resemblance to the general run of the vast genus Epidendrum, with which, however, it is so closely connected as to be included there by the more recent authorities. The leading distinctive features, however, lie in the aggregated condition of the succulent foliage clothing the pendent stems, the germinate sessile flowers closely hugging the apex of the stem, and thirdly in the pollinia being adnate to a scale breaking away from the rostellum. From a garden standpoint the value of this Orchid is determined by the large and showy labellum. It is almost orbicular in outline, deeply concave, and torn at the margin into a series of long entire or forked fringes. The colour is a deep amethyst-purple, but the shade is greatly determined by the direction in which the light falls on it. The sepals and petals are pale greenish, suffused or margined with purple, and dwindle into insignificance in presence of the labellum. The species is figured in the *Botanical Magazine*, t. 5723, and a flowering specimen may be seen in the Orchid-house at Kew.

—— CHERRIES IN KENT. — Some parts of Kent are specially renowned for Cherries. Till recently the crop promised to be a good one, but lately many have fallen. "I am sorry for the buyer," said one farmer to another, in our hearing, lately, "for he is 'a good sort,' and offered me a good price for the hanging crop." "I am glad," said the other, "for the buyer in my case is a skinflint, and beat me down, and now the grass is covered with Cherries." It is the practice in Kent to grow Cherries over grass, and in some cases to sell the crop on the trees!

—— BISEXUAL CUCUMBERS. — The interest attaching to flowers of this description is chiefly morphological. For practical purposes there is no advantage in a Cucumber flower having both stamens and pistils, nor from a physiological point either, but to those who are curious to know about the construction of the flower, and how the singular conformation of these flowers has come about, from what stock it probably descended, and what are the possibilities of its future development, they are full of interest, as affording just the sort of clue that a detective policeman likes to get hold of when he gets a good case. We owe the opportunity of examining such a flower to Mr. THOMAS BUNYARD, of Ashford, who kindly sends us a flower in which the sepals are inordinately developed and leafy, the petals distinct, also leafy at the base, and surrounding five perigynous and sinuous anthers. The style is thick and columnar, dividing above into three wedge-shaped fleshy lobulate stigmas. The ovary presented nothing abnormal. Botanists familiar with the volumes of controversy as to the nature of the stamens in Cucurbits will note the significance of this flower.

—— DOWNINGIA PULCHELLA. — Probably few will recognise under this name the Clintonias of gardens, but by virtue of this priority the above is the name this genus of pretty Lobeliaceous plants must bear. The species of Clintonia, on the other hand, are members of the Lily family. Considering the time the above-named plant has been in cultivation, it is altogether surprising how comparatively seldom it is seen in gardens. Compared with Lobelia erinus and its garden varieties this plant is, to say the least, a neglected one. Furthermore the flowers are twice

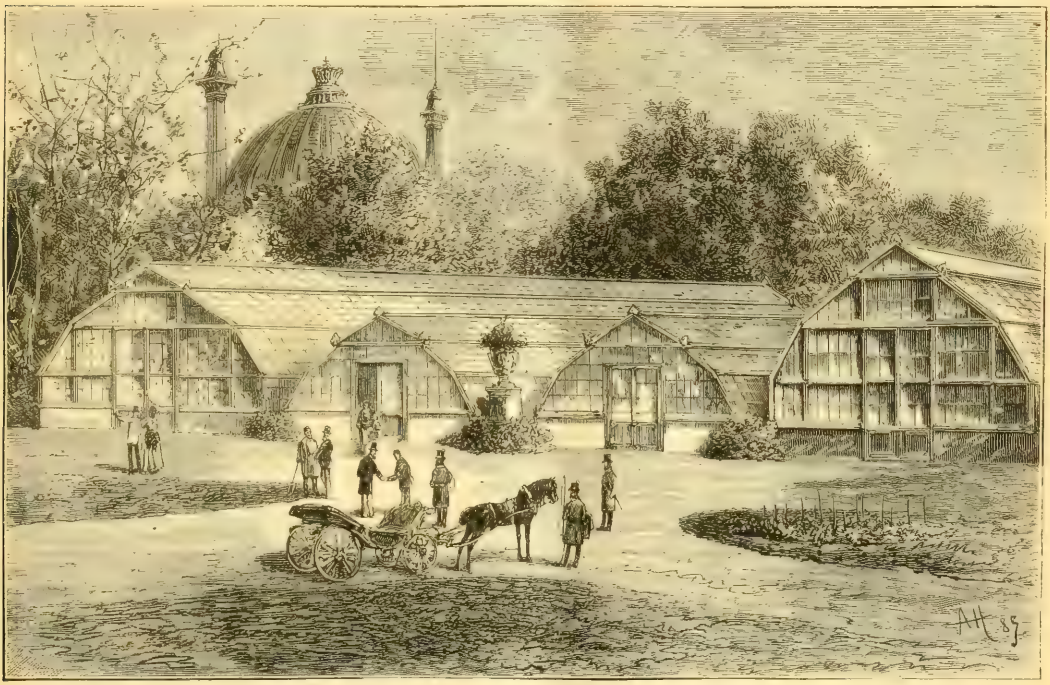


FIG. 5.—PLANT-HOUSES IN THE ROYAL GARDENS AT LAEKEN. (SEE P. 16.)

the size of the popular garden Lobelia, of an intense blue colour, with a large white eye beautifully set off with two large yellow blotches and three small almost black ones alternating with and at the base of the latter. In a sunny position it forms a sheet of the most dazzling blue, while the other three colours individualise it in a most characteristic manner. The habit is more compact and superior in every way to the above-mentioned Lobelia, except in the more select garden varieties. It requires the same treatment as its ally, and would certainly reward anyone's trouble to give it a trial. Its congener, D. elegans, though inferior, is a select and pretty annual. There is a figure of D. pulchella in the *Botanical Register*, 1909, and it has been flowering for a long time in the herbaceous collection at Kew.

—— THE ANTWERP ROSE SHOW.—This opened on Sunday last, and was visited by the King and Queen of the BELGIANS. We have not yet heard of any English exhibitors, but among the jurors we note the name of Mr. SHIRLEY HIBBERD. MM. SOUPERT and NOTTING, of Luxembourg, obtained the Queen's Prize.

—— FUTURE SHOWS.—The month will open with the great show of Roses at the Crystal Palace, Sydenham, where a special exhibition of the flower by Messrs. W. PAUL & SONS will form a principal attraction. The great Rose Show at South Kensington follows on the 9th. Louth will hold a Rose and flower show on July 7 and 8, at which some good things are likely to be seen. The Lee, Blackheath, and Lewisham Horticultural Society will hold its summer show at the "Cedars," Lee, on July 8 and 9. The Royal Botanical and Horticultural Society of Manchester will hold a Rose show under the auspices of the National Rose Society on July 11. Bedford and Bedfordshire Horticultural Society's Show is fixed for July 15; Roses at this gathering come in for a good share of recognition. The show at Saffron Walden is to be on the same day as the last named, followed by that of the Winchester Horticultural Society on July 16. Newcastle-on-Tyne Summer Flower Show takes place on July 22, lasting three days. The Veitch Memorial Medal will be there given for six plants dissimilar in bloom, amateurs or professional gardeners competing. The great show of the Nottinghamshire Horticultural Society will be held at Nottingham on July 23, 24, and 25; that of Calne on July 28.

—— THE ROSE SHOW AND FIRE BRIGADE ANNUAL INSPECTION AND COMPETITION.—On the 11th inst. the above will take place in the private grounds of Headington Hill Hall, by kind permission of the High Sheriff and Mrs. MORRELL, who have also arranged with the Rose Society's committee to throw the grounds and exhibitions open free to the public, at 3 o'clock. Members and friends holding tickets of admission will be admitted at the lower lodge, from 1 to 3 o'clock (an hour earlier than usual). The Oxon Bee-keepers' Association bee tent will be erected, where lectures and illustrations will be given by an expert; and it is hoped that cottagers will avail themselves of the opportunity so generously placed within their reach. In order to compensate the Society Mr. and Mrs. MORRELL will present to it a cheque for the largest amount ever received by the Society for the sale of tickets at their annual shows. By this generous offer the citizens will have the opportunity of seeing the beautiful private grounds, for which Headington Hill Hall is justly celebrated, while at the same time the Society will suffer no loss.

—— CANADIAN BAST MATS.—Bast matting, now so much used, is mostly made from the inner bark of the Lime tree (Tilia europæa). The bark of the American Linden has been used for this purpose, and the matting made from it is said to be quite as good as the Russian bast matting. The matting is obtained from young trees, which are stripped whenever they peel freely; it is thrown into water, and after a few days' steeping the layers of the bark readily separate when they are pulled apart and hung up to dry. As an incentive to the promotion of bast mat industry in Canada, the Americans point to the fact that 14,000,000 bast mats are annually imported into England alone, chiefly from Russia.

—— GARDENING APPOINTMENTS.—Mr. J. CLARK, Gardener to C. PEEL, Esq., Manor House, Congleton, has been appointed Gardener to Mrs. BIRCHILL, Ribbleton Hall, Preston.—Mr. A. FENTON as Head Gardener at Hopetoun House, Linlithgow, N.B.—Mr. JAMES LEE, from Dalkeith Gardens, as Head Gardener to Captain GRANT, Glen Grant, Morayshire.

# Notices of Books.

## Mason's Burma.

The first edition of this work was published in 1860, and now we have before us a second edition, in two very thick quarto volumes. It is the second volume which specially concerns us, but although it bears date 1883, it is only recently that we have met with it. The present volume contains nearly 800 pages, and is exclusively devoted to the botany of the country. The editor, Mr. Theobald, has added a very large amount of valuable information, but he has hardly been sufficiently careful in all cases to accentuate those portions which are the work of the original author. No direct charge can be laid to the editor in this respect but this, that he might have remembered that many readers are lazy and others overburdened with work. The requirements of both demand recognition at the hands of an editor. Again, it is open to question whether some of the additions made unmistakably and a vowedly by the editor might not have been omitted with advantage. They increase the size of the volume, already too bulky, and though often interesting and suggestive, might better have been published separately. The introduction also of long quotations from such easily accessible books as the *Treasury of Botany*, itself a compilation, might surely have been dispensed with to advantage.

The work opens with an account of the Burmese forests, based on that given by the late Sulpiz Kurz, in his *Forest Flora*. Then comes a catalogue of the plants, in which the editor acknowledges the assistance he received from Kurz and the Rev. C. Parish. The lower Cryptogams, even, are not omitted—in fact, they are given twice over—though naturally the lists in this department are more incomplete than in the case of other plants.

The account of the Orchids has been furnished by the Rev. C. Parish, who, in accordance with the plan of the work, introduces his subject by some remarks intended for the general reader, and devised to serve as a pleasant "vehicle," as the doctors say, for the administration of drier details.

Of Burmese Orchids Mr. Parish catalogues over 350, but considering how large an area remains to be explored, he considers that Burma alone is capable in the future of showing a list of 500 species. Mr. Parish's list, with authorities and references, is so useful that we could have wished it had been issued separately, for the benefit of Orchid cultivators, but as it must be incorporated in the *Flora of British India* we must be content to await the completion of that work.

Numerous appendices, indices of vernacular names, botanical terms, of genera and species, of synonyms, as well as a general index of subjects, attest the care and labour bestowed on these volumes by the Editor. A final illustration suffices to show this clearly. Under the index of species all the entries of any particular adjective are referred to thus:—In the index under "alata" we find ten entries, referring to so many species of different genera thus named, besides one "alatus," and so on throughout. Take as an illustration the following note *apropos* of epiphytes and parasites:—

"There grew, when I first went to Moulmain, in 1852, just inside 'Tiger's Gap' (as the entrance to the cantonments on the Nyabustec side was then called) in the centre of the three, cross-way—*triviæ juncta viæ*—a fine Vitex arborea some 40 feet high. There stood in the same place when I left in 1876 a 'Peepul' or 'Ficus' tree of even larger size, the Vitex having entirely disappeared; yet no one removed the one, or planted the other. It was a simple, natural operation, the silent work of some twenty years.

"A ripe Fig seed obtained a lodgment in some crevice of the unhappy Vitex, germinated, and became a small and apparently innocent epiphyte. Being there comfortably entertained, it turned parasite (though not in the strict botanical sense), and took an unhandsome advantage of its position to turn its roots downwards till they touched the earth, and its branches laterally over those of its supporter.

"'In the meek garb of modest worth disguised,
The eye averted, and the smile chastised,
With sly approach it spreads its dangerous charms,
And round its victim wound its wiry arms.' *Darwin.*

"For some years it did no very evident harm, but in course of time, slowly and insidiously, the roots and the branches united into a solid mass, till all that could be seen of the miserable victim was an arm here and there, as it were, imploringly stretched out and struggling towards the light, vainly trying to escape from the treacherous embrace of its tormentor. At last my poor friend the Vitex totally disappeared, enveloped in a winding sheet of inextricable folds, and strangled to death in the embrace of its inexorable foe—a vegetable Laocoon.

"'Round sire and sons the scaly monsters rolled,
Ring above ring, in many a tangled fold,
Close and more close their writhing limbs surround
And fix with foamy teeth the envenomed wound."
*Darwin*, "*Loves of the Plants*," canto iii., 331.

Few who now pass by and see the placid Ficus (for I doubt not it stands there yet) would suppose that such a foul deed had been done by it, and that it still holds the murdered body of its victim hidden within that smiling exterior. Many a giant Ficus in the forests betrays its former life by its perfectly hollow trunk, from which the very bones of a too confiding friend, similarly treated, have, by the process of inevitable decay, fallen out."

## Wild Flowers Worth Notice.

Mrs. Lankester has recently published a new edition of this little popular manual, which is accompanied by coloured plates, the execution of which we cannot commend. Messrs. Allen & Co. are the publishers.

# FARM GARDENING.

THE promotion by noblemen and gentlemen of unquestioned honour of a national company for the purchase of land in divers parts of the kingdom specially for resale or letting on favourable terms to labourers and others wishing to become small landowners or occupiers, is one of the signs of the times. The large farm system, buoyed up as it was only by means of capital and a vast outlay, has practically collapsed under pressure of adverse seasons and low prices for farm produce; rents have fallen enormously, and agriculture, under existing conditions, has become an unfortunate business. Naturally, landowners have experienced the force of this depression as well as farmers, and they have now begun to realise that in throwing several small farms into one vast one, destroying homesteads, and otherwise abridging the demand for labour on the land, that they have been depopulating the rural districts, crowding the labourers into the towns, to linger and to suffer, whilst the once highly cultivated and profitable country is in danger of becoming deserted and a desert. With every desire to credit landowners with some return to common sense and kindly feeling towards their rural dependents, it is none the less too obvious that such a movement as is above indicated, has within it no inconsiderable substratum of selfishness, for now it is seen that the only, or almost only, hope of a revival of prosperity for agriculture and the land lies in the formation of myriads of small farms and freeholds! Landowners may well, for their own sakes, desire to promote a company, the which may prove, if practically worked, a marvellous power of good, and for profit presently. The old couplet respecting the destruction of our bold peasantry has been in danger of realisation, and it is well we have paused ere the rubicon is passed, and the country's pride laid low beyond reinstatement. It may be feared that the promotion of such a company as that to which reference has been made may be regarded as chimerical and incapable of successful realisation. On the other hand we see ample encouragement for such a proposal in the fact that companies have in and around our great towns—London especially—purchased large plots of land, and have either resold such land in small plots for building purposes to persons of small means, or else have built houses and let or sold them to working men, and have found in the transaction much profit. A large amount of sentiment will naturally enter into the business incidental to the purchase and resale or letting in small plots of rural land, because so much that is moral and social enters into the suggestion. Still the basis is that business, if it may be so tautologically put, must still be business, and without that basis, it cannot hope to be profitable. The reinstatement of our bold peasantry is a work that may well call forth the hearty sympathy of all who love their country, and if that sympathy will tend to promote financial success so much the better. It may be asked—What has all this to do with gardening? Well, the answer is simple enough—the very basis of any system of small

holdings in land must be found in garden practice. The creation of a vast number of small holdings, farms, and freeholds, will alone avail nothing. All good resulting will then be contingent upon the manner in which the land is cultivated. Lord Carrington said the other day that by subdividing land into small allotments, which were all practically gardens, the produce of the land per acre was more than quadrupled, as compared with land under ordinary farm culture. Small holdings of a few acres must practically become farm gardens, and it will be found—although some of the noblemen promoting the new land company thought differently—that the chief elements or means of cultivation must be the spade and fork. We have had too much ploughing; we want more digging. The labour and cultivation which in gardens proves so profitable and so productive, must be carried into any system of small holdings if the holders of these small farms are to live. In how many rural districts is there not found a dearth of those garden crops, which are found almost too abundantly in large towns. With absolutely miles of land in cultivation at their very doors, yet residents in rural villages are often unable to purchase if they need them—and they often do—ordinary garden produce, milk, eggs, butter, and similar products, because under our present farming system garden crops find no place for sale, and the other produce is sent off in bulk to the towns. The association of cows, pigs, poultry, and bees, with gardening, is in such direction as projected indispensable, not only for the production of manure, but also for the provision of labour. No man could hope to find full development for his energies on a 3 or even 6-acre plot, if his cultivation is to be performed with ploughs and similar implements. Nay, it is doubtful whether the small holding system can ever prosper on such a basis of cultivation, because the small man cannot hope to extract with the same system of culture better crops from the soil than the large farmer does now; and in such case he cannot hope for a prosperous livelihood. Ploughs are all very well, but they cannot equal the spade and the fork, especially when every year those tools in the hands of industrious men turn over to the depth of 2 feet a portion of the small holding. There is not much present prospect of beating our swords into ploughshares, but we may with good reason turn ploughshares into spades and forks, and in their use find employment for those myriads of labourers who just now seem so badly in want of it. After all land is not meant to be the delight of the few, but the means of living to the many, and in no way is it possible to create upon it more labour, or extract from it more wealth and happiness, than through the vocation of gardening. We have been sending myriads of our best labourers across the sea to remote lands, where they have found land in abundance, have raised corn cheaply, and revenge themselves on the farmers and landowners at home, who found them no work, by sending their produce here almost to the ruin of home agriculture. We are awaking from our dream of prosperity, and now realising that we should have done wiser had we found land and houses here for those whom we have made aliens.

## The Herbaceous Border.

### VERBASCUM OLYMPICUM.

FLOWERING in my nursery at Ashford (Kent) I have some six plants of this grand biennial, and knowing it to be new and rare I have ventured to send you a few particulars for publication. The flower-spike rises from 5 to 6 feet high, from a rosette of woolly, acuminately lanceolate leaves, each of these being from 24 to 30 inches long. At about 2 feet from the ground the spike throws out from thirty-six to forty candelabra-like branches, with, on an average, forty to fifty flowers on each. These flowers are of a bright and rich golden-yellow, from 1 to 1½ inch in diameter, and, of an evening, agreeably fragrant. Round each flower are clusters of buds, which continue to expand in succession, so that the plants have been flowering for a fortnight, and still maintain their original beauty. Bees seem very partial to the flower, and I think every one must acknowledge that, associated with the blue Delphiniums, or any of the varieties of Digitalis, or planted in the shrubbery, this biennial is unrivalled. *Thomas Bunyard.*

## FRUIT NOTES.

PEAR CLAPP'S FAVOURITE.—We are trying this variety in pots this season for the first time, and so far as the short experience enables us to form an opinion of its merits for this purpose, we are justified in thinking highly of it. Growing in a house with Pitmaston Duchess, Souvenir du Congrès, Beurré de l'Assomption, and other kinds known for their good quality as well as suitability for pot-culture, it has set its fruit as well, and is as satisfactory in growth, as either. I think it was Mr. Bunyard who exhibited this, to me, new Pear in good form at South Kensington last autumn, and if he, or some other cultivator who has grown it, would give its date of ripening compared with Jargonelle or Bon Chrétien, and also state the length of time it keeps in good condition after it is gathered, I should deem it a favour, and the information might be of service to other readers of the *Gardeners' Chronicle*. I observe it is catalogued as an early sort. The drawback to the majority of early Pears is the short time they keep after gaining maturity. I hope this may be an exception. *Thomas Coomber, Hendre Gardens.*

### FRUIT GROWING.

One of the best crops of Peaches and Nectarines I have met with this season is at Sir Henry Davies', Creedy Park, Crediton. The orchard-house there is about 150 feet in length, and divided into three compartments, for early, succession, and late fruits. This range is just 6 feet wide, a dwarf wall in front, and is a lean-to building, the back wall being about 12 feet high. There are no trees grown in the front, all that is aimed after is the developing of the growths on the back wall, and these are carefully chosen and splendidly trained. In the early house there are three dwarf-trained trees, which completely cover the wall from the bottom. One is the Royal George Peach, carrying about 200 fruits; the middle tree has just 150, and is the Lord Napier Nectarine; the other has rather more than 230, and is also a Nectarine, named Oldenburg, an old and excellent kind. The fruits are large, and beautifully coloured next the sun, and are now ripening. The head gardener, Mr. Seward, is a clever cultivator, and quite a master in the orchard-house. *W. N., June 23.*

### FRUIT CROPS IN WALES.

Our crops of Pears and Apples here are a failure, more especially the latter, compared to their average production. This is the more disappointing because all the conditions seemed favourable to a splendid crop, and the blossom was most promising. It becomes, therefore, an interesting question what the cause or causes of the failure may be. It cannot be due to imperfect ripening of the wood last summer, because we had the hottest and driest August known for very many years, probably since 1868. Neither was it caused by spring frosts, because in the first place the lowest temperature registered after April 18 was 35° (on a verified thermometer in a Stevenson case), and in the second place because the only Pear trees which have borne even a tolerable crop are in the part of the garden most exposed to frost and east wind. These and nearly all the other Pear trees were in full flower on May 7, as noted at the time; we must, therefore, look elsewhere for the causes of failure, and it seems to me to be due to one of two causes, viz., the excessive drought in the spring of 1884, lasting till June 28, or the somewhat heavy rain (4.43 inches) of July. Were the Pears alone a failure I should incline to ascribe it to the latter cause, as they make their growth early, and do best the year following a hot dry July, but this would not account for the failure of the Apples, which do best after a hot August. I must, therefore, conclude that it has been caused by the drought so weakening the trees that they were unable to set their fruit this spring. And this is borne out by the position of the Pear trees mentioned above as having a tolerable crop. My garden is on a sharp slope facing south-east, and the greater part of the Pear trees are simply planted on the slope, which is so steep that heavy rain has little chance of soaking in, especially as the soil, though dry and stony, bakes hard on the surface. But in 1882 I terraced a part of the garden, and the trees mentioned above were transplanted there. The ground in which they were planted, being level, would retain any rain falling on it, so that if drought were the cause of failure these trees would have a considerable advantage over those standing on the slope. This, I think, goes a long way towards settling the question. It should be stated that the drought here was the worst I ever knew so early in the year. By June 15 (1884) the lawn in my garden and the drier pastures were as brown as a turnpike road. The total rainfall from April 1 to June 28 was only 3.06 inches, and from June 1 to 28 only 0.37 inch with very hot weather. We have had no plague of insects here to account for the damage. The larva of the Currant moth (Abraxas grossulariata) is very common on the hedges, but, curiously enough, I have not seen one in my garden, and the crop of Gooseberries is, as usual, very good. There is more than an average crop of Apricots, and a fair crop of Peaches, but Plums are almost entirely a failure on walls, and quite so on pyramids. It is clear from the above that the causes affecting our fruit crops are even more complicated than is generally supposed, and the chances against the cultivator heavier. I omitted to say that Pear trees on espaliers are quite as bad as pyramids, and those on walls little better. *Alfred O. Walker, Nant-y-Glyn.*

### PEAR BEURRÉ WAMBERCHIES.

A late Pear, not in season till May, or even June. The tree is very fertile, but flowers early, and is thereby exposed to the chances of an inclement spring. The fruit varies in shape—that figured in a recent number of the *Bulletin d'Arboriculture* is of medium size, roundish, with a short stalk, moderately depressed eye, a yellowish-brown skin freckled with russety brown spots. The flesh, though firm, is melting, without grit and sometimes without seed, full of sugary juice slightly perfumed, and with a peculiar flavour. This Pear was raised by Mr. J. Wamberghies, of Ressaix, near Binche, and is described as suitable for espalier or standard.

### LORD NAPIER NECTARINE.

This fine Nectarine is now to be seen to the best advantage in one of the houses at Gunnersbury House. One tree nearly covers the whole of the interior of a house; the dimensions of the tree are 19 feet by 10 feet, it had originally about 380 fruits, reduced to 330 or thereabouts by thinning. The tree is in the very perfection of health, and the fruits are rapidly ripening, and becoming very fine in colour. One needs to look on the body of fruit through the glass to estimate the value of the crop. By placing a wooden label under so many of the fruits as have a tendency to hang down under the leaves, they are elevated, and have the full benefit of the light. *R. Dean.*

### NEGRO LARGO FIG.

This fine Fig can now be seen in the best condition at Shipley Hall, near Derby, where Mr. Elphinstone has it planted out in the front of a narrow lean-to Fig-house. But it is subjected to a kind of rough-and-ready treatment which drives it into a free fruiting state, and producing fine fruit too. Twice a year the spade is driven down deeply into the soil, a foot to 18 inches from the plant all round, with the result, that instead of the plant producing growths, it yields abundant fruits. One thing appears to be quite certain, that if this Fig is planted out its roots must be restrained. This is why it is Mr. Roberts grows it entirely in pots at Gunnersbury Park, and takes admirable crops of fruit from his plants.

## THE TRADE IN SAFFLOWER.

WITH the exception of Madder there is no vegetable dye that has been so largely interfered with as Safflower, by the introduction of the artificial dyes prepared by the chemist. It is chiefly a product of the East, and there it still retains some value among the natives. From 1851 to 1855 the official value of the Safflower imported into this country ranged from £71,000 to £134,000. Sixteen years ago we received over 32,000 cwt. Last year our imports fell below 1400 cwt., valued at but £3500. In contrast to this our imports of aniline dyes from abroad (exclusive of those made at home) exceeded in value £710,000. Carthamus tinctorius [a Composite plant] is grown extensively all over India, mostly as a subordinate crop. That grown in Dacca is the best in India, and ranks next to that of China. It is an annual, growing to 1 to 2 feet in height.

The plants begin to flower in February, when

about 2½ feet high; from then till May the flower are picked off each day as they appear, leaving the flower-heads on the stalk. All that is detached is the fragile-looking corolla, which issues from the summit of the prickly Teazle-like flower-head. When these are picked off, their subsequent treatment depends on whether they are to be made up into the Safflower of commerce or whether they are merely to be prepared for dyeing purposes in the country. If the former is intended the florets are damped with water and pressed into lumps. A rough strainer is made by stretching a mat on a wooden frame; on this the lumps of florets are laid, and water is slowly poured over them, while a man treads them out with his feet, supporting himself on two sticks, used as crutches. In this way the yellow colouring is eliminated from the flowers, the presence of which would detract from the beauty of the crimson tint, for which they are chiefly prized. When the water (which at first is coloured yellow) comes clear through the strainer the process is complete. The flowers are then made up by hand into round flat cakes, the water squeezed off, and they are dried in the sun. In this form they are known as the Safflower of commerce.

Safflower intended for local use in India is not washed in the method above described at the time they are picked. The flowers are simply dried, in which state they are sold by cultivators.

There are thus two pigment principles in Safflower—Safflower yellow, which is extracted by pounding and washing, and Safflower red (or carthamin), which is the dye of commerce. The carthamin is a resinoid substance, giving to cloth a beautiful crimson colour, which, however, oxidises yellow in light. It is one of the chief ingredients in rouge. It is soluble in an alkali, which is used to extract it from the cakes of florets; an acid precipitates it. The colours, however, obtained from this vegetable dye are not very fast.

The following shows the exports of Safflower from India in the years ending March 31:—

| | Cwt. | Value. |
|---|---|---|
| 1877 .. .. | 7662 | £30 467 |
| 1878 .. .. | 3698 | 14 880 |
| 1879 .. | 4677 | 18,671 |
| 1880 .. .. | 2411 | 18,145 |
| 1881 .. .. | 6675 | 35,115 |
| 1882 .. .. | 2293 | 9 475 |
| 1883 .. . | 3063 | 9,203 |
| 1884 .. .. | 2333 | 6,449 |

The shipments are principally to the United Kingdom, the rest goes to China and the Straits Settlements. There can be no doubt that the competition of chemical dyes has ousted this beautiful and once favourite colour from the home markets, and it is very unlikely that it will ever regain the position it once held. *P. L. S.*

## BURMESE LACQUER.

The lacquer manufactures of India, Burma, and Japan, are, as is well known, important industries. By far the best known in Europe is the lacquer-ware of the Japanese, the production of which has been so well described of late in a report by the British Consul at Hakodate. Specimens of Indian lacquer-ware are also often seen in this country, but are not so common as the last, while the Burmese work is much more rarely seen than either. These three kinds of manufactures are very distinct in their character, in their mode of preparation, and in the material used to give the well known polished surface. Thus, while the Japanese lacquer is obtained from the juice drawn from the trunks of Rhus vernicifera, the Indian lacquer is prepared from lac, which is produced by the puncture of an insect on species of Ficus; and the Burmese lacquer is the juice obtained from Melanorrhœa usitata, Wall. Though this lacquer, or varnish, is largely used in Burma, but comparatively little has been written on its preparation and uses; the following notes from a recently issued report on the subject will therefore probably be interesting:—

The Varnish-tree, as it is called, is a large deciduous tree of Munnipur, Burma, and Tenasserim. The lacquer-ware used in Burma is described as of two kinds—that in which the article is made of basket-work lacquered over, and that in which the article is made of wood. All the lacquer-ware of the basketwork-form comes from Upper Burma, where it constitutes a very important trade. In British Burma the trade is confined to the production of wooden articles lacquered over, such as the large round platter with a raised edge in which the family dinner is served, round and square boxes, and bowls. And the Burmese artists produce richly gilt boxes used in the monasteries for holding Palm-leaf manuscripts, the bowls with a pagoda-shaped cover employed for carrying food to monasteries, and pagodas and shrines on which to place images of Gotuma. The coffers referred to appear as if covered with pictures drawn in black on a gold ground, and the effect is so good that a small demand for tables, panels, bowls, &c., of the same work has sprung up. If a black-coloured lacquer is required, the sap of the tree is used alone, but a deep red lacquer is much used, and is prepared by mixing the sap of the Lacquer-tree with vermillion in the proportion of 12½ parts to 10.

The wooden bowls, platters, &c., are scraped down with fine steel scrapers, to make the surface as smooth as possible before laying on the lacquer. All cracks, holes, and chipped edges are filled and built up, as it were, with a putty made of the lacquer itself mixed with Teakwood sawdust. The articles are then put away until the putty is dry and quite hard. The raw lacquer is next rubbed all over the article with the bare hand, so that the least particle of sand or stone may be detected, and the article put in a cool and airy place to dry—not, however, in the sun, which would cause it to crack or blister. The articles are sufficiently dry in three or four days to receive a thick even coating of "thayo," made of "thitsi" (the sap), rice-water, and Paddy-husk ashes. The article is again put away to dry and harden, when it is smoothed down with water and Paddy-husk ashes and stone polishers of graduated fineness from sandstone to a smooth pebble. This process removes all gloss or polish, and the last coating of either black or red is given to the article as a polish. The grounding is invariably black, and only the last coating red, if red-coloured ware is required. The black enamel used is made of two parts lead, one part silver, and one part copper, melted in a fierce fire, and sulphur added at discretion.

## HONEY GLANDS ON THE SEPALS OF CATTLEYA FLOWERS.

Some little time ago I was surprised to see little drops of a pure saccharine or honeyed secretion on the

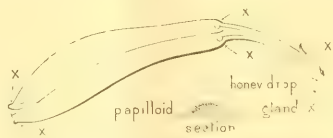



Fig. 6.—Honey glands on the sepals of Cattleya flowers.

buds of Cattleya Mendelii, and I now wish to record the simple fact, leaving to others with more leisure the pleasant task of accounting for the sweet secretion and its possible uses in the plant's economy. The accompanying diagram (fig. 6) shows the position of these hairy or papillose honey-secreting glands on a full-grown flower-bud, but they exist also on the bracts on the peduncles or flower-stalks. Of course the above simple fact may not be new, but I never observed these honey glands until this year. *F. W. Burbidge.*

## HYBRID GEUMS.

Some plants appear to produce pollen so strong as to be liable to form a cross with any of the same genus flowering in a garden together with them. This seems to be the case with Aquilegia canadensis amongst Columbines, and with Geum urbanum amongst its kindred species. I say "kindred" because the plant which G. urbanum most frequently selects to cross with, and to cause to degenerate in my garden, is classed in Nyman's *Conspectus*, not as Geum, but as Sieversia. It is, however, more commonly known as Geum montanum. Plants of this have several times been sent to me from the Alps. They at first flower with large flowers on short one-flowered stalks, rising very little from the ground, but after a year or two the same plants produce divided stalks fully a foot high, with three or four flowers on each stalk.

I have never attempted to make any artificial cross with them, but have observed that both the seedlings which come up round them, and those which I have raised by saving the seed almost always depart more or less from the type of the seed-parent, and degenerate by assuming a tall straggling habit, and a much smaller flower, apparently approaching the form of Geum urbanum. A second generation of seedlings, self-sown, produced plants which I could not distinguish either by leaf or flower or stature from typical Geum urbanum. G. urbanum is not a very prevalent weed here; until introduced in this way I never saw a plant of it in my garden, though it is found in the neighbouring lanes and hedges; but I suppose it is more probable that the pollen of it is brought by insects, and produces this change, than that G. montanum passes of itself in two generations from seed into G. urbanum. The intermdiate forms of which I have spoken are so strong and increase so readily that I can obtain any number of plants by division, and will willingly send a plant of them to any botanist to grow and test by seedlings.

The genus Geum is not in great request for garden decoration. Of three native species recorded in catalogues it is generally acknowledged that one, G. intermedium, is a hybrid between the other two, G. urbanum and G. rivale. This is said to be a fertile hybrid, but I have a very fine form of it in my garden, on which I have never seen any good seed, though I have never made a careful examination: but had the seed been good the plant could hardly have grown where it is for ten years without seedlings coming up round it, which I am certain they have never done. I have also had in my garden for several years, and have distributed to many other gardens, two hybrid Geums—one raised by Mr. R. Parker, of Tooting, and sold as G. miniatum, the other raised by Mr. Clibran, of Altrincham, and sold as G. hybridum. The flowers are large, of an orange-red colour, clearer and brighter in the Altrincham variety, but in all other respects the two are alike. They continue to flower from April to July, and become at last fully 3 feet high, and very straggling. I believe these to be seedlings from G. chilense, fertilised with the pollen of G. urbanum, either artificially or accidentally. The foreman of Mr. Smith's nursery at Worcester showed me five years ago several such hybrids, and told me their true parentage, which was as mentioned above. I have looked for good seed on these hybrids in my own garden, but have never found any. Both the Altrincham and the Tooting plant are of remarkably vigorous constitution. Observing this I have, by way of experiment, cut up a plant consisting apparently of a single crown, into eight or ten pieces, and in two or three months each piece has grown into a strong flowering plant. Of five hybrid Geums of unrecorded parentage, now in flower in my garden, each developes a seed-head, after flowering, quite distinct from the others, and from those of their supposed parents. The soft upright plume of the seed of genuine G. montanum is absent from them all, though two are certainly from that plant as the seed parent. That the pollen parent is G. urbanum has not been ascertained by any careful experiment of mine, but I have interred it from the evident tendency of the seedlings, as well as from the statement of Mr. Smith's foreman. I repeat, that I am willing to send plants or seed-heads of all my varieties to any one willing to take a botanical interest in them, *C. Wolley Dod, Edge Hall, Malpas.*

# FORESTRY.

### WORK FOR JULY.

Look frequently over young plantations, to see that all is going on satisfactorily—that the plants are not being choked with Furze, Brambles, Ferns, or rough-growing grasses, all of which ought to be cut down before they are likely to interfere with the general health of the plants. Of course this advice refers directly to plantations that have been formed within the past two seasons. Wind-swaying should also be paid attention to immediately it is noticed, few things being more injurious to newly-planted trees or shrubs than allowing them to rock to and fro with the action of the wind. Ornamental trees of large size that were planted out during the past season will require particular attention in this way, to see that all the ties, stakes, or other supports are in good order, and not cutting or chafing the bark.

### NURSERY.

In the nursery great attention should be given to the keeping down of weeds, which, with the present mild, damp weather, are unusually plentiful and vigorous in growth. Hand-weeding of seed-beds

is best performed in damp, dripping weather, failing which a good watering through a fine rose will to a great extent prevent injury to the remaining plants. Keep a sharp look-out for beetles and caterpillars preying on the young shoots and leaves of coniferous and other trees, and take all available means to stop their ravages, as the injury inflicted even in a few days is by no means easily overcome. This battle with insect pests should be extended to newly-formed plantations, as well as to the nursery borders. Landed proprietors are fast finding out that, in proportion as they keep their plantations free from decaying brushwood and timber, so in proportion are they freed from insect pests and the many evils attending their presence in a wood. Budding, layering, and planting cuttings may still be engaged in, indeed for layering we consider the present one of the best seasons in the year. Prune all kinds of nursery hedges—Yew, Box, Laurustinus, Privet, Barberry, or Cypress—and keep the ground for a couple of feet on each side free from weeds and in a partially loose condition for a few inches in depth. The rot-heap will now require attention, more especially where the Holly, Hawthorn, and Mountain Ash have been stored. Turn heaps of rotting weeds and decaying vegetable matter, and by adding a small quantity of lime, the vitality of seeds, which even fermentation has but little effect upon, will be destroyed.

### Thinning and Pruning.

The thinning of young plantations, more especially where this is for the first time, may now begin with safety, and be continued for at least two months. In doing so keep the outer line or lines of trees rather thick, so as to prevent too sudden a change of temperature throughout the wood. Pruning forest trees generally should now be engaged in, as at perhaps no other season can this operation be performed with better success. Ornamental trees may be pinched back or otherwise pruned into shape.

Branches that are encroaching on the sides of drives or walks should also receive attention, and either be cut wholly off or terminally shortened. Heavy timber growing contiguous to drives or walks, and that it is intended to thin out during the coming season, may now be marked, as the change in the landscape occasioned by such removals is now more clearly seen than when the trees are leafless in winter. Prune off dead branches, or such as have become twisted or broken by the wind, and paint the scars over with tar or other composition specially prepared for the purpose.

### Fencing.

Continue to erect new and repair existing fences of wire, wood, or stones. At no period of the year is more constant care required to prevent the inroads of cattle and sheep to plantations than the present. Ground intended for planting during the coming season should, when a temporary lull ensues, be fenced out, as, in most cases at least, this work is more readily performed during the summer months than in autumn, when required. The cartage of material is also less at present, more especially in hilly high-lying grounds. Tar fences during warm weather, but previous to this have all herbage cut closely over along the line of fence. *A. D. Webster, Penrhyn, Bangor.*

## DISEASE OF ADOXA: PUCCINIA SAXIFRAGARUM, Schl.

No botanist who knows anything of the diseases of plants can look on a large bed of Adoxa moschatellina without thinking of the disease or diseases to which the plant is liable. Few observers would expect to see parasitic fungi growing in luxuriance in the winter or very early spring, and during a hard frost. On March 15 last I saw an immense spread of Adoxa on Dunstable Downs, and my thoughts immediately drifted to a fungus named Æcidium albescens, Grev., which sometimes grows upon Adoxa in April. Nearly four months have now passed, but no trace of the Æcidium of spring has been seen.

Wishing to examine the underground stems and runners of Adoxa last March I dug up a number of examples and washed them carefully in water. When the subterranean parts were perfectly clean I noticed that many of the underground stems (and those growths only) were infested with a Puccinia—a parasite which is generally considered not to be due till the summer or even autumn. In no single instance was there a Puccinia pustule above-ground.

In fig. 7, I have engraved a flowering stem and radical leaf of a very young example of Adoxa as gathered in March last. At A B the underground stems are swollen with disease and marked with Puccinia spots, C D is the ground line; similar spots were on some of the runners and bud-scales. At K a fragment of one of the swollen disease patches is enlarged to ten diameters, and at F G H the Puccinia spores are illustrated enlarged 400 diameters. The spore, F, is of one cell, in the style of Uredo, &c.; G and three others are two-celled, like Puccinia; and H is three-celled, like Triphragmium. Out of all the spores examined no one resembled another, some were long and narrow, others broad and flat, some angular, others round. With such materials to work with, an imaginative person might "prove" (to his own satisfaction) anything, and make out even new genera as well as new species.

By April 15 the leaves were invaded with the Puccinia, and on May 9 the floral organs and young berries were infested.

The explanation of the attack being first made on the subterranean parts of Adoxa appears to be this. The plants of last year were no doubt badly affected, and the resting-spores (Puccinia spores) fell to the ground in the summer: they hybernated in the




Fig. 7.—Disease of Adoxa: Puccinia saxifragarum.

ground, close to the Adoxa plants through the winter, and germinated exactly at the time when the Adoxa began to show activity for the new year. The Puccinia spores being in the ground, the subterranean parts of Adoxa were necessarily the first parts affected.

Every species of Puccinia affords some evidence, either for or against the supposition that Corn Mildew, Puccinia graminis, can pass part of its life as an Æcidium on Barberry bushes. The following shows how the case stands with the Puccinia of Adoxa. In Cooke's *Handbook* P. saxifragarum, Schl., is said to grow "on Adoxa, &c.;" this Puccinia Mr. Plowright says exists only in the Puccinia state: it has, he says, no Æcidium. But other authorities say that the Puccinia on Adoxa is different from the Puccinia of Saxifrages, and the latter gentlemen have distinguished it by the name of P. Adoxæ, DC. Now Mr. Plowright, who assents to this difference, says that P. Adoxæ has both Uredo and Æcidiospores. Dr. Winter says that there is no difference, but that both Puccinias are the same. The question is, Does the Puccinia spread from Saxifrages to Adoxa, and has it an Æcidium, or has it not? What has been "proved?" One half of the best authorities say "yes," the other half "no," to both questions. I have carefully examined authentic examples of both so-called species of Puccinia, and I cannot see the slightest difference between one and the other. To me they are perfectly identical, and my notes show that no Æcidium is necessary, as the Puccinia was in perfect condition underground from three to five months before it was due aboveground—long before the Æcidium could possibly grow, and that up till now (July) has not grown at all.

In calling attention to another instance of Puccinia attacking the fruit and seeds, I may say that I have proof that not only does fungus mycelium often hybernate within the membranes of seeds, but resting-spores are sometimes produced within the seed-membranes, and these resting-spores germinate with the germinating seeds. In other words, many diseases of plants, as Corn mildew, Puccinia graminis, are hereditary, *i.e.*, the diseases of the parent plants are transmitted direct to the seedlings by infected seeds. *W. G. Smith.*

# The Apiary.

## OBSERVATIONS ON BEES.

Once upon a time the people of England who kept bees attended to them about twice a year—viz., at swarming time and in the autumn. At swarming time the swarm was taken, put into a skep, and then left alone till the autumn. They were only disturbed between these times if a death occurred in the family, when the chief of the house went to each hive, and after tapping it, announced the demise of the person in question. This was considered necessary to the prosperity of the bees. In the autumn those stocks which were supposed not to have been able to gather enough for winter were "taken up," and then placed over burning sulphur. The effect on the bees and the honey is so well known that it is now unnecessary to go into it.

There has of late years arisen a more excellent way. Wooden hives have taken the place of straw, and the bees have been induced to hang their combs on pieces of wood, and store it in little boxes, &c. These combs can be taken out, and examined at any time, which is very convenient, but which has given rise to many evils. A gentleman residing less than 50 miles from here, examines and overhauls his bees about four times a-day. He never allows one drone cell, and the thought occurs so frequently about the uselessness of the said drones, that he would cut out these cells four times a-day (*i.e.*, if he could find any). He makes—or has made—most elaborate chaff cushions, which are placed at the front and back of the bees just before winter, and quilts, counterpanes, and cushions, are laid on top. Cork dust is put all round the hive, and winter passages are cut for the bees through the combs. The legs of the hive must project at an exact angle to enlarge the base, and lest the cover should happen to blow off in a storm it is secured with ropes and tent pegs. These things, or most of them, are utter "bosh," and as they disgust me so much, you will excuse the short word of four letters just used.

Bees can be kept and wintered in four stout pieces of wood nailed together, with a low cover over, or without a cover at all, or packing, in a way presently to be explained. Another fashion has also arisen lately, which has received much attention from certain hive-makers—of course gain to that honourable craft has nothing to do with it. This fashion consists in having reversible combs, which at certain seasons are reversed, and the bees being turned upside down, and finding their honey, contrary to Nature, at the bottom, quickly remove it into the supers. The principle may be good, but the practice is very expensive.

Now for my plan. Take four pieces of wood, 1 inch or 1½ inch thick, and cut them of such lengths that the inside dimensions shall be 12 by 14½ inches, and 9 inches deep. This box is to have no bottom, but a top of some thickness can be screwed on, and all painted outside two coats. Then fix some foundation comb in the roof of the box radiating from the centre—a mode of arranging which I got from an American.

Put your swarm in this box. If it is a fair summer it will fill the box. Leave it alone for winter. It will require no cork-dust, cushions, quilts, nor dry sugar-feeder—price half a guinea. If it has been properly made and painted it will require no cover, and, therefore, no rope and tent-pegs. The above method of

arranging the combs does away with the ridiculous winter passages, as the bees can enlarge or contract with the greatest ease, and, when necessary, eat, drink, and be merry. In the spring, when my lords show signs of swarming, turn them upside down—if you like that fashion—and place another box on top, with no top or bottom, but same internal dimensions. In this you can hang eight frames or put boxes, and then, of course, a cover would be required. If you do not believe in the inverting system have a round hole in the top of the stock hive, and it can be supered without inverting, only in that case a cover would always be required, but no packing. So much could be said in favour of the time-honoured skep that it is quite certain it will never go out of fashion. Those persons who do not want to examine their hives four times a-day would do well to examine the catalogue of Mr. W. P. Meadows, of Syston, near Leicester. He has two hives, one of which is called The Gem, and the other The Favourite. Both consist of well-made skeps stood on a wooden stand. The Gem is covered with painted zinc, while The Favourite is covered with wood. Crates of sections can be put on each, and when partly filled others can be placed under. This can be done till there are three tiers of sections, one above the other. I have tried many hives, and have seen, I believe, the catalogues of every tradesman, but I do not think I have yet seen anything of the sort to equal these, and can thoroughly recommend them to those who keep bees for honey. I may give a little more of my experience at a future date. *Agnes.*

## BLETCHINGLY, SURREY.

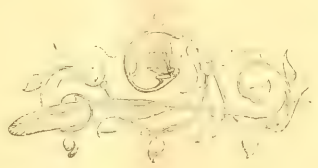
In countries subject to close cultivation there is always a tendency to limit or almost eradicate the primitive or indigenous vegetation. What remains is generally confined to the most determined weeds, or those that inhabit places unamenable to cultivation. Some, although of a weedy character, are amongst the most conspicuous ornaments of the cornfield, and not unfrequently the sign of a lazy husbandman. Next to cultivation the plant collector must come in for his share of opprobrium for the despoliation of the choicer flora. Notwithstanding these evils, isolated spots or localities occur replete with many of the finer forms of our native flora in tolerable plenty or great abundance.

The North Downs, in the neighbourhood of Bletchingly, are in many places a paradise of wild flowers, and together with the corn, hay, or pasture fields that skirt the base of the hills or follow their sinuous windings, exhibit a rich and varied vegetation. The spotted Orchis maculata occupies both dry and damp situations, but in the latter it luxuriates with such freedom as to give its own tone of colour to the meadow. White varieties are not uncommon, and Listera ovata, together with the fragrant Habenaria bifolia, are partial to the same conditions as to moisture. Gymnadenia conopsea, another highly fragrant species, abounds in various situations, but chiefly those of a drier or chalky nature. No plant lover could fail to be interested in such British species as Ophrys apifera and O. muscifera, especially those who have seen them for the first time. The latter affects, or at least grows freely in shady situations, and is extremely interesting on account of the resemblance of the petals to antennæ and the labellum to the body of a fly. The larger-flowered O. apsifera, however, will always be regarded as an object of great beauty. The greatest attraction lies in the rosy petals and the brownish-purple labellum, marked with traces of golden-yellow. Notwithstanding its beauty and high development, there is visible evidence in almost every fully expanded flower of the power and the process of self-fertilisation. The species delights in dry exposed places in the full blaze of the sun, where the chalky material in which it grows is dust dry. Rather uncommon Borageworts are Cynoglossum officinale, with purple flowers; and Echium vulgare, of a brilliant hue. The latter is so abundant in places as to give a most decided hue to the existing vegetation. The stems grow from 1 to 3 feet high, bearing scorpioid racemes (not cymes, as they used to be considered), densely arranged over great part of their length, and are highly conspicuous and effective. Orobanche minor, with its dingy brownish-purple flowers, is by no means a fastidious parasite, but seems to affect a host of plants of widely different affinities. Here it occurs on the tuberous root-stock of Arrhenantherum elatius bulbosum. In the deep shade of trees, where few of the above-mentioned subjects would maintain an existence, the curious Liliaceous plant, Paris quadrifolia, enjoys a cool retreat, although not altogether unmolested home. The leaves vary from four to seven, and the flowers, although far from attractive, are interesting, as the plant is rare or local.

Notable amongst the flowers of the cornfield are Specularia hybrida and Papaver Argemone. The latter is the smallest of British Poppies, and is rendered conspicuous by its bright scarlet flowers with black spots at the base of the petals and finely-divided foliage.

In spite of the broiling sun and the steep ascent, one is impelled to climb or scramble up the best way practicable, through a rampant and tangled vegetation, whether pathless or otherwise. Scattered about in the most careless and natural manner are the Bee Orchis, Wild Thyme, Erodium cicutarium, and broad patches of Hippocrepis comosa, and a host of other choice subjects too numerous to mention. Later in the season Chlora perfoliata, Erythræa centaurium, and Epipactis latifolia will keep up the floral display. Daphne laureola having flowered early is now bearing its clusters of black berries. Lathyrus sylvestris covers a wide range in this neighbourhood, extending for some miles at least along the lower slopes of the hills, and later on will make a bold and lasting display.

Once the summit is gained the eye ranges over a wide tract of pasture-lands and cultivated fields variously defined by brooks, pathways, and hedgerows, forming endless and fantastic outlines. Farther off, Redhill, Nutfield, and Bletchingly appear to nestle embosomed and sheltered amidst verdant clumps of trees. In another direction the vision extends uninterruptedly to the familiar and characteristic towers of the Crystal Palace at Sydenham. *F.*



## HOME CORRESPONDENCE.

**Fairy Rings.**—I measured the diameter of an enormous fairy ring to day on the chalk downs on the west side of Dunstable. It was exactly 60 feet in diameter, and was dark brownish-green in colour. This dark brownish hue was not owing to the presence of rank growing grasses but was almost entirely due to one broad and continuous growth of wild Thyme (Thymus Serpyllum). Dotted amongst this wild Thyme were numerous plants of the common Rockcist, Helianthemum vulgare. Both these plants are diffused over the downs, but they both show a most distinct and special liking for the fairy rings. The common Hippocrepis comosa is also frequent on the downs, but it is curious that this plant appears to avoid the rings. It is seldom to be seen on them. The Helianthemum of the rings is of a more sulphury-yellow colour than the Hippocrepis. The light sulphury-yellow tint of the Helianthemum, on the circles of dark Thyme, with its purple flowers, looks very curious and pretty, and the contrast with the darker Hippocrepis can be readily seen. *W. G. S.*

**Certificating Plants at the Royal Horticultural Society's Show.**—I see this week another peculiarity of the system of certifying plants by the committee of the Royal Horticultural Society. It is that they gave a First-class Certificate to Anguloa Ruckerii, sent up by Sir Trevor Lawrence; but they did not give one to the plant sent up by Mr. Ingram on May 26, which had seven flowers, nor did they to one I sent up last year with the variety sanguinea (to which they did give one). Again, the plant of Cattleya delicatissima, sent up by the New Plant and Bulb Co., which I believe is a pure white-lipped, rosy-sepalled and petalled form of C. Mendelii, was denied one. I also sent this variety up to the Conference, and that day my plant was denied a certificate. Surely a form of C. Mendelii named leucoglossa, which has a white lip without any blotch, and has rosy (though faint) sepals and petals, is worthy of certificate. There is growing dissatisfaction as to the manner in which certificates are given or withheld, and it behoves the committee to give them as they should be given. It may be there are too many on the committee who know so little about Orchids that they vote in a manner that is divergent with the voting of the orchidists, and thereby cancel the vote that should be given. If it is so there should be an Orchid committee alone, and as there are plenty of people who know enough of Orchids who would act it should be considered by the Council for future years. There are scores of good plant-growers who know no more about an Orchid than it knows of them: if there are such on the committee they have no business there. *De B. Crawshay.*

**Lisbon Parks and Gardens.**—Will you kindly allow me to make a correction in the note on the above heading in your issue of last Saturday (p. 826). "Portico" ought to be "patio." For the benefit of those who may not know the term, I may say that it is the Portuguese name for the quadrangular parcel of ground so often seen in the centre of houses in that climate. When this space is used as a garden it is still so termed, in contradistinction to "quinta," which would correspond nearest to our kitchen garden. The walls of the house round the "patio" are generally more or less furnished with balconies, which afford a deliciously cool resort during the burden and heat of the day. Some of these "patios" are merely stone or tile pavements set around a fountain, with perhaps Camellias, Loquats, Neriums, or something else in each corner, according to the discretion of present or past owners. Others again have mixed beds of flowering and foliage plants, and a balcony overrun by climbers; such an one had I in my remembrance when writing the sentence. *C. A. M. Carmichael.*

**Red-Spider on Vines.**—Having had to force rather sharply, I found red-spider attacking the Vines, and after trying the usual remedy of sulphuring the pipes and running the temperature up quickly for the heat to drive off the fumes, without meeting with the immediate success I desired, I resolved on other measures and set to work with the garden engine, charged with clear soft water, with which we quickly washed the insects off, and instead of the Grapes (which are fast colouring) looking any the worse for the sousing it has improved their appearance, and they give every promise of finishing up with a very fine bloom. The way we managed was to get well under the Vines, so as to catch the leaves right, when the water was driven at them in a continuous rushing spray, which at once broke the webs of the spider, without harming the foliage. The time we set to work was about 3 o'clock in the afternoon, when we set the house wide open and had a good fire under the boiler that the Vines and Grapes might dry quickly, and to hasten this we now and then gave them a knock or gentle shake, to bring the big hanging drops down, and they fell in showers. I once tried the same experiment when the Grapes were about the size of Peas; they got a little damaged then, the skins being too tender to stand the dashing of the water, and the knocking or chafing together of the berries it caused. At a later stage, like the above referred to, no one who has red-spider need hesitate to do as we have, and wash them off, but care must be exercised not to break or make holes in the leaves, which is soon done if the force of the water is not regulated to what they will bear. *J. Sheppard.*

**Tacsonias Dying.**—It is difficult, without seeing "H. K.'s" plant, to say what is the cause of the shoots dying in the manner indicated at p. 769 of our last volume. But have known shoots of T. Van Volxemii, when infested with white scale, to die in that way, and the cause, owing to the shoots being a good distance from the floor line, was not at first sight obvious. It is, therefore, just possible that the shoots of "H. K.'s" plant may be similarly affected. Or it may be that they are, or have been, tied too lightly to the trellis, or are in contact with unpainted galvanised wire. I would, therefore, advise your correspondent, if he has not already done so, to thoroughly examine his plants, cut clean away the decayed shoots, wash the individual plants and shoots with a sponge and soft-soapy water if necessary, train the same thinly

and loosely underneath the roof of his conservatory, and then give the plants a good watering at the roots, which, seeing that "H. K.'s" border is about the same size as the one here, and well-drained, should be repeated at least three times a fortnight during the summer and autumn months, with occasional applications of liquid manure, and whenever the flowers do not open, it is in a border made like your correspondent's, and presumably full of roots, an indication of dryness at the roots. Shoots should not be stopped, but simply thinned out to prevent them from becoming crowded. Thus treated, and with proper ventilation, satisfactory results may be looked for. *H. W. Ward, Longford Castle.*

**Flowering Shrubs in Suffolk.**—Is not this year exceptionally a flowering year? The Hollies have been white with blossom, and even the flowering of forest trees—Oaks, Sycamores, &c.—has been unusually profuse. The Banksian Roses have been masses of bloom, and the Pomegranate blossoms just expanding promise us wreaths of their lovely scarlet flowers. Lilacs, Laburnums, Rhododendrons, and double May trees have made the garden one glorious nosegay; and the orchard, so gay a few weeks since, promises a splendid crop. *Myrtle.*

**Eucalyptus globulus.**—Mention having been made in your columns recently respecting the Australian Gum trees, and of the difficulty experienced in getting the seed to germinate, allow me to say that I have found the seed of E. globulus to germinate most freely. In the spring of 1879 I purchased seed of this species of Mr. Treseder, of Sydney, which had been obtained from Tasmania, and which was at least a year old. It was brought to England without any special precaution to protect it from the sea air (being merely wrapped tightly in a fold or two of paper), and sown in the autumn of the same year; in about fourteen days nearly every seed grew. The three strongest were selected, and are now grown to strong young trees 15 feet high, the largest being 9 inches in circumference at 3 feet from the ground. Unfortunately, from being in an exposed situation they have suffered much from the cold winds, the result being that the largest has lost nearly all its leaves and the extremities of the branches are dead or dying, but strange to say it is budding out all the way up the trunk from the ground. It has twice had the top broken off by the wind. Having lived through these mishaps, it is easy to conceive what the tree would have become had it been planted in a position favourable for its development. One of them has developed foliage quite different to the others, and is evidently hardier, having retained its leaves. Of several seedlings raised each has exhibited some slight peculiarity of leaf; they have at first been opposite and ovate or ovate-lanceolate, ultimately becoming alternate and lanceolate; the young stem and branches being tetragonal; but in the exception mentioned the leaves have been not only different in shape but different in texture, being coriaceous and more like the common Australian Gums; the bark of the young stem is also different, being smooth, round and red. (I enclose a few leaves of this one for your inspection). The roots of this tree were a good deal meddled with at the time of planting, and had a quantity of manure applied to them. Whether the change in the foliage, &c., was the result of one or both of these causes, or whether it was from a seed of a different species, it is impossible to say. The leaves, at first, showed no perceptible marked difference from the others. I believe, myself, that all the seed was true E. globulus: if so, it shows to what an extraordinary extent the foliage and habit of the Eucalypti may vary, and gives some indication of the difficulties overcome by those who first undertook the differentiation of the species of this difficult genus. Last spring I sowed some more of the same seed when it was at least seven years old, and at the end of about four weeks nearly every seed germinated as before, the only difference being that the seed was longer in germinating and the young plants did not grow quite so fast as those of the first sowing. I have given the young plants away to different persons, but few seem to comprehend that such small plants can belong to a class of trees, individuals of which have been known to reach the enormous height of over 400 feet, and evidently regard the statement as somewhat over the left, consequently the plants are kept too long in the pots instead of being at once planted out where they are to remain. I believe the best way would be to put the plants where they are to remain when they are about 12 or 18 inches high, as the pots soon become choked with roots: this would give the tap-root a chance of descending perpendicularly, which is essential to the well-being of the trees. If this were done, and some protection afforded during the first two or three winters, this species would do well in the warmer parts of England (and indeed Scotland, as is evident from the communication of your correspondent, the Rev. D. Landsborough), provided suitable sites be selected for planting; these would be on the warm slopes of sheltered valleys, where the trees would not be exposed to the winds, and where the bed-rock is some depth from the surface. When the seedlings are only an inch or so high they have roots 4 or 5 inches deep, so that the necessity of providing depth of soil is apparent. Whilst on this subject I cannot help expressing regret that the magnificent timber trees of Australia should have been so ruthlessly destroyed—all along the coast from Melbourne to Sydney the scenery is marred by thousands of dead trees which have been killed by the process of ring-barking, so say the squatters, for the sake of the grass. Whether the end justified or was attained by the means is open to question; there cannot be much doubt that the climate has been prejudicially affected in consequence, and some of the colonists are waking up to the fact now it is all but too late. *Frank Gunning, Bristol, June 4.*

**Pollen Pellets.**—Probably those masses of pollen sent by Dr. Wallace to the Scientific Committee were deposited by Osmia rufa, one of our commonest wild bees. The bee found what seemed a convenient place for nidification, and then some human monster (I hope the lady will forgive me) opened the window and spoilt everything. *Entomophile.*

**The Auricula.**—Will you allow me to state that of the four types mentioned in your last article on the origin of the garden Auricula two are, according to Professor Kerner, hybrids, viz., venusta, Hort., Auricula × carniolica, and pubescens, Jacq., Superauricula × hirsuta. P. venusta is only found in Carniola, not on Monte Baldo, as formerly was believed. *O. Forster, Lehenhof, Austria.*

**Tying Plants.**—How often one sees plants tied, twisted, and contorted out of all natural shape, to the great detriment of the luckless specimen so operated upon in more ways than one. While admitting that some plants lend themselves more readily to this style of treatment than others, I do not for a moment think that any plant looks so well when it is tied down, or up, as the case may be, without a twig out of place, as it would do were it allowed to have a little of its own sweet will, and exhibit some of its natural habit. I allude to both plants in pots and planted out against pillars. How often one's feelings are outraged at the sight of a large climber trained up a pillar in a stiff-looking conservatory, tied in to its supports as tightly and closely almost as a Birch "besom." Now would the plant not look much happier if allowed a little more freedom, and will any one deny for a moment the improved appearance to the house were the longer shoots allowed to hang loosely? They might not just give an effect at once, but the shoots, leaves, &c., will soon adapt themselves to circumstances, and look very pretty. I remember once seeing a fine plant of Clianthus puniceus in fine flower, but it was tied in to the pillar of that conservatory, and a more "badly used" looking object you could not well imagine, whereas if it had but been left to throw its fine graceful shoots out from the pillar a little, it would have been a thing to admire, and would have afforded a relief from the painfully exact routine of the house. To go back again to plants in pots, I will take Azaleas as an instance, and I know I am treading on rather dangerous ground here, but assure all that I have no wish to hurt any one's feelings by writing against their particular hobby, but those that are so much in favour of those established ideas that Azaleas, to look well, &c., should be an exact pyramid and have the flowers regularly distributed over its surface, &c. I would simply ask them to see a large plant of the old A. indica alba or others allowed to grow in freedom, and see the pleasing effect produced by its introduction amongst Palms, Ferns, &c. Of course I do not advocate letting it grow where and how it likes; keep it within reasonable bounds by all means, but do not adopt the fearfully exact shape so much in vogue. I believe the chief argument in favour of close tying is economy in space: this we all know is a perplexing problem to all gardeners, who, no matter how much glass they have, invariably require more, but against this may be reckoned the time taken up with the operation, also in case of an accident, such as anything falling up against it, or getting a knock in transit, the specimen that is tied will take more harm than one not. And will any one maintain that plants can be as effectively arranged with others when tied into a "bunch" as they can when growing gracefully and free? *F.*

**Diseased Tomatos.**—Can you kindly explain the cause and give a remedy for the spots on the Tomato leaves herewith enclosed? The plant when so attacked is generally enfeebled, and the fruit, if set, will not develope. It is prevalent in a district where Tomatos are extensively grown under glass for the market. *W. K. & Co.* [The orange or pinkish spots infesting the Tomato foliage are caused by a fungus named Dactylium lycopersici, by Mr. C. B. Plowright. A description and illustration of the fungus is to be found in the *Gardeners' Chronicle* for November 12, 1881, p. 621. If possible the diseased leaves should be gathered and burnt. *W. G. S.*]

**Fabiana imbricata and Ceanothus Veitchii, &c.**—Amongst the many plants in the nurseries at Monifeith, Messrs. Laird & Sinclair's, is a grand plant of the above, about 5 feet high, trained against a wall. Covered with its pure white Erica-like flowers, what a grand plant as seen here; a great pity not more generally grown and known. Another telling plant close by is Ceanothus Veitchii, trained in the same way, covered with its bright azure-blue flowers, fine branching spikes, contrasting well with the former. Some specimen Deutzia gracilis also, 3 to 4 feet high and as much through, are laden with flowers also. These nurseries contain an extensive and varied collection of ornamental trees and shrubs and a superb collection of herbaceous and alpine plants, which are now to be seen in flower in the well arranged beds and borders, contrasting nicely with the ornamental plants. *A. O.*

**A Charming Bed.**—It is one designed by Mr. J. Hudson, of Gunnersbury House. It is a circular bed of medium size, on the grass plat, and is planted in this way:—In the centre is the Persian yellow Rose pegged down, round this is the Apricot-coloured Austrian Brier similarly treated, and as a margin to the whole a ring of the pretty blue Nemophila insignis; then from amid the Roses rise up plants of Hyacinthus candicans. This is at any rate an unusual bed, and with the Roses and Nemophila in bloom at the present moment, makes a very unusual one, and it is a great relief from the stereotyped flower beds one sees much too often. *R. D.*

**Mealy-bug on Vines.**—Thinking that a detail of my experience might prove useful in getting rid of the above pest, I will give you a short history of the case. About five or six years ago I introduced a fine plant of Stephanotis into a corner of my vinery, where for the first year it appeared healthy, and flowered abundantly. The next it was infested with mealy-bug, on which I removed it from the house; for the next three years my Grapes were entirely ruined, and the Vines became unhealthy in spite of every application I could think of. I tried sulphur, Fir-tree oil, and the usual recipes for washing the rods, besides fresh soil, paint, and whitening, without effect; but thinking it probable that the eggs or larvæ were deposited in the earth (the Vines being planted inside), I thought I would try the application of soot to the roots externally. This year I am happy to say no mealy-bug has manifested itself, and I have great hope that a cure has been effected. As in Phylloxera the mischief begins at the roots, the application of soot may be of service in that terrible pest. I wonder whether it has ever been tried. *James C. Barnham.*

**Morello Cherries.**—Whether it is the result of electricity or not, I was last year deprived of a very fine Morello tree in mid-season. It had set its crop of fruit, and, equally healthy with those near it, suddenly it withered and died. On taking it up in the autumn I could detect nothing in the roots or stock that would give me any reason to suspect the cause of it. I have had Pears, Roses, Clematises die in exactly the same manner, and have attributed it to

some composition in the soil peculiar to this locality. In the case of the Rose it was saturated with water several times, and ultimately recovered. This was one of about 400 dwarfs planted in one border. The cause was not dryness at the roots, because only the day before I had cut an exhibition bloom from it; the next day it was all withered up. *D. C. Powell.*

The Rosefield Vandas.—My Vandas bruised blooms are mentioned on p. 823. In justice to them and the packing, please insert that they first opened on April 19, and travelled nearly 200 miles to four shows, and of course were packed and unpacked eight times, making sixteen operations. *De B. Crawshay.*

The Position of Certain Stems in Plants.—In reply to your query regarding the above (*Gardeners' Chronicle*, June 13) the plants to which I more particularly referred were various species of Iris, notably our native I. pseudocarus, and the two foreigners, I. gigantea and I. cristata. A somewhat similar sample may be found in the leaves of our common Beech tree, the position and arrangement of the chlorophyll cells in those exposed to strong light being quite the opposite of such as grow in the shade. *A. D. Webster.*

Kandy (Ceylon) Exhibition.—Messrs. James Carter & Co., London, seed growers and merchants, have obtained the highest prizes, consisting of four Silver and six Bronze Medals, for the produce of their seeds at the Agri-Horticultural Exhibition held at the above place. *J. C.*

Candytuft Empress.—It is not often that a plant receives from the Floral Committee of the Royal Horticultural Society a First-class Certificate of Merit twice, but if the records of the doings of this body are examined it will be found that this very plant, which on Tuesday, June 23, received a First-class Certificate of Merit as Candytuft Empress, was previously awarded the same distinction in August, or early in September, 1883. It was then shown by Messrs. Biddles & Co., of Loughborough, under the name of Giant White Rocket Candytuft, and the Floral Committee awarded it a First-class Certificate of Merit, bestowing upon it the name of Iberis Empress. It is now shown as Candytuft Empress, and similarly honoured. If it received twenty First-class Certificates of Merit they would be deserved, for it is a great and remarkable advance in white annual Candytufts. The credit of originating it belongs rightly to Mr. James Dobbie, of Renfrew, an enterprising florist, who has done good work in the way of selecting very fine types of flowers and vegetables. This Candytuft was first sent out as Dobbie's White Giant Rocket Candytuft. I think Mr. Dobbie was a little too anxious to get it into the market, and so introduced it before its fine character was thoroughly fixed. I have seen seedlings from it varying considerably in character, some comparatively small, others wonderfully fine; and it was this last type that was shown on June 23. It should be grown by all lovers of hardy annuals. But under whatever name it may be known let Mr. Dobbie have the credit of having originated it. *R. D.*

Rhubarb Stott's Monarch.—I beg to corroborate the remarks of Mr. Cullingford at p. 827 respecting this variety. Its being of a green colour and large size may perhaps not find it favour with the market gardener or salesman, but for private establishments it would be appreciated, its flavour surpassing any other variety I know. *D. C. Powell.*

Double Primula sinensis.—These are admirably done at Shipley Hall, near Derby, by Mr. W. Elphinstone. There appears to be something novel about his method of management, and it does appear to have a great deal to do with the production of such finely grown and flowered specimens, fully 2 feet through, representing specimens such as one seldom sees. Mr. Elphinstone grows on young plants every year, and propagation commences as soon as possible after the specimens have done flowering. The plants are dried off gradually, and some powdered charcoal is laid upon the surface. Then the side shoots are cut half through with a sharp knife on the upper side, so that the half divided shoots sink down without becoming severed from the plant, and the charcoal beneath reduces the risk of decomposition. Here they remain for a few days, when the plants are placed in a temperature of something like 55° to 60°, where they put forth roots at the point of half severance, then they are taken off, potted, and plunged into a strong bottom-heat. They are then potted on as necessary and grown on coldly through the summer until the autumn, when they have a more generous treatment. Growing in this manner, it is not surprising that Mr. Elphinstone exhibits such splendid plants at the Manchester Chrysanthemum shows, and it is not with the ordinary double white that Mr. Elphinstone is so succesful, but with Mr. Gilbert's fine varieties, such as Marchioness of Exeter, White Lady, and Earl of Beaconsfield, also with Miss Eva Fish and Empress. This appears to be a new departure in the matter of propagating double Primulas; it is quite certain that it is a very successful one. *D.*

# Foreign Correspondence.

## LISBON BOTANIC GARDEN.

THE Botanic Garden is a recent formation in Lisbon. It is situated on some high ground in the city, sheltered, but not close. The curator, Mons. Jules Daveau, a young botanist, with no mean future before him, and who has already done good work in his pamphlet on the *Euphorbiacées du Portugal*, has fulfilled his duties in such a way that the garden in every way exemplifies the climate. This is high praise, for Portugal, in addition to a very rich indigenous flora, is naturally adapted for the growth of, amongst others, nearly all the Australian trees and shrubs, and a goodly number of Palms and Brazilian and Mexican plants. Vegetation from Madeira, the Canaries, and even the more distant Cape of Good Hope, seems only transplanted to a second home. The Palms in the open air are most interesting. The collection is a good one, and the growth of the young trees extremely vigorous and rapid. In an avenue in the lower part of the garden, the Palms in which are eight years from seed and four planted, have been matured in this short space of time into imposing proportions. Being composed of different varieties, a reliable estimate can be formed of those best adapted for the country. In this regard Washingtonia (Pritchardia, Brahea) filamentosa undoubtedly bears away the Palm. To quote Mons. Daveau's words, it is "*le roi des Palmiers ici en Portugal par la force de son végétation.*" A specimen near the conservatory is the tallest in Portugal, and is perfectly proportioned. Others that may be set down as successes are Cocos flexuosa, Livistonia chinensis (the Latania Palm), Brahea Roezlii, Howea (Kentia) Forsteriana, Phœnix reclinata (20 feet high), Livistona (Corypha) australis, Rhopalostylis (Areca) Baueri and sapida. The Cycads likewise flourish, and mention can be made in particular of Encephalartos villosus.

I will not attempt to enumerate more than a few of the noteworthy trees. Lisbon is not so far away, and Cintra is one of those places a man ought to see before he dies. The collection of the genus Ficus approaches completeness, and includes fine specimens of the taller growing species. Some of the Sterculiads have attained to considerable heights. Chorisia speciosa, from Brazil, is furnished with a trunk 10 to 12 inches in diameter, and is most formidably armed with spikes. Brachychiton populneum, a number of the leaves on which were trilobed, and acerifolium are likewise well represented: the latter variety is quite a sight when in flower. Of the Leguminosæ, noticeable were the prickly Parkinsonia and the Cæsalpinias. Other trees and shrubs that are among the features of the garden are Janipha manihot, Jatropha coccinea, Fabricia lævigata, Aralia capitata, Cassine Maurocenia, Eucalyptus, gomphocephala, Rhopala corcovadensis, Stadmannia africana, Dracæna indivisa, Musa sapientum, and Astrapæa Wallichii. Besides the above there is probably the finest specimen of Casuarina tenuissima in Europe. A more interesting, and at the same time pretty tree it would be hard to pitch upon. Strelitzia augusta forms a dense mass of striking foliage.

The borders of flowering plants were well filled and carefully arranged. As is only natural, the Cistuses were in great number: I noticed particularly albidus, lanigerus, hirsutus, and salvifolius. There was also a full collection of the indigenous Irises. Near the Irises were bulbs of Gladiolus segetum and Colvillei, Muscari comosum, Babiana villosa, and Ixia maculata, all being in flower in the beginning of April. M. Daveau has been very successful in growing Orchises. In flower at the same time were Orchis fusca, Serapia cordigera, occulata, and lingua; Aceras anthropophsora, and Anacamptis pyramidalis. A striking plant allied to the Eschscholtzia is Hunnemannia fumariæfolia. It is a native of Mexico, and produces brilliant yellow flowers. This was in flower also, together with various Echiums, Aloe albo cincta, and Agathæa amelloides, one of the prettiest blue flowers in cultivation. It is extraordinary why it is so little seen. The flower is shaped like a Marguerite, but the ray-florets are a pure blue. The same remark applies to Mesembryanthemum tricolor, the eye of which is purple and the petals white, edged with carmine. It is an exceedingly beautiful annual, that flowers very freely under Mons. Daveau's care, as also does crystallinum. To end this list of outdoor plants there is an extraordinary example of Scabrosa cretica, 5 feet high, and thick in proportion.

The glass accommodation is not very large. The best Orchids were Arpophyllum giganteum, Zygopetalum crinitum, and Ada aurantiaca. Among the Ferns prominent were Asplenium nidus, Lomaria splendens, and Platycerium Willinckii. Caryota urens was the most striking of the Palms. I have written a very imperfect account, but I hope I have said enough to show that these gardens ought not to be missed even by a visitor to Lisbon, who is only superficially bitten by horticultural taste. *C. A. M. C.*

# Reports of Societies.

## EDINBURGH BOTANICAL: June 11.

THE Society met in the class-room, Royal Botanic Garden, Professor Dickson in the chair.

The following communications were read:—

I. "On the Germination of Ruscus, Myrsiphyllum, and Asparagus." By Professor Alexander Dickson, M.D. With illustrative specimens.

Professor Dickson exhibited seedling plants of Ruscus, Myrsiphyllum, and Asparagus, chiefly in illustration of the postscript to his paper on R. androgynus, recently published in the Society's *Transactions*. Since that date the seedlings of R. racemosus had each produced (as was anticipated) a well-developed foliage-leaf of somewhat similar character to those produced in R. androgynus. In neither R. aculeatus, nor Myrsiphyllum, nor Asparagus, was there any trace of foliage-leaves.

Professor Dickson also exhibited seedling plants of the remarkable South African plant, Bowiea volubilis, where in the adult condition the leaves are all reduced to small scales, and the leaf function is performed by the green tendril-like branches. In the seedling condition, however, there are developed true foliage-leaves, elongated, linear, channelled on the upper surface, and semi-cylindrical on the lower. For detection of this case Professor Dickson said botanists were indebted to Mr. George Oliver, one of the foremen in the Royal Botanic Garden.

II. "Note on the Prairie Grasses of Manitoba, with exhibition of specimens." By Andrew Taylor.

III. "Report on the Progress of Vegetation at the Royal Botanic Garden." By Robert Lindsay, Curator.

The month of May was unusually cold and ungenial, much rain and frost occurred during the first three weeks, which retarded vegetation considerably until the last week of the month, when good progress was made, a change of tem perature having taken place. The season being a late one no permanent damage has been done; the only plant seriously damaged was Dielytra spectabilis, which had its flowers destroyed. The thermometer was at or below the freezing point on five occasions, indicating collectively 13° of frost (this is the greatest amount of frost registered in May since 1876, when 26° occurred. Last year no frost was registered in May. The lowest readings were, on the 6th, 29°; 7th, 31°; 8th, 29°; 12th, 26°; 14th, 32°. The highest morning readings were, on the 26th, 59°; 27th, 58°; 29th, 63°; 30th, 57°; 31st, 60°. The highest day temperature was 71°, on the 28th, and the lowest 45°, on the 3d. The foliage of the ordinary forest trees are well developed, flower-buds are numerous, but late in expanding. By May 31 we generally have the Horse Chestnut, Pavia flava, Laburnum, Lilac, Hawthorn, and varieties of Sorbus in flower. This year we have only had double Cherry, Gean, Apple, and varieties of Maple in bloom, but they have been very well flowered; Magnolias on walls are better set with flower-buds than they have been for several years back. Narcissus, Tulips, and hardy spring bulbous plants generally have flowered well, the earlier kinds are now forming seed freely. On the rock garden 139 species of hardy plants came into bloom as against 228 for the same month last year. Only forty-

two plants are of the same species as those recorded for May last year, the remainder having yet to bloom.

Among the finest which flowered were :—

| | |
|---|---|
| Andromeda fastigiata | Enkianthus himalaicus |
| Androsace chamæjasme | Linaria alpina |
| ,, villosa | ,, origanifolia |
| Azalea procumbens | Mertensia sibirica |
| Anemone narcissiflora | Myosotis antarctica |
| ,, alpina | Olearia Gunniana |
| Anthemis aizoon | Penstemon Menziesi |
| Alyssum alpestre | Phlox amœna |
| Corbusa Matthioli | ,, stolonifera |
| Coronilla minima | Primula Sieboldi |
| Daphne cneorum | ,, obconica |
| Dianthus gelidus | ,, sikkimensis |
| Dodecatheon integrifolium | Rhododendron lepidotum |
| Dracocephalum grandiflorum | &c., &c. |
| Erica australis rosea | |

IV. "Report on Temperature, Vegetation, &c., in the Garden of the Royal Botanic Institution, of Glasgow, for May, 1885."

During the first half of the month 23° of frost were registered, the lowest readings being 27° during the nights of the 4th and 6th respectively. The day temperatures during the early part of the month was also correspondingly low, cold east and north-east winds prevailed, and with an occasional shower of hail and sleet, was anything but May-like. The weather during the latter half has also been variable, and generally cold, the highest day temperature recorded being 62° (in the shade), on the 28th. Owing to the untoward weather vegetation has been considerably retarded; the leaves of some hardy trees such as the Horse Chestnut and Bird Cherry, have a blighted look. Late-leafing trees, as well as hardy herbaceous plants, are slightly in advance of last year. Late-sown annuals have germinated freely. Deciduous trees and shrubs of all kinds are blooming freely, and there is every propect of a good fruit season.

V. Miscellaneous communications :—

1. Dr. Buchanan White sent the following note :—

"I wish to exhibit, on behalf of Mr. James Brebner, of Dundee, and a Fellow of the Society, the accompanying specimens of a plant which Mr. Brebner gathered in the neighbourhood of Loch Tummel, Perthshire, in July last, and which I have recently identified as Schœnus ferrugineus, C., a species which has not hitherto been recorded as British.

"S. ferrugineus can be readily distinguished from the allied S. nigricans by being smaller in all its parts, by the shorter and more erect lower bract, fewer spikelets (usually two but often only one), and glumes smooth or almost smooth on the back. From its European distribution it was not unlikely to occur in Britain, and will probably occur elsewhere in Scotland if looked for."

2. Mr. C. C. Babington sent the following note to Mr. Taylor regarding an accidental error in the last fasciculus of the *Transactions* :—

"*Viola stagnina, new to Britain* (p. 165, line 14).—What does Mr. Evans mean? It was given by me as a British plant in the *Manual*, ed. 3, p. 36, A.D. 1851. I gathered it in Bottisham Fen in 1829, but we then confounded it with V. lactea (Sm.), our present V. canina, β lancifolia. Henslow published it under the name of V. lactea in his *Catalogue of British Plants*, ed. 2, 1835, 'as a native of Cambridgeshire.'"

Mr. Dunn, Dalkeith Palace Gardens, exhibited a branch of Eucalyptus globulus with flower-buds, from a plant in the open air at Dalkeith Gardens.

Mr. Lindsay drew attention to a flower of Phyllocactus anguliger, which was sent to the meeting from the gardens at Trinity Grove, and to a plant of Iris iberica from Mr. Munro, Abercorn Nursery, Piershill; and to various interesting plants in flower from the Botanic Garden, among which were the following :—

| | |
|---|---|
| Androsace foliosa | Primula floribunda |
| Allium karataviense | ,, capitata |
| Arisæma triphylla | Platystemma violoides |
| Dianthus glacialis | Silene quadridentata |
| ,, hybrid from neglectus | Myosotis alpestris |
| Delphinium Brunonianum | Saxifraga odontophylla |
| Polygonum affine var. Brunonis | ,, cæsia |
| Primula prolifera | ,, squarrosa |
| | Linaria origanifolia, &c. |

## TORQUAY HORTICULTURAL.

THE annual Rose show of this Society took place on Thursday, June 25. It was held in the private grounds of Apsley House, which were admirably adapted for the purposes of the exhibition, being well sheltered from gales, which have on previous occasions caused great anxiety to the committee. It was more central, and therefore more easy of access than the site chosen on Torbay. Rose growers in the neighbourhood had to put up with showery weather for a day or two previous, just sufficient to damage their blooms, and of course could not stand very strongly against the Oxford growers, who had been favoured with the best of weather for Roses. One or two large growers backed out of their engagement. As it was, there was more competition than in many former years. Prizes for plants were greater than usual, and should have brought many outsiders, but competition was entirely confined to the neighbourhood. Fruit and vegetables were good, but not very numerously contested.

### ROSES.

Cut blooms (open) : twelve new Roses of 1884 and 1885, one truss of each.—1st, Messrs. Curtis, Sandford & Co., Devon Roseries, Torquay. Their box contained Caroline Sivales, very fine Rose; Madame B. Mackart, Joseph Mitral, Mdlle. M. Rodocanachi, Mrs. G. Dickson, very much like Madame G. Luizet—a fine satiny Rose; Alphonse Superb, Mdlle. Julie Gaulain, Madame Delaux, President Sinclair, Benoit Comte, dark crimson; and Madame Rambaue. 2d, Messrs. Cooling & Son, Fath—Marguerite de Romaine being the best in this collection.

Six blooms of any new Rose of 1884—1st, Messrs. Curtis, Sandford & Co., who had a splendid stand of Alphonse Superb; 2d, Messrs. Cooling & Son.

Twelve blooms of any one variety.—1st, Messrs. Curtis, Sandford & Co., with Ulrich Brunner, a very fine bold grown flower; 2d, Messrs. Cooling & Son, who had Lady Mary Fitzwilliam, a hybrid Tea in very good condition; 3d, Mr. Prince, Oxford.

Seventy-two distinct varieties (one truss of each).—1st, Messrs. Curtis, Sandford & Co., who staged an excellent lot of blooms of good substance and varied in colour, their principal varieties being Magna Charta, a variety shown well this season; Madame Rougier, Mrs. Baker, Merveille de Lyon, a beautiful light Rose; A. K. Williams, Prince Arthur, Catherine Mermet, Violet Bowyer, Abel Carrière, Devoniensis, and Helen Paul; 2d, Mr. R. W. Beachy, Fluder Nurseries, Kingskennel, near Torquay; 3d, Messrs. Cooling.

Forty-eight blooms, distinct.—Messrs. Curtis, Sandford & Co., who had specially good Général Jacqueminot, Constantine Treliakoff, Victor Verdier, Xavier Olibo, Duke of Edinburgh, Duchesse de Vallombrosa, Mons. Noman, and Madame Lacharme; 2d, Mr. Beachy, who is coming well to the front with Roses, staging excellent blooms in all classes he exhibits in.

Thirty-six blooms, distinct.—Here Mr. Prince obtained 1st, having nearly all Teas, in splendid condition, including Alba rosea, Madame Lambard, Mons. Furtado, Alphonse Superb, Etoile du Lyon, A. K. Williams, Niphetos, Lady M. Fitzwilliam, Comtesse de Nadiallac, Catherine Mermet, Amazone, a beautiful sulphur-yellow; Rubens, Adam, Marie van Houtte, Souvenir d'Elise Vardon, and Anna Olivier; 2d, Messrs. Curtis, Sandford & Co., who staged principally H.P.'s in good form; 3d, Mr. Beachy.

Thirty-four varieties (three trusses of each).—Messrs. Curtis & Sandford, carried off the 1st prize, with an excellent lot of blooms.

Twelve Teas and Noisettes, distinct (one truss of each).—1st, Mr. Prince; 2d, Miss Watson Taylor (gr., Mr. F. Gardon); 3d, Messrs. Cooling.

### AMATEURS' CLASSES.

Forty-eight varieties, distinct (one truss of each).—1st, Mr. Gardon; 2d, Mr. M. Sparke.

Twelve varieties, distinct (three trusses of each).—1st, Mr. Gardon; 2d, Mr. Leach, gr. to J. Drew, Esq., Park Villa, Kenton; 3d, Mr. M. Sparke.

Twenty-four varieties (one truss of each).—1st, Mr. Gardon; 2d, Mr. M. Sparke; 3d, Mr. Cole, gr. to W. B. Fortescue, Esq., Octon, Torquay.

Twelve varieties (one truss of each).—Good competition, and numerous entries in this class. 1st, Captain Christy, with a very nice lot of blooms; 2d, Mr. Gardon.

Six trebles, distinct.—1st, Mr. Gardon; 2d, Mr. W. Colville.

Twelve blooms, one variety.—1st, Mr. Gardon, with a fine box of blooms of Maréchal Niel; 2d, Captain Christy.

Six Teas and Noisettes and six H.P.'s, distinct.—1st, Mr. Gardon; 2d, Captain Christy; 3d, Mr. M. Sparke.

### PLANTS.

Twelve plants stove or greenhouse.—1st, Mr. H. Yelland, gr. to Col. Campbell, Torquay; he had a fine specimen of Pimelea Hendersoni, Crassula coccinea, Trachelospermum jasminoides, and a very large specimen of Phormium tenax variegata. 2d, Mr. F. Ferris, gr. to J. Kimber, Esq.; 3d, Mr. Coles.

Six stove plants.—1st, Mr. H. Damerel, gr. to Lady Macgregor.

Six stove and greenhouse plants in pots, not exceeding 8 inches in diameter.—1st, Mr. Stoneman, gr. to Captain Fane Tucker; 2d, Mr. Cole.

A special prize was offered for fifteen tuberous Begonias, Mr. Beachy securing 1st, with a well-grown lot of specimens, all of good variety; 2d, Mr. Stoneman—equal 2d, Mr. Ferris—both of whom were close on the heels of the 1st. This class was quite a great feature of the exhibition, the double and single blooms being of unusual size and fine colour.

### FRUIT.

Three bunches of black Grapes.—1st, Mr. Coles, with good bunches of Black Hamburgh.

Six Peaches.—1st, H. B. Samuelson, Esq., a very fine dish of Barrington; 2d, Mr. J. R. Fisher.

Six Nectarines.—1st, H. B. Samuelson, Esq.

The local nurserymen came out strong with collections of plants; these were supplemented with large collections from Messrs. Veitch & Son and Messrs. Lucombe, Pince & Co., of Exeter, Messrs. Phillips & Co., Messrs. Horn & Co., and others.

## RICHMOND HORTICULTURAL: June 24.

This large suburban society held its annual summer show so early as Midsummer Day, and was singularly favoured by the weather, which was so warm that the gayest toilettes could be worn, and the fullest enjoyment obtained from the music the two fine bands discoursed. Held as usual in the Old Deer Park (where we note with regret not a few fine Beech trees have died from want of moisture), the ample space at the disposal of the committee enabled that body to erect ample tent accommodation, indeed one tent, some 230 feet by 60 feet, was one of the finest we have seen, and could but regret that its enormous area was so indifferently occupied. The most pleasing features in this huge canvass erection were the competitive and non-competitive groups of plants, arranged with much effect. Of these the trade displayed, not for competition, as under :—Messrs. J. Laing & Son, Forest Hill, some superb Begonias set in a frame of foliage plants, in which way these rich hued flowers displayed their beauties admirably. Mr. J. Vander Rees, Tooting, had a most interesting group of hardy plants, Pæonies, Pyrethrums, Gaillardias, Liliums, Spiræas, Arums, Funkias, Campanulas, &c., that secured much attention. Messrs. Jackson & Son, Kingston, had a charming group of stove and greenhouse plants inclusive of many capital Orchids, and prominent were plants of the pretty pink flowered Pimelea diosmæfolia, also many well flowered Ericas, &c. Mr. K. Drosk, of Kew Road Nursery, staged a huge centre group of Palms, interspersed with Hydrangeas, Lilium lancifolium, Iris, &c., that was more heavy than handsome.

The open decorative groups of 100 feet area were a charming feature, Messrs. Hooper & Co., Twickenham, taking 1st place with a very elegant arrangement; Messrs. Fromow & Sons, Turnham Green, coming 2d with another very pleasing group, though rather too thin at the base; Mr. H. James, Norwood, who was too strong in white Hydrangeas and Marguerites, was 3d; and Mr. W. Browning, Richmond, 4th. Other small groups formed a pretty feature, and were admirably arranged, the competitors being limited to gardeners.

### STOVE AND GREENHOUSE PLANTS

were fairly well shown by Messrs. Jackson & Son and Mr. H. James. The former had fine specimens of Pimeleas mirabilis and diosmæfolia, Clerodendron Balfourianum, Franciscea calycina, Ixora Williamsi, and several good Heaths, &c. Mr. James' collection were fine plants of Darwinia Hookerii, Ericas, Stephanotis floribunda, and Allamanda grandiflora. These same exhibitors were chief in the class for six Orchids, Mr. James taking 1st place with literally masses, finely bloomed, of Cattleyas Mossiæ and Mendelii, Epidendrum vitellinum majus, Cypripedium barbatum nigrum, Oncidium macrantha, and Lælia purpurata. Messrs. Jackson had good Odontoglossums Alexandræ and vexillarium, Cattleyas, Dendrobiums, &c. Mr. F. J. Hill, gr. to H. Little, Esq., Hillingdon, had the 3d prize lot, including a good plant of the beautiful white Dendrobium Dearei. In the small class for stove and greenhouse plants Mr. Bates, gr. to Mrs. Week, Poulett Lodge, Twickenham, had capital Bougainvillea glabra, Allamanda Hendersoni, Dipladenia hybrida, Sobralia macrantha, and other good plants, taking 1st place with ease. Ferns, Palms, and ordinary foliage plants were in great force, forming a most uninteresting feature at most shows, and of which far too much is made. Classes for these things need to be cut down vigorously.

Pelargoniums, on the other hand, lend ever welcome colour to any summer show, and in this case were well set up by Mr. Little, who had six superb large flowered kinds in Thebais, Ruth Little, Formosa, Duchesse de Morny, Comtesse de Choiseul, &c. Mr. Wiggins, gr. to W. Clay, Esq., Kingston, was equally strong in fancies, having really finely flowered plants of Princess Teck, Roi des Fantaisies, Queen of the Hellenes, and East Lynne.

A special prize for the best group of large-flowered Pelargoniums was awarded to Mr. Wiggins, his fine lot of seedling plants including not a few really capital kinds, giving him an easy 1st. Mr. Brown, of St. Mary's Nursery, Richmond, came 2d, with a neat group of small plants; whilst Mr. Little's larger group of half specimens fell out for want of variety.

Some capital zonal Pelargoniums were also shown by Mr. Sallows, gr. to J. T. Flack, Esq., Twickenham, who had finely bloomed Madame Boleit, Madame Thibaut, M. Gelein Loumagie, and other good doubles. Mr. Waite, gr. to the Hon. Colonel Talbot, Esher, who was 2d, had finely flowered plants, chiefly of single kinds.

Fuchsias, usually so strong a feature at Richmond, were quite unrepresented.

Begonias were fairly good, and some excellent Gloxinias were staged.

### CUT FLOWERS

always form an important feature, but the open class for thirty-six Roses in trebles, which usually brings good competition, was a good thing for Messrs. Paul & Sons, Cheshunt, as also was the class for twenty-four trebles, this firm being the only exhibitors. Good examples of Ulrich Brunner, Mdlle. E. Verdier, Alfred Colomb, Xavier Olibo, Lady M. Fitzwilliam, Mons. E. Y. Teas, Henri Ledechaux, François Michelon, A. K. Williams, M. Prosper Langier, and Maurice Bernardin were noticeable.

Messrs. C. Lee & Sons, Hammersmith, put up a very fine collection of cut Roses, chiefly H.P.'s, not for competition, that elicited much attention.

In the open class for twelve Teas, for amateurs, the best lot came from Mr. Mitchell, Gerpins, Esher, who had good blooms of standard varieties. The same exhibitor was 1st in the class for twenty-four single blooms, any kind.

Mr. Bates had the best box of stove and greenhouse cut flowers, capital things, but too closely arranged; and Messrs. Hooper & Co. the best lot of cut hardy flowers, a charming collection well set up, consisting of Poppies, Pæonies, Pyrethrums, Delphiniums, and many other showy things, for which this firm has a wide reputation. Mr. Bowell, gr. to Lady Parker, Richmond, had very fine Pæonies in his collection.

### TABLE DECORATIONS

were generally excellent, though in the arrangements of a dinner-table for ten persons some effects of a very dowdy kind were produced by local lady amateurs, that were the reverse of pleasing. The best arrangement, which included three simple dressed centre-stands with pretty decorated finger-glasses, and six moderately filled dishes of fruit, was exhibited by Mr. Butcher, of Nor-

wood, the whole calling for the highest approval. Mr. J. R. Chard, Clapham Common, was 2d with stands somewhat squat, but still prettily dressed, light dishes of fruit, rather too carefully heaped, and white Nymphæas simply placed in finger-glasses. Mr. Chard was 1st with three table-stands, elegantly dressed, although the prettiest effect no doubt was obtained by Miss Hassell, Gravesend, whose decorative efforts were admirable, but somewhat marred by rather heavy stands. Mr. Chard had the most solid bouquet, and Mr. Butcher one that erred in being rather too loose, still much better than the general run of show bouquets.

FRUIT.

Mr. J. Munro, gr. to E. D. Paul, Esq., Cambridge House, had the best collection of six dishes of fruit, Mr. Bates coming next with also capital samples, and was 1st in the class for black Grapes, with good Alicantes. White Grapes generally were not ripe.

Mr. Waite had the best collection of twelve vegetables, a really first-class lot; Mr. J. Coombs, of Sheen House, came 2d. Mr. Filsell, Cambridge Park, won Messrs. Sutton's special prize for a brace of Cucumbers, with handsome Royal Windsor.

## TWICKENHAM HORTICULTURAL: June 30.

HELD in the admirable grounds attached to the Metropolitan Police Orphanage, in pleasant weather, the annual summer exhibition of this popular suburban society not only showed marked advance on preceding ones, but was very liberally patronised. Amongst striking features were seen a beautiful group of stove and greenhouse plants from Messrs. Jackson & Son, Kingston. A fresh and lovely group of pot Roses, backed by Japanese Maples, and faced by good plants of Eurya latifolia variegata from Messrs. Veitch & Sons. A good group of decorative plants from Mr. R. Laing, of Twickenham, and a gay display of Pelargoniums from Mr. Wiggins, gr. to W. Clay, Esq., Kingston, to some few of which Certificates of Merit were awarded.

Messrs. Hooper & Co., of Twickenham, were placed 1st for a beautiful decorative group of plants in the open class, one thoroughly characteristic of Mr. Bruckshaw's skill in arrangement; Mr. H. James, of Norwood, coming 2d with one in which Orchids largely predominated, but it wanted finish.

The best collection of flowering plants came from Messrs. Jackson & Son, who had a fine Clerodendron Balfourianum and Pimelea diosmæfolia; Mr. James was 2d with large, but not well furnished plants; and Mr. Parsons, gr. to T. Twining, Esq., Twickenham, had in the 3d prize lot a first-rate Eucharis amazonica, and a capital piece of Oncidium flexuosum.

Foliage plants were about as usual, fair of their kind, but dull and uninteresting. Mr. J. Follows, gr. to J. J. Flack, Esq., Twickenham, had six first-rate Begonias in Snowflake, Lothair, Mrs. Duke, Marquis of Bute, Stella, &c.; the same exhibitor had the best pair of Achimenes, huge masses from 20 to 30 inches through, and full of bloom. Mr. Monro, gr. to E. D. Paul, Esq., Cambridge Park, Twickenham, coming; 2d also with finely-flowered masses. Mr. Parsons had the best Gloxinias, full of bloom and luxuriant foliage; and Mr. Sallows the second best lot, also excellent.

Cut flowers were shown in great abundance. Messrs. Veitch & Sons, and Messrs. C. Lee & Sons, Hammersmith, sending large collections of superb Roses, that were greatly admired, keeping fresh to the last. Mr. Laing also had a good lot of flowers. Messrs. Hooper & Co. sent a singularly pleasing collection of Irises in many hues and markings, and was exceedingly beautiful. Mr. W. Poupart staged a big group of market flowers—Pæonies, Roses, Carnations, Pinks, white and scarlet Sweet Peas, blue Corn-flowers, Ranunculuses, &c., in great variety. The best twenty-four cut Roses in competition came from Mr. Warwick, gr. to J. P. Kitching, Esq., Hampton, and Mr. Moorman, Coombe Bank, Kingston, was 2d, both lots of blooms being excellent. In the competition for twelve blooms positions were reversed, and Mr. Moorman took 1st place. The class for cut blooms of Gloxinias was exceedingly attractive; and Mr. Warwick, who from the first seems to have taken the lead, was again placed 1st with some lovely flowers. Dinner-table stands were in great force, and some amateur arrangements displayed unusual excellence; Mrs. Allfrey, Mrs. Tindall, and Mrs. Gardiner, all showing stands that merited high approval.

The best collection of six dishes of fruit came from Mr. Munro, who had good black Grapes, Gros Mignonne Peaches, Elruge Nectarines, &c.; Mr. G. Trussler, gr. to A. Cooper, Esq., coming 2d, having some fine Duke of Buccleuch and Frankenthal Grapes, &c. Mr. Waite, gr. to Colonel Talbot, Esher, had the best collection of ten kinds of vegetables. A first-class lot of Hackwood Park was the best Tomato in a good class, and Royal Windsor and Tender and True the best Cucumbers. Mr. Poupart also staged a grand collection of vegetables and hardy fruits.

## HARPENDEN.

A WILD FLOWER SHOW.—The practice is now very general at country floricultural exhibitions of offering prizes for collections of wild flowers shown by children. The competitors, however, rarely seem to understand that more is expected than the mere jumbling together of as many different sorts as possible. It does not occur to them that pleasing and tasteful arrangement is to have any influence on the awards. This error is entirely obviated by the capital tuition of Mr. John Henshaw, the energetic master of the British Schools, Harpenden, who on Thursday and Friday of last week held his sixth annual show of wild flowers and grasses.

To stir up in the rising generation, who are likely to spend most of their days in the country, a pleasure in botanical pursuits will doubtless be attended with many beneficial results, and Mr. Henshaw tries to cultivate in the young lads committed to his charge a love for the beautiful, taste in arrangement, and an interest in the flora of the neighbourhood.

The exhibits were arranged in rows of bottles of various sizes, and labelled with the botanical order to which the plants belonged, also the scientific and common English names.

The wild flowers were backed up with some excellently grown exotic Ferns from the conservatories of Mr. H. T. Hodgson (gr., Mr. C. Sibley), and some elegant foliage plants from the greenhouses of Mr. C. R. Fenwick, High Firs (gr., Mr. G. Underwood); these were very attractive, and imparted a tropical-like aspect to the show.

Owing to the limited space at command, the competitors were necessarily confined to boys of the upper classes, and were divided into three sections:—Class A, showing fifty different species; Class B., showing thirty different species; and Class C., showing twenty different species. Besides the ordinary exhibits, a special feature was a prize of £1 offered by Mr. G. Danford, Ayres' End, Harpenden, for twenty of the rarest wild flowers found within a radius of 5 miles of those schools. This prize was taken by Frederic Deller with the following plants:—Campanula glomerata (clustered Bell-flower), Spiræa filipendula (Dropwort), Cotyledon umbilicus (Pennywort), Ophioglossum vulgatum (Adder's-tongue Fern), Lychnis diurna (Red Campion), Atropa belladonna (Deadly Nightshade), Anthyllis vulneria (Lady's Fingers), Lychnis flos-cuculi (Ragged Robin), Epipactis grandiflora (large Epipactis), Hebenaria bifolia (Butterfly Orchis), Helleborus viridus (green Hellebore), Ophry's apifera (Bee Orchis) Ophrys muscifera (Fly Orchis), Habenaria viridis (Frog Orchis), Salvia verbenaca (wild Sage), Vicia sepium var. alba (white flowered bush Vetch), Geranium phœum (Dusky Crane's Bill), Adonis autumnalis (Pheasant's Eye), Calamintha officinalis (Calamint), and Conium maculatum (Hemlock). The books given for this prize were Margaret Plues' series, comprising *Rambles in Search of Wild Flowers*, *British Ferns*, and *British Grasses*. For fifty specimens, the 1st prize, two books, entitled *Wild Flowers*, with 176 coloured plates, by Anne Pratt, was awarded to Frederic Archer Willis; the 2d prize, *Flowers of the Field*, by the Rev. C. A. John, being taken by Frederic Deller, the winner of the prize for the twenty rarest. The 1st prize in division B., a book entitled *Rambles in Search of Wild Flowers*, by Margaret Plues, was won by George Underwood, High Firs; the 2d prize, *Wild Flowers Worth Noticing*, by Mrs. Lankester, was taken by Edwin Guess, New Farm; and the 3d prize, *Botany for Beginners*, by Dr. M. A. Masters, was awarded to Sidney Longland. In division C., for twenty specimens the first prize, *Flowers of the Field*, was taken by Walter Shore, Bowling Alley; the 2d prize, *Botany for Beginners*, being won by Samuel Skillman, Redbourn; the 3d prize, *Rambles in Woodland*, was obtained by James Fishbourne; the 4th prize, *Lane and Field*, being secured by William Pearce—the collections of J. Aldridge and Charles Harris, all of Harpenden, being highly commended.

A great acquisition was made to the show, as in former years, by several magnificent collections of hardy herbaceous and alpine cut flowers, to which was appropriated the class-room of the school. These exhibits included a very commendable selection from the nurseries of Mr. T. S. Ware, of Tottenham. There were further collections from gardens in the neighbourhood. The walls of the schools were adorned with an exceptionally good collection of mounted botanical specimens of British wild flowers, the workmanship of Mr. William Deller, an assistant teacher in the schools.

## KANDY AGRI-HORTICULTURAL EXHIBITION.

THE first show of this Society was opened in Kandy on May 27 by His Excellency the Hon. Sir Arthur Hamilton Gordon. His Excellency was received at the entrance at 3 P.M. by Dr. Trimen (the secretary), and several members of committee. The entrance was through the Buddhist temple grounds, and passing the band-stand on the left, descended into the building over a neat artistic Japanese design of a Bamboo bridge. The building was after the form of a Maltese cross, designed by Mr. Spooner, P.W.D., and erected by prison labour under charge of Mr. Wood, who was specially thanked by His Excellency. Dr. Trimen conducted His Excellency over the exhibition, and he appeared to take an interest in everything as he passed along. The building was entirely Oriential in structure, not a nail being used. The roof and tables were built of Bambusa vulgaris, B. arundinacea, and Dendrocalamus giganteus, supplied from Peradenija gardens, and tied down by Cocoa-nut yarn, the roof covered over with "Cadjus," plaited leaves of the Cocoa-nut Palm, Cocos nucifera. The interior was most tastefully decorated by the Sinhalese headmen with fruit and flowers of the different Palms, Plantains, Pine-apples, Stag's-horn moss, &c.

GARDEN PERENNIALS

were not extensively shown. Roses poor. Some good Begonias and Pelargoniums. Mr. Owen's Gloxinias were fine and would have done credit to an English show. A fine stand of bronze-leaved Pelargoniums from Cannell & Sons' stock were much admired.

GARDEN ANNUALS.

Balsams, Petunias, Phlox, Zinnias, and Asters were exhibited.

FERNS

were extensively shown, and in some of the collections, especially Mr. Pate's and Mr. Jouklas', were fine specimens of really good varieties.

FOLIAGE PLANTS.

Crotons were a nice lot, well-grown and highly-coloured, by Mrs. Pearce. Dracænas were good, sent by one of our most persevering horticulturists, Mr. W. H. Wright, Colombo. Several exhibits of Caladiums, Marantas, and Coleus were staged, and the honours going to the Hon. J. F. Dickson and Mr. A. Whyte.

VEGETABLES.

Two good collections, grown from Messrs. Carter's, R. B. Laird & Son's, and J. Dickson & Son's seeds. Disappointed at the small number of competitors in this class, when our climate is so suitable for their cultivation. Tomatos were good, The Trophy taking the lead followed by Excelsior and President Garfield, the latter very large.

FRUIT.

Small collection; still the Peaches and Plums sent by Mr. Cotton were very fine, and much admired.

NATIVE PRODUCTS.

Paddy, Oryza sativa, the most important in this class, was very extensively shown, and some lots contained as many as fifty varieties. Mr. Ingleton was still to the front with good Tobacco and excellent cigars; Tree Cotton (Bombax malabaricum), in good samples—an industry lately developed by the natives; fibres, ropes, and seeds fairly represented.

ESTATE PRODUCTS.

The island of Ceylon may well give this class the prior claim; for every one, from the Governor to the Tamil coolie, depends upon our planting enterprise. Collection of estate products poor competition, and not as I expected. Commercial Teas, numerous entries, but owing to some misunderstanding most of the exhibitors had wrongly classified their Teas. A son of the soil, Mr. J. H. Barber, carried off the Gold Medal with Tea grown and manufactured at 2000 feet elevation; he also secured a Bronze Medal for fancy Tea. The fancy Tea first award, also low grown, went to Mr. Maitland, Rakwane. For Coffee in parchment and cured the award went to the Laird o' Logie estate, 4500 feet above sea level. Liberian Coffee was also well shown. Cocoa was keenly contested, and several splendid samples tabled, the Gold and Silver Medals going to Dumbura Valley, near Kandy, Pallakelle, and Rajawelle estates, well known marks in the London market. Cardamoms a fine display. Cinchona, one of the most important exhibits in the exhibition, brought forth some very fine collections and beautiful samples of bark. The Gold Medal, "Kirklees Estate;" Silver Medal, Mr. Q. M. Christie, St. Andrews. Cinnamon, a splendid exhibit from "Ekelle Estate." Other small products well shown.

A nice collection of plants, containing several new and rare, were forwarded by Mr. Nock from Hakgala. Considering that they travelled 10 miles by road and 80 miles by rail, arrived in perfect condition, reflecting great credit on his foreman for careful packing.

This proved one of the most successful exhibitions ever held in Ceylon, leaving the finances in a very healthy condition. The committee have every reason to feel proud of their labours. *J. A., June 4.*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, JULY 1, 1885.

| MONTH AND DAY. | BAROMETER | | TEMPERATURE OF THE AIR. | | | | | | HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION | | WIND. | | RAINFALL. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean Reading at 32° Fahr. | Departure from Average of 38 years. | Highest. | Lowest. | Range. | Mean for Day. | Departure of Mean from Average of 30 years. | | Dew Point. | Degree of Humidity. Sat = 100 | Average Direction. | | |
| June | In. | In | ° | ° | ° | ° | ° | | ° | | | | In. |
| 25 | 29·81 | +0·02 | 57·5 | 46·0 | 11.5 | 51.2 | — 0·9 | 49.0 | | 93 | E.N.E., N.NW. | | 0·12 |
| 26 | 30·04 | +0·22 | 63·2 | 50·5 | 12·7 | 54·0 | — 7·2 | 49.3 | | 75 | W.NW. | | 0·00 |
| 27 | 30·09 | +0·27 | 71·5 | 44.8 | 26.7 | 55·7 | — 5·6 | 46.0 | | 70 | E | | 0·00 |
| 28 | 29.88 | +0.06 | 72.1 | 47·5 | 24.6 | 57·2 | — 4·1 | 48.2 | | 71 | E. | | 0·03 |
| 29 | 29·78 | —0.04 | 69·0 | 52·3 | 16·7 | 57·5 | — 3·8 | 49.7 | | 76 | E | | 0.00 |
| 30 | 29·83 | +0.02 | 70·5 | 51·5 | 19·0 | 59·0 | — 2·2 | 43·9 | | 57 | E. | | 0.00 |
| July 1 | 29·97 | +0.16 | 68·5 | 51·2 | 17·3 | 57·7 | — 3·5 | 46·6 | | 67 | E.N.E., E. | | 0·00 |
| Mean | 29.92 | +0·10 | 67·5 | 49·1 | 18·4 | 56·0 | — 5·2 | 47.1 | | 73 | E. | | 0·12 |

June 25.—Rain in early morning, fine day, dull.
— 26.—Fine, dull.
— 27.—Very fine day and night.

June 28.—Very fine day and night.
" 29.—Dull morning, fine bright afternoon.
" 30.—Very fine morning, occasionally cloudy in afternoon.
July 1.—Fine, dull day, gleams of sunshine.

LONDON: *Atmospheric Pressure.*—During the week ending June 27, the reading of the barometer at the level of the sea increased from 29.56 inches at the beginning of the week to 30.16 inches by 9 A.M. on the 22d, decreased to 29.85 inches by 5 P.M. on the 24th, increased to 30.23 inches by 1 P.M. on the 26th, decreased to 30.20 inches by 5 P.M. on the same day, increased to 30.33 inches by 9 A.M. on the 27th, and was 30.24 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.09 inches, being 0.18 inch higher than last week, and 0.10 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 86°, on the 24th; on the 25th the highest was 57°.5. The mean of the seven high day temperatures was 69°.

The lowest temperature was 41°.2, on the 21st; on the 24th the lowest temperature was 55°. The mean of the seven low night temperatures was 48°.5.

The greatest range of temperature in one day was 31°, on the 24th; the smallest, on the 25th, was 11°.5. The mean of the seven daily ranges was 20°.5.

The mean temperatures were—on the 21st, 52°.3; on the 22d, 56°; on the 23d, 59°.3; on the 24th, 69°.5; on the 25th, 51°.2; on the 26th, 54°; on the 27th, 55°.7; and these were all below their averages (excepting the 24th, which was 8°.6 above) by 7°.8, 4°.4 1°.4, 9°.9, 7°.2, and 5°.6 respectively.

The mean temperature of the week was 56°.9, being 1°.8 higher than last week, and 4° below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 143°, on the 24th. The mean of the seven readings was 116°.8.

The lowest reading of a minimum thermometer placed on grass was 37°.2, on the 27th. The mean of the seven readings was 44°.

*Rain.*—Rain fell on the 25th, to the amount of 0.12 inch.

ENGLAND: *Temperature.*—During the week ending June 27, the highest at Cambridge was 86°.3, at Blackheath 86°, at Brighton 75°.5; the highest at Bradford was 61°.9, at Leeds and Preston 65°. The general mean was 69°.8.

The lowest temperatures were 38°, at Wolverhampton and Sheffield, 39° at Hull; the lowest at Brighton was 47°.3, at Truro 47°, at Liverpool 45°.4. The general mean was 42°.3.

The greatest ranges were 46°.7, at Cambridge, 44°.8 at Blackheath, 30°.4 at Wolverhampton; the smallest ranges were 19°.7, at Liverpool, 20° at Preston, 20°.2 at Plymouth. The general mean was 27°.5.

The mean of the seven high day temperatures was highest at Blackheath, 69°, at Cambridge 68°.8, at Brighton 67°; and was lowest at Bradford, 59°.3, at Bolton 59°.6, at Preston and Newcastle 60°. The general mean was 62°.7.

The mean of the seven low night temperatures was highest at Plymouth and Brighton, 51°.7, at Truro 51°.3; and was lowest at Bolton, 45°.5, at Newcastle 46°, at Sheffield and Hull 47°. The general mean was 48°.6.

The mean daily range was greatest at Blackheath, 20°.5, at Cambridge 19°.2, Brighton 15°.3, and was least at Liverpool, 10°.5, at Plymouth 10°.7, at Preston 11°.9. The general mean was 14°.1.

The mean temperature was highest at Brighton, 57°.6, at Cambridge 57°.4, at Blackheath 56°.9; and was lowest at Bolton, 50°.7, at Bradford 51°.5, at Wolverhampton and Preston 52°.2. The general mean was 54°.2.

*Rain.*—The largest falls were 1.83 inch at Bolton, 1.32 inch at Truro and Hull; the smallest falls were 0.06 inch at Brighton, 0.12 inch at Blackheath, 0.14 inch at Cambridge. The general mean was 0.90 inch.

SCOTLAND: *Temperature.*—During the week ending June 27, the highest temperature was 74°.2, at Paisley; at Greenock the highest temperature was 66°.5. The general mean was 70°.5.

The lowest temperature in the week was 38°, at Glasgow; at Leith the lowest temperature was 43°.8. The general mean was 41°.5.

The mean temperature was highest at Paisley, 55°.2; and lowest at Greenock, 53°.1. The general mean was 53°.9.

*Rain.*—The largest fall was 0.17 inch, at Edinburgh, 0.04 inch at Perth. The general mean fall was 0.10 inch.

JAMES GLAISHER F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, June 29, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* was dull and rainy in most parts of the kingdom during the first day or two of the period, but subsequently became dry and very fine in the western and north-western districts, and dry, though generally cloudy or overcast at the southern and south-eastern stations. Severe thunderstorms were experienced over France, and on the 28th thunder was heard at Jersey also.

The *temperature* has been below the mean in all districts, the deficit varying from 1° in "England, S.," to 4° in the "Midland Counties," "England, N.W.," and to 5° in "England, N.E.," and "Ireland, N." The maxima, which were recorded on the 24th in the south-east of England and on the 28th elsewhere, ranged from 82° in "England, S.," and 81° in "England, E.," to 68° in "Scotland, N.," and the "Channel Islands." The minima, which were registered either on the 25th, 26th, or 27th, were very low for the season. In "Ireland, N.," the thermometer fell to 32°, and in most other districts to between 35° and 39°, but in "England, S.," 42° was the lowest reading, and in the "Channel Islands" 52°.

*Bright sunshine* shows a striking decrease at Jersey, but a decided increase in most other localities. The percentages of the possible duration varied from 56 in "Ireland, S.," to 24 in "England, N.E.," and to 12 in the "Channel Islands."

The *rainfall* has been a little more than the mean in "England, N.E.," the "Midland Counties," and "England, N.W.," and about equal to it in "Scotland, N.," and the "Channel Islands," but less elsewhere.

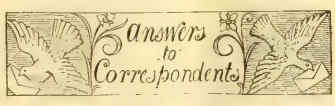
*Depressions observed.*—As the period commenced a rather extensive low-pressure system was shown far to the northward of our islands, while off the east coast of England, and also over the St. George's Channel, subsidiary depressions were observed, the barometer being highest over France. A gradual change in the distribution, however, now took place, the highest readings being transferred to our western and north-western coasts, while over the Bay of Biscay and France depressions appeared. The wind, which was at first south-westerly or westerly, consequently shifted to the northward or north-eastward, and in many parts of eastern England and over the Channel blew freshly and strongly.

## Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

ANEMONE FULGENS DUPLEX.—Will you allow me to ask through your columns if there is a variety of Anemone fulgens duplex worth growing? If so, it seems scarce; at any rate, the variety usually grown as double Anemone fulgens is, to my mind, totally worthless. *Grower.*

PERENNIALS, HERBACEOUS PLANTS: *R.* will be glad if any one will give him the names of the best and rarest. Address, Catton Grove, Norwich.




CATERPILLAR: *A. D.* From *cates*, food; and *piller*, plunderer, old English.

CHRYSANTHEMUM LEUCANTHEMUM AS A SALAD PLANT: *J. C.* We never heard of its being used as a salad.

COLOUR OF FRUIT TREE WALLS: *T. T.* Neither white nor lead-colour, but dull red, with a roughened surface, is found to be best. Black is also conducive to wood and fruit ripening, but is an ugly tint for a wall, but might be tolerated on a wooden fence. Colour the wall when the trees have lost their foliage.

CUCUMBER DISEASE: *J. W.* We are sorry we cannot help you to a cure. It is best to clear out and start afresh. In what state are the roots?—*J. E. C.* See our reply to "J. W."

CYCLAMEN STARTING BADLY, &c.: *R.* The tubers, having bloomed once, required a longer period of rest than you have given them. The plant is, as you know, a hardy one, and although it bears with impunity high temperature for an alpine plant in the stages previous to its first crop of bloom, yet, having once flowered, it ought to have been rested under cool moist conditions till the end of August, at the earliest, but September would be better. By applying greater heat now you will not cure the evils attendant on your faulty practice. Young stock in a growing condition would do you more service in November. Pelargoniums: disbud for the last time six weeks before you want them to bloom. Eucharis amazonica, if of flowering age, ought to have expanded blooms in a month, but longer time is required in the dull months.

DALE'S HYBRID AND ABERDEEN TURNIPS: *A. B.* It would be better to apply to an agricultural authority.

DICTIONARY OF PLANTS AND THEIR CULTIVATION, &c.: *T. C., Trowbridge.* The *Illustrated Dictionary of Gardening*, now being issued by L. Upcott Gill, 170, Strand, London, W.C.

DIGITALIS: *G. S.* The cup-like flower at the end of the raceme is the result of the fusion of several flowers into one. It has been often figured in our columns.

DISEASED PEAR LEAVES: *J. R.* The appearances in question are due to the attacks of a mite, Phytoptus Pyri. We fear there is nothing to be done but to destroy the affected leaves as far as you can.

ELECTRIC LIGHTING, DR. SIEMENS' EXPERIMENTS: *Subscriber.* See *Gardeners' Chronicle* for 1881, vol. xvi., pp. 404, 407, 436, and 1882, vol. xvii., pp. 772, 835. The correspondence has not been published separately.

EMBOTHRIUM COCCINEUM: *F. G. Eliot.* Try some Devon nurseryman.

EUONYMUS WEAK AND DOING BADLY: *C. Marvin.* You can slightly prune back the tips of the shoots now, and apply some weak manure-water. It is possibly growing in a shady place, and thus the wood does not get well ripened, which will partly account for the weak wood made. In early spring cut the shoots hard back, and when it has sprouted again a little, transplant it carefully into well-manured loamy soil, and cut back or pinch, while tender, the young shoots made during May and June. You will then get a bushy healthy plant instead of your straggly weak one that is laid by every shower.

FUNGUS: *J. J. W.* The Stinkhorn Fungus (Phallus impudicus). It might be killed by a solution of carbolic acid. Try, and let us know the result. In any case the nuisance will soon be over.

GRAPES, &c.: *Salopian.* The Vine roots must be in a very poor condition, the leaves sent being thin and small, and, moreover, burnt in places by sun-heat. If the border is as bad as you state, all your ills spring from that cause. The Potato is slug eaten.

NAMES OF PLANTS: *H. W. H., Wilton.* Phalænopsis amabilis.—*C. W.* Lychnis chalcedonica.—*A. O. Walker.* Euonymus latifolius, and Cytisus candicans.—*W. Scott.* Leptospermum scoparium.—*W. Hopkins.* Your flowers were too withered to be recognisable. They are varieties of the larger flowered Spanish Iris.—*A. A. C.* Escallonia Philippiana (figured in the *Gardeners' Chronicle*, July 27, 1878, p. 109).—*Notts.* 1, Vicia cracca; 2, Geranium Robertianum; 3, Ajuga reptans; 4, Listera ovata; 5, Potentilla Tormentilla.—*A. S.* Abelia triflora.—*P. E.* 1, Lilium Thunbergianum; 2, Lilium Martagon.—*J. K.* Hæmerocallis flava.—*H. H. W.* Next week.—*J. B.* 1, Pinus austriaca; 2, P. Cembra; 3, P. Strobus; 4, perhaps P. austriaca. But these are open to doubt; we cannot be sure of the species from the inspection of small sprays, and a named pinetum does not exist in Wellington Street.—*W. R. W.* 1, Orchis palustris; 3, Serapias lingua; 4, Chrysanthemum coronarium; 5, Achillea ageratum; 6, Helichrysum sp.—*Camjee.* Dendrobium secundum.—*Redwood.* Muscari monstrosum.

NOTICE TO QUIT EMPLOYMENT: *A. P.* If the gardener employed has been engaged as a yearly servant, at so much salary per annum, unless he has misconducted himself, a month's notice can be demanded, or its equivalent in money. We do not suppose that taking the wage weekly would set that aside.

ORCHIS LATIFOLIA: *C. W. Strickland.* The bloom-spike was of a rich colour, and very densely flowered throughout.

PANSY BLOOMS, FANCY AND SELF: *F. Roemer.* Smaller than they had been earlier in the season, but still of considerable size and substance; the markings of the fancy varieties being very good and distinct.

ROSES FROM EYES: *H. W. W.* Thanks for communication. Plant will be figured later.

RUBUS, &c.: *A. D. W.* All the plants you mention are shrubs, not herbs. ACROCLADON—*akroo*, the point; *klados*, branch (Greek).

WEIGELAS AND AQUILEGIA HYBRIDS: *J. W.* None of the seedling Weigelias seem to be improvements on existing forms. The Aquilegia is a pretty flower, the habit more erect than usual.

### CATALOGUE RECEIVED.

W. AND J. BIRKENHEAD, Sale, Manchester—North American Ferns.

COMMUNICATIONS RECEIVED.—T. Freeman, Jun.—N. E. Brown.—J. R. Sussexiensis.—A. De Mar.—C. W. Dod. J. D.—T. W.—A. F. B.—J. W.—F. I. G.—Munday.—P. R. Basle—P. B.—J. D.—Otto Forster—C. M.—H. M.—W. L.—C. K.—H. B.—H. Lester, New Orleans.—C. N.

DIED.—Recently, Mr. MUIR, gardener to the Earl of Hopetoun, Hopetoun House, Linlithgow. Mr. Muir was a good gardener and a worthy man, and kept the gardens in first-rate order since he came there about three years ago.

# Markets.

*COVENT GARDEN, July 2.*

SUPPLIES still continue heavy, and, with a glut of Strawberries now reaching us, prices all round are much affected. Trade better. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Cherries, ½-sieve | 4 0–10 0 | Melons, each | 2 0– 4 0 |
| Figs, per dozen | 3 0– 5 0 | Peaches, per doz. | 2 0–10 0 |
| Gooseberries, ½-sieve | 2 0– 2 3 | Pine-apples, Eng. lb. | 3 0– 4 0 |
| Grapes, per lb. | 1 0– 4 0 | — St. Michael, each | 2 6– 8 0 |
| Lemons, per case | 15 0–35 0 | Strawberries, per lb. | 0 3– 0 9 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Artichokes, Globe, per dozen | 3 0– .. | Horse Radish, bun. | 3 0– 4 0 |
| Asparagus, English, per bundle | 1 6– 6 0 | Lettuces, Cab., doz. | 1 0– .. |
| — French, bundle | 1 6– 2 3 | — English Cos, doz. | 1 6– .. |
| Beans, Eng., per 100 | 2 0– .. | Mint, green, bunch | 0 4– .. |
| Beet, per dozen | 1 0– .. | Mushrooms, basket | 1 0– 1 6 |
| Cabbages, per dozen | 1 6– 2 0 | Onions, per bushel | 6 0– .. |
| Carrots, per bunch | 0 6– .. | — Spring, per bun. | 0 6– .. |
| Cauliflowers, Eng-lish, spring, per doz. | 2 0– 4 0 | Parsley, per bunch | 0 4– .. |
| Celery, per bundle | 1 6– 2 6 | Peas, per quart | 1 0– 1 6 |
| Cucumbers, each | 0 6– 1 0 | Radishes, per dozen | 1 0– 2 0 |
| Endive, per dozen | 2 0– .. | Rhubarb, bundle | 0 4– .. |
| Garlic, per lb. | 0 6– .. | Small salading, per punnet | 0 4– .. |
| Herbs, per bunch | 0 2– 0 4 | Spinach, per bushel | 1 6– 2 0 |
| | | Tomatos, per lb. | 1 0– .. |
| | | Turnips, new, bunch | 0 6– .. |

POTATOS.—English, new, £8 to £9; Magnums, old £4 to £5 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0–24 0 | Ferns, in var., dozen | 4 0–18 0 |
| Arbor-vitæ (golden), per dozen | 6 0–18 0 | Foliage Plants, various, each | 2 0–10 0 |
| (common), dozen | 6 0–12 0 | Fuchsias, per dozen | 6 0–12 0 |
| Arum Lilies, dozen | 6 0–12 0 | Hydrangeas, dozen | 12 0–18 0 |
| Begonias, per dozen | 4 0–12 0 | Lilium auratum, per dozen | 30 0–40 0 |
| Bouvardia, dozen | 9 0–18 0 | — longiflorum, doz | 18 0–30 0 |
| Cakeolarias, doz. | 6 0– 9 0 | Marguerite Daisy, per dozen | 8 0–15 0 |
| Carnations, 12 pots | 6 0–12 0 | Musk, per dozen | 4 0– .. |
| Cyperus, per dozen | 4 0–12 0 | Myrtles, per dozen | 6 0–12 0 |
| Dracæna terminalis, per dozen | 30 0–60 0 | Palms in variety, each | 2 6–21 0 |
| — viridis, per doz. | 12 0–24 0 | Pelargoniums, per dozen | 6 0–18 0 |
| Erica, various, doz. | 9 0–18 0 | —scarlet, dozen | 3 0– 9 0 |
| — Cavendishii, doz. | 18 0–30 0 | Rhodanthe, per doz. | 6 0– 8 0 |
| — ventricosa, doz. | 12 0–24 0 | Spiræa, per dozen | 9 0–18 0 |
| Euonym, in var., doz. | 6 0–18 0 | | |
| Evergreens, in var., per dozen | 6 0–24 0 | | |
| Ficus elastica, each | 1 6– 7 0 | | |

CUT FLOWERS. AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | Myosotis, 12 bun. | 2 0– 4 0 |
| Anemone, 12 bunch. | 1 0– 2 0 | Pelargoniums, per 12 trusses | 0 6– 1 0 |
| Arum Lilies, 12 blms. | 3 0– 6 0 | — scarlet, 12 trusses | 0 4– 0 6 |
| Bouvardias, per bun. | 0 0– 2 0 | Picotees, 12 bun. | 4 0– 6 0 |
| Carnations, 12 bun. | 2 0– 5 0 | Pinks, var., 12 bun. | 1 0– 4 0 |
| Cornflower, 12 bun. | 2 0– 4 0 | Primula, double, bun. | 0 9– 1 0 |
| Eucharis, per dozen | 4 0– 6 0 | Rhodanthe, 12 bun. | 6 0– 9 0 |
| Gardenias, 12 blooms | 1 6– 4 0 | Roses (indoor), doz. | 1 0– 3 0 |
| Iris, 12 bun. | 2 0– 9 0 | — coloured, dozen | 2 0– 4 0 |
| Lapageria, white, 12 blooms | 2 0– 3 0 | — per doz. bunches | 2 0– 6 0 |
| — red, 12 blooms | 1 0– 2 0 | — Moss, 12 bun. | 2 0– 5 0 |
| Lilium longiflorum, 12 blooms | 4 0– 6 0 | Spiræa, 12 bunches | 6 0– 9 0 |
| Lilium candidum, 12 blooms | 1 0– 2 0 | Stephanotis, 12 spr. | 2 6– 4 0 |
| Marguerites, 12 bun. | 3 0– 6 0 | Sweet Sultan, per 12 bunches | 4 0– 6 0 |
| Mignonette, 12 bun. | 3 0– 9 0 | Tropæolum, 12 bun. | 1 0– 1 6 |

## SEEDS.

LONDON: *July 1.*—Complete inactivity continues to mark the trade for farm seeds; values consequently remain unchanged all round. Higher prices are asked for French Trifolium, which English buyers do not care to give. Mustard and Rape seed move off slowly on former terms. Rather more money is asked for Canary seed. Hemp seed continues abundant, and very moderate rates are demanded. Occasional orders for Tares still come to hand. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## POTATOS.

The Borough and Spitalfields Markets reports state that supplies of new Potatos are shorter and prices hardening. English will come on the market towards the end of the week. The supply at market was chiefly of Cherbourg rounds, at £6 to £6 10s., and Jersey kidneys at £9 to £10 per ton.—The imports into London last week comprised 3638 boxes 360 cases from Cherbourg, 192 baskets St. Nazaire, 2212 packages Jersey and Guernsey, and 480 cases from Barfleur.


**Weeds. How to Destroy them.—Use** SMITH'S Celebrated WEED KILLER, the cheapest and most effectual preparation ever invented For testimonials and prices address MARK SMITH, Manufacturing Chemist, Louth, Lincolnshire.

A GREAT SUCCESS.

JEYES'

"GARDENER'S FRIEND."

One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can,

**Effectually Removes all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.**

Price, 3s. 6d per Gallon, including drum; 40-gallon Casks, £4 10s. Carriage paid.

**JEYES' SANITARY COMPOUNDS CO. (Limited),** 43, Cannon Street, London, E.C.

BEESON'S MANURE

**Is the best for all Horticultural Purposes.**

**Sold in Tins at 1s., 2s. 6d., and 10s 6d each; also in Sealed Air-tight Bags, containing 1 cwt., 13s.**

*The 10s. 6d. Tins serve as a strong substantial receptacle to refill from the 1 cwt. bags.*

Supplies can be obtained through all respectable Nurserymen, Seedsmen, and Florists in the Kingdom; or, in districts where no Agents reside—Carriage Paid for Cash with Order—direct from the MANUFACTURER,

**W. H. Beeson, Carbrook Bone Mills, Sheffield.**

Testimonials from the Rev. Canon Hole, and most of the leading Gardeners, free on application.

Pure Crushed Unboiled BONES, any size, for Vine Borders, &c. WHOLESALE AGENTS IN LONDON,

**CORRY, SOPER, FOWLER & CO. (Limited).**

NORWEGIAN FISH-POTASH GUANOS.

*Composed of Pure Flesh and Bone of Cod and Herring and Refined Potash.*

A Perfect Fertiliser for Garden and Greenhouse, Lawns and Tennis Courts, Vegetables, Flowers, Exotics and Fruit Trees.

*Prices, carriage paid, on receipt of Post-office Order:*

**28 lb., 6s. 6d.; 56 lb., 10s. 6d.; 1½ cwt., 20s; 2 cwt., 30s; 5 cwt, 60s. Bags free.**

Larger Quantities at Special Prices, for which, and for Analysis, &c., apply to

J. JENSEN & CO.,

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**Manufactory—**

BRETTESNÆS, LOFFOTEN ISLANDS, NORWAY.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

**Quality, THE BEST in the Market.** (All sacks included)

PEAT, best brown fibrous .. 4s. 6d. per sack; 5 sacks for 20s.
PEAT, best black fibrous .. 3s. 6d. „ 5 sacks for 15s.
PEAT, extra selected Orchid 5s. 6d. „
LOAM, best yellow fibrous ..
PREPARED COMPOST, best } 12s. per bush. (sacks inc'uded).
LEAF MOULD, best only ..
PEAT MOULD, „ „
SILVER SAND, coarse, 12s. 3d. per bush., 12s. half ton, 22s. ton.
RAFFIA FIBRE, best only .. .. 1s. per lb.
TOBACCO CLOTH, finest imported .. 8d. lb., 28 lb. 18s.
TOBACCO PAPER „ (Specialité) 8d. lb., 28 lb. 18s.
MUSHROOM SPAWN, finest Milltrack .. 5s. per bushel.
SPHAGNUM MOSS, all selected, 2s. per bush., 6s. per sack.
**COCOA-NUT FIBRE REFUSE** (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,

**WEST FERRY ROAD, MILWALL, LONDON, E.**

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 26 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 2s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

TOBACCO CLOTH and PAPER, finest and most effective, 14 lb. for 9s.; 28 lb., 18s.; cwt. 70s. Special quotations for the Trade.

DENYN, Manufacturer, 73, Rendlesham Road, Clapton, E.

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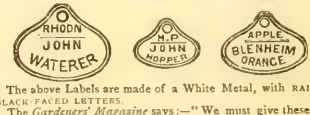
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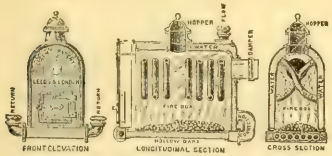

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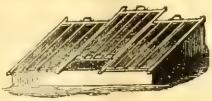


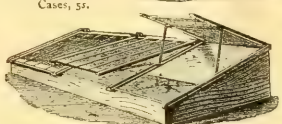
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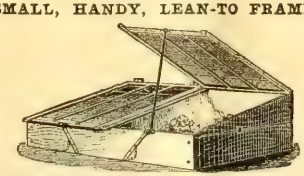


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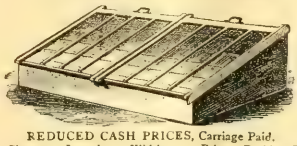
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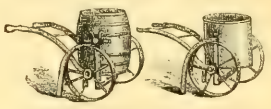
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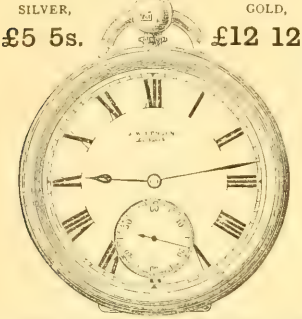
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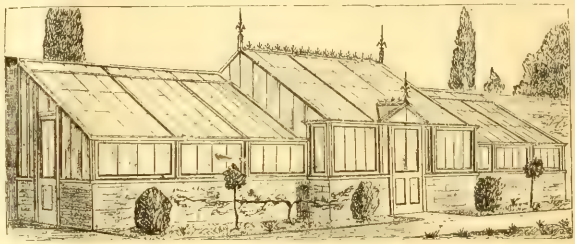
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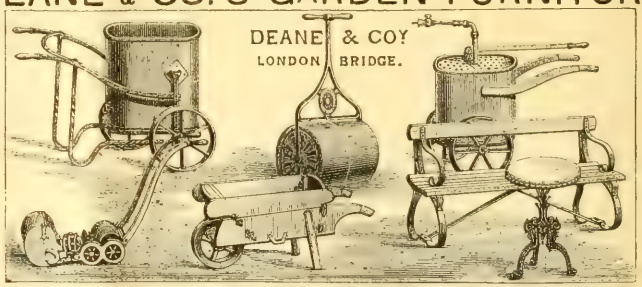
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*THE GARDENERS' CHRONICLE*, Volume XXIII., JANUARY to JUNE, 1885.
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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory; Scientific at 1 P.M., in the Library.
GENERAL MEETING for the Election of Fellows, &c., at 3 P.M., on TUESDAY NEXT, July 14, in the Conservatory.
SHOW of FLOWERS and FRUIT.
N.B.—Exhibitors' Entrance, east side of Royal Albert Hall.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
SHOW of PLANTS, FRUIT, and VEGETABLES, in the Conservatory, on TUESDAY NEXT, July 14. Admission to Fellows at Noon. Visitors to the International Inventions Exhibition admitted free from 1 P.M.

NEWCASTLE-ON-TYNE SUMMER FLOWER SHOW, JULY 22, 23, and 24.
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Cross House Chambers, Newcastle-on-Tyne.

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The ANNUAL EXHIBITION of ROSES will be held on THURSDAY, July 23. Entries Close July 21. Schedules on application.
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NORTHAMPTONSHIRE HORTICULTURAL SOCIETY.
The GRAND SUMMER SHOW will be held at Northampton, AUGUST 3 (Bank Holiday). For best 12 Plants, £12, £6, £3. Entries Close July 25. Schedules and full particulars from
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CARTER'S FIRST PRIZE CALCEOLARIA.—For particulars of Awards, see issue of the *Gardeners' Chronicle* for June 20. Price, in Sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s., Post-free.

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F. V. RASPAIL, the best winter-flowering Scarlet Double GERANIUM for Market.
Price, 8s. per 100, £3 10s. per 1000. Packed and put on rail.
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OUR SPECIAL ORCHID LIST, No. 74, is now out, with List of Mr. Edward Wallace's importations.
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Fine plants, ready for single pots, of the same well-coloured and large-flowered strains we have distributed for fourteen years, 1s. 6d. per doz. 10s. per 100, 22s. 6d. for 250.
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WM. PAUL AND SON invite inspection of their COLLECTION of ROSES, which is now in Fust Bloom, and will continue blooming throughout the summer and autumn. The collection is this year rich in novelties. The Ornamental Trees, Herbaceous Plants, and Fruit Trees are also very fine.
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## SALES BY AUCTION.

**Wednesday Next.**—(Sale No. 6939.)
SPECIAL SALE of ORCHIDS in FLOWER.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 15, at half-past 12 o'Clock precisely, a choice collection of ORCHIDS in FLOWER, including fine forms of Cattleya Wallisi, C. Mendelii, C. Gaskelliana, C. gigas, and C. Mossiæ; Odontoglossum Alexandræ, O. vexillarium, splendid specimens—one with 90 blooms; O. polyxanthum, Masdevallias, Dendrobiums, Oncidiums, &c

On view morning of Sale, and Catalogues had.

**Wednesday Next.**—(Sale No. 6939.)
1000 EUCHARIS AMAZONICA (flowering bulbs).
200 CALANTHE DISCOLOR, just received.
500 CLEMATIS CRISPA, from America.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, July 15.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6940.)
SEEDS, &c.
6000 KENTIA CANTERBUYANA, 5000 K. BELMOREANA, 7000 K. FORSTERIANA, and 12,500 ARECA BAUERI, from New South Wales; 130 lb. of JAPANESE SEEDS in variety; 500 CLEMATIS CRISPA from America, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 16.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6940.)
VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 16, at half-past 12 o'clock precisely, fine importations of L. ELIA ALBIDA (enormous masses), L. ANCEPS (very dark form), L. AUTUMNALIS ATRORUBENS, EPIDENDRUM VITELLINUM MAJUS, ODONTOGLOSSUM MADRENSE, O. ROSSI MAJUS, O. INSLEAYI LEOPARDINUM, O. CRISPUM (ALEXANDRÆ), the best type, O. CITROSMUM, White and Rose varieties, &c., from Messrs. Shuttleworth, Conder & Co.; also two cases containing some splendid masses of LÆLIA PERRINI, SOPHRONITES on blocks, and other ORCHIDS in fine condition, just received direct from Brazil, and about 200 lots of good Imported and Established ORCHIDS, from Mr. J. E. Bonny.

On view morning of Sale, and Catalogues had.

**Tuesday Next, July 14.**
ISLE OF WIGHT, RYDE. "THE BAYS," HAYLANDS.
To Florists, Gardeners, Private Growers, and Others.

MESSRS. E. MARVIN AND SON will SELL by AUCTION as above, at 11 o'Clock precisely, the valuable collection of STOVE and GREENHOUSE PLANTS, PALMS, FERNS, RARE ORCHIDS, &c., late the property of Lady Grey, deceased, without reserve.

Catalogues 6d. each, of the Auctioneers. On view the day previous.—Auction Offices, 9, Union Street, Ryde.

**Pontamman, near Ammanford, Carmarthenshire.**
IMPORTANT and UNRESERVED SALE of Rare and Valuable FLOWERS, FERNS, PLANTS, GARDEN REQUISITES, &c.

MR. W. N. JONES has been favoured with instructions from Mrs. Morris (who is leaving Pontamman), to SELL by PUBLIC AUCTION, on the Premises, on WEDNESDAY, July 15, at half-past 1 o'Clock precisely, the whole of her Valuable and Choice Collection of
FLOWERS, FERNS, PLANTS, &c.,
comprising Camellias, Palms, Maidenhair and other Ferns, Show and Zonal Pelargoniums, Amaryllis, Daphnes, Begonias, Abutilons, Fuchsias, Azaleas, Corcinillas, Chrysanthemums, Cinerarias, Cyclamen, Petunias, Gloxinias, Primulas, Calceolarias, Lobelias, &c.; together with the whole of the Garden Seats, Tools and Requisites, Lawn Tennis and Croquet Sets.

The whole of which will be fully described in Catalogues, to be had from the Auctioneer, Tirydail, Ammanford, one week prior to Sale. Pontamman is distant from Ammanford Railway Station ½ mile, and from Duffryn 1 mile. Credit on conditions.

Auctioneer's Offices, Ammanford, Llandilo, and Cwmamman.

**Tuesday Next.**
ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, July 14, at half-past 12 o'Clock precisely, a large consignment of ESTABLISHED ORCHIDS, received direct through a Gentleman in Liverpool, to be sold, without reserve, consisting of splendid masses of Cattleya citrina, Lælia anceps, Epidendrums, Chysis bractescens, Lycaste aromatica, L. Deppei, and others; also two small collections of ESTABLISHED ORCHIDS from private Gentlemen who are giving up their cultivation, amongst which will be found several fine pieces of Aërides, Dendrobiums, Oncidiums, &c.

On view morning of Sale, and Catalogues had.

**Eltham Park, Eltham, Kent.**
IMPORTANT UNRESERVED SALE of a valuable COLLECTION of STOVE and GREENHOUSE PLANTS, ORCHIDS, &c.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Executors of the late Thomas Jackson, Esq., to SELL by AUCTION, on the Premises, Eltham Park (fifteen minutes' walk from Eltham Railway Station), on THURSDAY, July 16, at 12 o'Clock precisely, a valuable Collection of well-grown STOVE and GREENHOUSE PLANTS, including many fine specimens, consisting of several fine Camellias and Azaleas, Greenhouse Rhododendrons, splendid examples of Eucharis, Dracænas, Crotons, Cycas revoluta, Anthuriums, Palms, Ferns; an assortment of ESTABLISHED ORCHIDS, amongst which are several large examples including Peristeria elata, Dendrochilum filiforme, Aërides, and Dendrobiums in variety, Cattleya Skinneri and C. speciosissima, Vanda tricolor and V. insignis, &c.

May be viewed day prior to Sale. Catalogues may be had of Mr. WAKELIN, the Head Gardener, on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

**Friday Next.—New Orchids**
ANGRÆCUM LEONI, a magnificent novelty, for the Cattleya-house.
ANGRÆCUM SCOTTIANUM, rare and striking.
ANGRÆCUM FUSCATUM, long spikes, covered with flowers.
ANGRÆCUM ROSTELLARE, Pogonia Barklyana, Eulophia meyi-togbiæ.
EULOPHIA PULCHRA, LISSOCHILUS STYLOSUS, L. JULAN, &c

ANGRÆCUM LEONI.—This is a most wonderful novelty, and, next to Vanda Sanderiana, we consider it the finest Orchid we have had the pleasure to offer. It was discovered and collected by Mr. Leon Humblot in the Comoro Islands, growing at an altitude of 5000 feet. It should be grown in the Cattleya or the Dendrobium house, and it will be a plant of very easy culture; the plants, although only just imported, are beginning to grow.

ANGRÆCUM LEONI is a serious rival to A. sesquipedale, surpassing it, we consider, not only in its extraordinary and very beautiful form, but in its adaptability to the Cattleya-house, its cool habit, and great floriferousness, some of the plants actually showing up to fifteen flower-spikes, and each bearing six to ten of the large pure white flowers.

Our Woodcut gives the exact size of the plant. The leaves are fleshy, and are quite a remarkable feature, standing boldly sideways, and are so arranged as to form a perfect half circle, in front of which the flower-spikes arrange themselves altogether it is a remarkable and grand thing, and nothing like it is in cultivation.

Professor Dr. REICHENBACH says in his description:—"The flowers may be well compared to Angræcum sesquipedale—a very stately thing, taking little space, bearing great flowers. Is not this sufficient to make beat a collector's heart with satisfaction?"

The importation is simply grand, and every plant in extra condition. See Flowers and Woodcut.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander to SELL the above and other very valuable ORCHIDS on FRIDAY NEXT, July 17, at half-past 12 o'Clock precisely, at their Central Sale Rooms, 67 and 68, Cheapside, E.C.

On view morning of Sale, and Catalogues had.

**Flowering Orchids.—Special Sale**

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS, in Flower and in Bud, will take place on TUESDAY, July 28, for which they will be glad to receive Notice of Entries as early as possible.

**Farnborough.**—(Sale No. 6212.)
Five minutes from Aldershot Camp Railway Station.
*Re* Edward Smith, deceased.

TO BE SOLD, with Possession, the NORTH CAMP NURSERY, nearly 17 Acres, with Dwelling-house, Stable, Cart-shed, and Greenhouse standing thereon. May be carried on as a Nursery or a Market Garden; but the Estate having 2000 feet available frontage will ultimately be valuable for building. Price £7400.

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FOR SALE, a SEED BUSINESS. Small but old-established and compact. £200 for Stock, Fixtures, and Goodwill. In country place. Would suit delicate man.

Address, COMFORT, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

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2 miles from, and 1 mile from a Railway Station on Main Line.

TO LET, with possession at Michaelmas next, a productive MARKET GARDEN and ORCHARD of about 5 Acres, on which are four long Glass-houses heated with Hot-water Apparatus on the newest principle. Also a comfortable Dwelling-house, Stables, Barns, Cowhouses, Piggeries, and other Outbuildings. Excellent water supply. A good business now being carried on.

Apply to CLOWES AND NASH, Auctioneers and Estate Agents, Bank Chambers, Norwich.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW ORNAMENTAL PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s. BARR AND SON, King Street, Covent Garden, W.C.

**Ferns.—Ferns.—Ferns.**
TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20s. per 100, £9 per 1000.

ADIANTUM LE GRANDE, nice plants, ready for potting on, 30s. per 100.

ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40s. and 50s. per 100.

The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and for his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same protection and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his free on demand.



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JAMES DICKSON AND SONS,
108, EASTGATE STREET, CHESTER.

S. SHEPPERSON, FLORIST, Prospect House, Belper, Derbyshire, begs to offer the following, of which he makes a specialty:—

PRIMULAS! PRIMULAS!! PRIMULAS!!!—Grand premier prize strain of the finest new colours, as White, Carmine, Rose, Salmon, Crimson, Mauve, &c.; fine large trusses and beautifully fringed flowers. Strong plants, to bloom well, 1s. 3d. per dozen; extra strong, 1s. 6d., all free.

CINERARIAS! CINERARIAS!! CINERARIAS!!!—Bull's celebrated prize strain, dwarf compact habit, and most brilliant colours; cannot possibly be excelled. Good plants, 1s. 3d. per dozen; extra strong, 1s. 6d., all free.

CYCLAMEN! CYCLAMEN!! CYCLAMEN GIGANTEUM!!!—Grand prize strain, warranted. All the finest new colours. 1s 6d., free; extra strong, 2s., free.

S. SHEPPERSON, Florist, Prospect House, Belper, Derbyshire.

**To the Trade only.**

E. H. KRELAGE AND SON, NURSEYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale Catalogue (No. 379A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1885-86, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out of this specialty. The prices of Hyacinths in general are considerably lower than before. Prices of Tulips and other Bulbs, too, are in many instances inferior to former quotations. German and French editions as well as a separate English edition for America, are published.

# ROSES.

## The Largest Rose Nurseries in the World.

A visit is respectfully invited. No description can convey the slightest idea of the magnificent stock now in flower. They will continue in their beauty until October.

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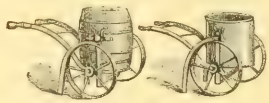
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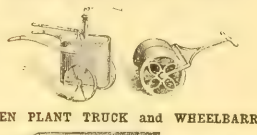
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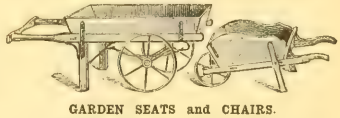
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*Priced Descriptive LIST of all kinds of Seeds for present sowing, gratis and post-free to all applicants.*
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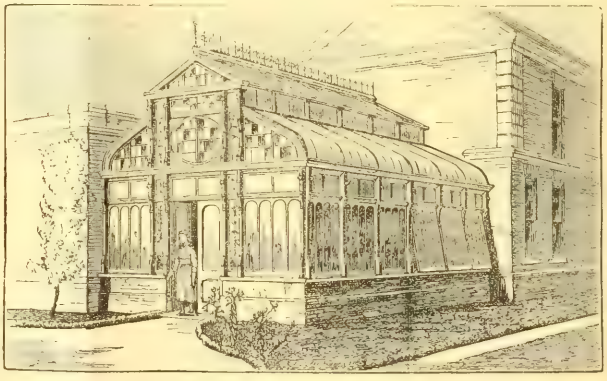
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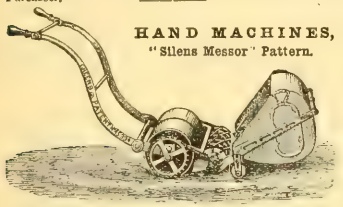
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**"Silens Messor" and "Multum in Parvo"**
# LAWN MOWERS

Have been proved to be the best, and they have carried off every Prize in all cases of competition.

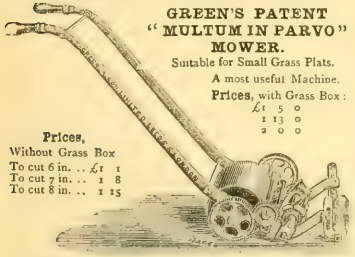
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| To cut 8 in. wide .. | £2 10 0 | To cut 16 in. wide .. | £6 10 0 |
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**"MULTUM IN PARVO" MOWER.**
Suitable for Small Grass Plats.
A most useful Machine.
**Prices,** with Grass Box:
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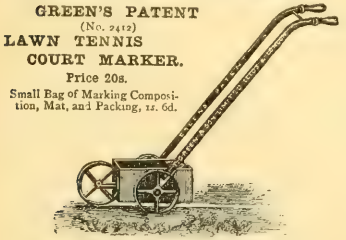
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It is simple in construction, easily adjusted, is well adapted for mowing small plats, cutting borders, verges, round flower beds, the edges of walks, &c. It is a most handy, serviceable machine, and very easy to work.



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With Chain and Wheel Motion.
A most useful Machine.
**Price, £1 16s.**
Packing Case, 2s.

SIZE,
8 inches wide by
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Small Bag of Marking Composition, Mat, and Packing, 1s. 6d.

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THE
# Gardeners' Chronicle.
*SATURDAY, JULY* 11, 1885.

## TRING PARK.

MR. DISRAELI was never tired of asserting—as he did most effectively in his famous chapter on the Jews, in the *Life of Lord George Bentinck*—the genius and influence of the chosen race, scattered though they be. It is interesting to reflect that Isaac Disraeli's place of residence and final rest was at Bradenham, and Lord Beaconsfield's after forty years' residence and ownership, at Hughenden, in the same county of Bucks where the chiefs of the house of Rothschild, after the two Disraelis, set up their roof-trees. All, in fact, of that great house who were resident in England, save the late Baron Lionel de Rothschild, of Gunnersbury, settled in or near the Vale of Aylesbury, and within or on the confines of Buckinghamshire. Faithful cohesion among kindred implies that they possess virtues of no common order and much considerate charity, and therefore it is pleasing to record that five members of a most united family, respected by all, reside in close proximity. It is sometimes said, in such cases, that neighbours may remain very good friends provided they see as little of each other as possible. But the "satirical knave" who said that was not describing the Rothschilds.

From the leads of Mentmore Towers, formerly the residence of the late Baron Meyer de Rothschild, now that of Lord Rosebery, the husband of his only child, most of the seats I have referred to are actually visible. They are Waddesdon (see *Gardeners' Chronicle*, 1885, xxiii., p. 820), the princely place of Baron Ferdinand; Halton, where Mr. Alfred has laid out a mint of money in house and gardens; Ascott, near Leighton Buzzard, where Mr. Leopold resides, and keeps the staghounds and manages the racing stud which was formerly at Mentmore; Aston Clinton, owned by the late Sir Anthony, from whom Sir Nathaniel inherited his baronetcy, and still occupied by his widow; and, finally, Tring Park, the residence of the head of the family, Sir Nathaniel, whom we must now call Lord Rothschild. Tring Park is just within the borders of Herts, and it comes last, and is the least on this list of the country seats of the Rothschilds. The head of the firm and family has not yet cared to encumber himself with the greatest nuisance that any man has ever yet invented for his own discomfort—a tremendous house. He has lived for years in an unpretentious mansion, well situated for him in a delightful part, one hour from Euston Square, and of comparatively moderate size. There are signs, however, that Aladdin has rubbed his lamp and bid the genie enlarge his dwelling, for a new house is manifestly growing and the old one is being absorbed. Handsome new stables have been already built, and other improvements are in progress, especially in those departments which Mr. Hill, the head gardener, presides over with so much skill.

The Park and home woods, which are all "kept" and under Mr. Hill's control, contain 300 acres, beautiful undulating acres, close to

the town of Tring. You turn out of the street of Tring by a very modest entrance, and follow a carriage-drive uphill and among trees, everything looking very snug, and very much in the style of a local banker, or of a brewer who has prospered, or even of a country squire, till presently you pass the stables, and arrive at the rear of a house.

"Good gracious!" you exclaim, "why, if a brewer lives here, he must own something better than public-houses—to wit, a mind of marked refinement. See what improvements are going on?" One would know merely by those fine-leaved Ivies covering a new wall, with Golden Queen auriferous among them, that some one out of the common order must be in residence here with appreciative landscape gardening eyes. A broad new carriage drive leads to where a grand entrance to the house is evidently meditated, and on the right of this approach is a bank of evergreens. It was planted only eighteen months since with large shrubs of Yew, Bay, Box, Aucuba japonica, and other things, which have been so well watered and managed that they have not winced.

Passing round the house you will find a lawn, much enlarged lately, and clipped about by a very unlevel park, beautifully planted with clumps of Limes, animated by deer and short-horns, and enclosed by masses of encircling Beech woods on the high ground which bounds the view.

Except on the north side, where the eye may range from the newly projected front-door, far over the country towards Mentmore Towers and the smooth turfed hills of Ivanhoe, this beautiful place is quite secluded. It is not overlooked by a single road, and its near neighbour, the town, might be a hundred miles distant. Among the proofs of outlay, as well as of excellent taste, are the numerous costly shrubs around the house, including the bushes of Golden Yews grown from cuttings, as well as the much rarer seedlings furnished with leaders, and growing into trees. I daresay thousands have been expended in shrubs lately, and they are all looking well, not omitting a number of Golden Yews planted only two months since. Numbers give only a mechanical idea of works of planting like those which Mr. Hill, with his men and long hose, has brought to such a successful issue; but it may please nurserymen, and make their mouths water, to repeat that 500 Golden Yews, costing a great sum, have been planted here lately, and 10,000 bulbs of Gladioli set in the shrubberies to enliven them. The owner loves to watch the progress of the shrubs, knows their names and qualities, and takes delight in that newly planted long broad clump which fringes the lawn, and already shows superb and glowing with gold from across the path. I can only say that it is filled with costly "things," and in standing before that largest Japanese specimen which is many times repeated in smaller sizes, one cannot help counting the cost. It is the beautiful Retinospora obtusa nana aurea, and is worth seven guineas. The double Spanish Gorse is used as an edging of this grand clump of shrubs, and I observed several specimens of weeping Yew on stems 1 foot or more high, and then spreading horizontally.

The kitchen gardens are on the roadside near or in the town, and will soon be entirely shut in by walls, and enlarged from 3 to 6 acres. The houses are numerous, and the management unsurpassed. Five houses are devoted to Orchids, which have been described by specialists from time to time in the *Gardeners' Chronicle*. They were generally out of bloom at the time of my visit, but not so the Carnations in two houses devoted entirely to that flower, one of them to the favourite "Malmaison." The foliage plants—Crotons, Caladiums, Alocasias, Dracænas, and others—all gathered together in one house, were superb, and the varieties of Coleus and Begonia in another house looked charmingly bright. I believe that a London firm decorates the London house so far as plants in pots are concerned; but the cut flowers are sent from Tring, and two houses of Adiantum cuneatum are required for the growth of Fern foliage by the bushel. There are five vineries where Muscat of Alexandria Grapes, of five years' growth, are as good as can be, and the adjoining Black Hamburghs, too, having this year the largest berries yet produced here. In the Fig-house the first crop was just over, and the second coming in. The Orchard-house here might be imitated at lesser establishments with advantage, being simple and comparatively inexpensive. It consists of 135 yards of wall, enclosed by glass, having hot-water pipes to keep the temperature above freezing, and making all the wall fruit—Apricots, Peaches, Pears, and Plums—perfectly secure. The width is sufficient for a stage in front, where several transformation scenes occur during the year. At present the stage is partly devoted to fruits in pots, and as soon as these have ripened the double pots containing them will be plunged in the open ground till next spring. They will be followed presently by pot Roses and Tomatos, and later on autumn Chrysanthemums will appear upon the stage. In short, a practised gardener finds that the rotations he can introduce on a stage of this sort are endless, and most profitable. I suppose all sorts of half-hardy bedding plants may be included, as well as Strawberries.

I must not omit to mention "the cottage," not far from Mr. Hill's house, in the kitchen garden, where six unmarried gardeners are made comfortable; nor the orchard of pyramid Apples in front of it, in an unsuitable light soil 18 inches deep, with a subsoil of gravel. The trees are about 10 feet high, and they are pruned as the fruit swells, and not allowed to increase in height. Apples can be grown anywhere by culture, but the crops must be gained by manure on soils like this, and only small trees are adapted to them. *H. E.*

## THE GENUS ARCTOTIS.

(Continued from p. 14.)

*Arctotis leptorhiza.*—In the *Gardeners' Chronicle* of September 1, 1883, this annual species was mentioned as one of the most striking Composites then in flower in the herbaceous department at Kew; at the same time I had beautiful pot specimens from seed which I had received as of A. breviscapa, under which name it was offered by Mr. Thompson, of Ipswich, and other seedsmen. It is thus found to be valuable, both for the greenhouse and the open ground. De Candolle, whom Dr. Harvey has frequently followed apparently in this genus, distinguishes two varieties under A. leptorhiza, the A. breviscapa of Thunberg and his own longiscapa, the first as having scapes shorter than the leaves, and the latter as having scapes longer than the leaves. The plant I have belongs to the latter variety, longiscapa, and the name breviscapa, under which the seeds were received, is therefore wrong. The plants grown at Kew and Cambridge are, I believe, identical. There is no figure, and I am unable to compare with specimens, but Mr. Baker kindly confirms me in the name longiscapa. Seeds of another kind are offered with the name A. grandiflora, but I have never found them capable of germination.

ARCTOTIS LEICHTLINIANA, *n. sp.**

The subjoined description applies to a plant received from Mr. Max Leichtlin, who obtained it from the Palermo Botanic Garden as A. speciosa—a name that belongs to a variety of A. acaulis. There was much interest in getting this supposed A. speciosa, seeds of which I tried without success; and as we are indebted to Mr. Max Leichtlin for distributing it, and finding it undistinguished, I name it in compliment to him. Professor Oliver kindly examined this plant for me, and said he thought it must be referred to the species I had forwarded before, which was A. aureola. From a garden point of view, at least, it must, I think, be regarded as a distinct species, differing entirely in habit, coloration, and relative proportion in size of the parts of the flower, and in constitution. It strikes freely from cuttings, and is an easily grown plant, while A. aureola can only with difficulty be grown from cuttings, and is cultivated less easily. The coloration of the flower might be regarded as a small matter, but these plants have not been "broken" or worked up for our instruction by the hybridist, and it is combined with other points of difference. It differs from A. grandiflora, Ait., which has a tricoloured ray, though to that also it is nearly allied. This plant has very pretty flowers, but its lax habit is not in favour of its becoming popular.

The following kinds have been cultivated, and all are worth reintroduction. The attention of friends at the Cape may here be drawn to them:—

*A. acaulis*, Bot. Reg., ii, 122.—A nearly stemless perennial with long petaloid radical leaves, which are lobed and green above, covered with rough pile which peels off. The flower-heads are large, with golden rays, orange below.

*A. aspera*, Bot. Reg., t. 34.—Half shrubby, hispid, and scabrous, with deeply incised leaves; the lobes obtuse. The flower-heads are similar to those of the cultivated variety arborescens, but are apparently larger.

*A. cineraria*, Jacquin, Hort. Schœnbrun., ii, 174.—Stem half shrubby, branches tomentose, leaves small, pinnatifid. The flower-heads are yellow rayed without a ring about the black disc.

*A. cuprea*, Jacquin, Hort. Schœnbrun., ii., 176.—Referred by Harvey as a variety of A. aspera. It is shrubby, the leaves are pinnatifid with long narrow spreading lobes, which are toothed and undulated; the flower-heads are large, with orange-coloured rays, coppery below.

*A. decumbens*, Jacquin, Hort. Schœnbrun., iii., 381.—Stem stout and decumbent; leaves elliptical, strongly three-nerved, dentated, not lobed; flower-heads large, with yellow ray, bronze beneath.

*A. decurrens*, Jacquin, Hort. Schœnbrun., ii., 165.—Stem diffuse or erect, leaves short, petioled, lanceolate or elliptic-oblong, with slight tendency to form lobes. The ray-florets are white, with purple at the base, forming a ring about the disc.

*A. fastuosa*, Jacquin, Hort. Schœnbrun., ii., 166.—Said to be annual; stem hollow, leaves elliptic-oblong, coarsely toothed or sinuous, pilose on both sides. The flower-heads are large, with orange ray-florets and a deep red ring around the disc. One of the handsomest.

*A. glaucophylla*, Jacquin, Hort. Schœnbrun., ii., 170.—Allied to A. acaulis; stem short, with leaves crowded, pinnately divided into many lobes. The flower-heads are ornamental, with a clear orange ray.

*A. grandiflora*, Jacquin, Hort. Schœnbrun., iii., 378.—Stem suffruticose, leaves pinnatifid, with narrow lobes. The flower-heads are very large and handsome, the ray-florets of orange colour, each with a dark basal mark, forming a ring around the disc. Apparently near to A. aureola, but it differs in having the ring, and the lobes of the leaves are much narrower.

*A. leucanthemoides*, Jacquin, Hort. Schœnbrun., ii., 164.—Apparently annual. The branches are sparingly leafy, the leaves are obovate and toothed, the upper ones lanceolate and entire. The flower-heads have numerous white ray-florets, suffused with pink beneath.

*A. maculata*, Jacquin, Hort. Schœnbrun., iii., 379; Bot. Reg., ii., 130.—Suffruticose, very distinct in the colour of the ray-florets, which are white, tipped with orange, and orange below. The leaves are in form similar to those of A. aspera, but much softer.

*A. reptans*, Jacquin, Hort. Schœnbrun., iii., 382.

* Suffruticose and lax in habit, 3 feet high, not hispid. Stems elongate, furrowed, covered with thick white tomentum. Leaves 2 to 3 inches long, obovate, or oblanceolate, petioled, pinnatifid and toothed, not auricled or decurrent, tomentose below, arachnoid above; lobes oblong, slightly lobulate, with pointed or angular apices. Flower-heads 2½ inches in diameter, or when pressed 3½ inches; upper free part of outer involucral scales spreading in bud, but little recurving in full flower, less than half a line broad—involucre otherwise as in A. aureola; ray-florets golden-yellow, with dark basal mark, below flaked with red, 1¼ inch long, 4½ lines broad. Most nearly allied to A. aureola, which has short and stout stems, clothed with purplish tomentum; lobes of leaves always rounded at the apex; flower-heads 4—4½ inches in diameter; outer scales of involucre recurving in bud, free portion one line broad; ray-florets orange coloured, without basal mark, 2 inches long, 4½ lines broad.

—Much branched and dwarfed; leaves obovate, obtusely lobed or toothed. The ray-florets are creamy-white, orange-coloured below, and a dark ring is formed by the basal marks around the disc.

*A. revoluta*, Jacquin, Hort. Schœnbrun., ii., 173.—Suffruticose, branches tomentose, the leaves with distant lobes. The flower-heads are large, with orange ray-florets, each with a dark basal mark.

*A. rosea*, Jacquin, Hort. Schœnbrun., ii., 162.—Stemless, apparently annual, compact, with a number of white sinuate-pinnatifid leaves, the lobes short and obtuse. Very pretty on account of the pink ray-florets.

*A. speciosa*, Jacquin, Hort. Schœnbrun., ii., 161; Bot. Mag., xlvii., 2182.—A distinct form of A. acaulis, with many-lobed leaves, and handsome flower-heads with showy reddish ring.

*A. squarrosa*, Jacquin, Hort. Schœnbrun., ii., 177. Rather coarse-growing, but very pretty, having numerous flower-heads, with orange rays lineated with darker colour. It is well marked by this coloration. Is placed with A. grandiflora by Harvey under A. lævis.

*A. tricolor*, Jacquin, Hort. Schœnbrun., ii., 159; Bot. Reg., ii., 131.—This is allied to A. acaulis, to which Harvey refers it, but it is probably quite distinct. It differs in foliage, not having a dense rough pile. The flower-heads are large and showy, with white ray florets, purple beneath, and a dark ring surrounding the disc.

*A. undulata*, Jacquin, Hort. Schœnbrun., ii., 160.—This, no doubt, is a form of acaulis. It is a fine plant with rather coarse leaves, and large bright orange flowers.

These names I take as given with the figures referred to, because Harvey's arrangement in the *Cape Flora* does not give the distinctions necessary from a garden point of view, the good and bad being often reduced under one name. It is unfortunate that real differences, such as Harvey no doubt saw, should not have been pointed out, because it is apt to be inferred that the plants are identical. This aggregation of more or less distinct forms is a difficulty, I am told, in the use of some foreign Floras on the spot, because the segregates of a species are often found to be very different practically, and in need of some distinction. This difficulty, however, could only be fully remedied by the cultivation of all the plants, which is impossible, and probably the genus Arctotis can only be well understood by cultivation of the various forms. Allied, but really distinct plants, appear sometimes to mimic each other, just as those do that belong to different natural orders, and probably this mimicry is all the more likely to occur on account of relationship. In Jacquin's *Hortus Schœnbrunensis*, omitting those now referred to other genera, no less than twenty-seven kinds are figured, and without doubt are all more or less distinct, though Harvey reduces many to other species without distinguishing them as varieties. Twenty-one kinds are recorded in the *Hortus Kewensis* of 1813, and thirty species are allowed in the *Genera Plantarum*.

The late Mr. Harpur-Crewe intended to have written notes upon this genus, but his illness prevented him from so doing, and before his death memoranda were forwarded to me which Mr. W. E. Gumbleton had made for him from the nearly complete series of Arctotis figures in his library. *R. Irwin Lynch.*

## THE TWAY-BLADE (LISTERA OVATA.)

PERHAPS nowhere does this inconspicuous, but by no means uninteresting, Orchid grow so strong and stately as in rather damp shady woods, with a southern exposure. This was forcibly brought to my mind but the other day, when meeting with a large number of these plants growing most luxuriantly under the above conditions. Several of these specimens measured 30 inches in height, with large ovate leaves 7 inches by 6 inches, and strong erect spikes, on which I counted upwards of eighty flowers.

The flowers were remarkably viscid, and contained a large supply of nectar—no doubt for the purpose of enticing insects for cross-fertilisation, as I have repeatedly noticed that in several of our Orchidaceous plants a greater number of seed-bearing capsules are produced by plants growing in the open than those in a woodland. This seems strange, and has certainly puzzled me very much to account for, but it is nevertheless a fact. When examining the wonderful structure and movements of the organs of fertilisation in this Orchid—which any one who is interested in this subject would do well to note—I was forcibly reminded of him who has done so much to enlighten us on this subject, whose statue was the other day unveiled in the Natural History Museum, and for whom none felt a more sincere regard than the true horticulturist. *A. D. W.*

# New Garden Plants.

### AGLÆONEMA ACUTISPATHUM, *N. E. Brown, n. sp.*

STEM erect, ½ inch thick, smooth, dark green. Petioles 3—4½ inches long, vaginate for ½—⅔ their length, but only sheathing the stem at the base, green, the evaginate part terete, with a slight flattening on the face. Lamina 6—8 inches long, 2½—3½ inches broad, elliptic-ovate acuminate, a little oblique, base rounded and slightly cuneate at the petiole, apex gradually attenuated into a fine point about an inch long, margins undulate, uniform dark green, paler beneath. Midrib and veins impressed above, prominent and rounded beneath; primary lateral veins 4—6 on each side of the midrib, ascending, curved. Scape about as long as the petioles, compressed, smooth, dark green. Spathe 3½ inches long, 1½ inch broad, ovate-lanceolate acuminate, widely expanded (as in A. commutatum), a little decurrent but not at all convolute at the base (in bud it is terete, gradually tapering to a very fine point), light green. Spadix sessile, 1¾ inch long, female part about ¾ inch long, the rest male.

This species is allied to A. commutatum and A. modestum, but distinct from either. Its native country is a little uncertain. It was presented to the Royal Gardens, Kew, by Mr. Knaggs, from whom I learn that it was bought in Hong Kong, and believed to come from the neighbourhood of Canton. Mr. Knaggs further writes that "they seem to be hardy, and some of them flowered at sea, on the voyage home, in water, and two of them continued to live in water in our back garden (in London) for some considerable time." *N. E. Brown.*

### TENARIS ROSTRATA, *N. E. Brown, n. sp.*

Hitherto this Asclepiadaceous genus has consisted of but one species, a native of the eastern frontier of Cape Colony; now we have another from Usagara, in East Tropical Africa, near Zanzibar, the tuber of which was sent home by M. Last and has just flowered at Kew. It has quite the habit of the original species, but is at once distinguished when in flower by the lobes of the corolla being nearly acute, instead of truncate, and by the segments of the inner corona having their apices prolonged into subulate beaks. The following is a description of the plant:—Tuber depressed—globose, [illegible] inch in diameter; stem 18 inches high, slender, about ⅛ line thick, erect, green, with about four pairs of distant linear acute leaves, 2—3 inches long, ⅛ inch broad, arched, spreading. Peduncles 1 (—2?) flowered, 3—5 lines long, solitary from the side of pairs of small bracts, arranged along the terminal part of the stem in a racemose manner. Pedicels 2 lines long; calyx ⅛ inch in diameter, lobes lanceolate, acute. Corolla ⅜ inch in diameter, rotate, lobes 4 lines long, 1½ line broad, linear-oblong, subacute, very spreading with revolute margins, whitish, densely covered towards the base of the lobes with minute purple dots, giving the flowers a pinkish hue. Outer corona of five small, concave, broadly ovate, bifid, yellowish lobes, with two minute teeth on their inner face; inner corona of five erect or slightly recurving, subulate, pinkish segments, slightly gibbous on the shoulder. *N. E. Brown.*

### VANDA DENISONIANA (*Bent., Rchb. f.*) VAR. HEBRAICA, *n. var.*

Mr. B. S. Williams kindly sends a flower of this fine variety. The sepals and petals are sulphur-coloured on both sides, darker inside, where they are covered with numerous spots, transverse, short bars, and figures comparable partly to a Greek lambda (Λ). Spur orange inside. Anterior part of the blade of the light olive-green. I had never seen this alive, though I knew its existence from a sketch prepared by Mr. Ernest Rimann, Mr. F. Sander's fortunate traveller. *H. G. Rchb. f.*

## THE AMARYLLIS.

THE present season has marked a decided advance in the culture and position of the Amaryllis. Its history was carefully written, and its culture well understood by the Hon. and Rev. William Herbert so long ago as 1837. What a pity that some enthusiast possessing Herbert's love for the flower, his ability and perseverance, was not ready to take his place, and carry on the work where the master left it. Such varieties as Herbert possessed were carefully cultivated in his own garden. Being a keen hybridist, he raised some distinct and good varieties by cross-breeding, most of them, if not all, being now lost to cultivation. The type of flower of which Hippeastrum pardinum is a representative species was unknown in the time of Herbert, but to that species and the more recently introduced H. Leopoldi we owe the beautiful hybrid forms recently seen at our exhibitions. The very handsome form, Empress of India, also introduced into English gardens by Messrs. Veitch, of Chelsea, has worked even a greater revolution in this genus than either of the above species. The taste of the flower-loving public is all for large handsome varieties of what may be termed the florist's type, and doubtless they form the most beautiful decorative objects for our greenhouses and plant stoves. There are other forms interesting to botanical science which might well be taken in hand by the hybridist. Some of the species are conspicuous for their long tubes, the flowers more elegant perhaps though not so showy as the modern garden varieties. The South American species, A. solandræfolia, for instance, is the most distinct of the long-tubed species. The flowers, 8 inches in length, are green and yellowish-white. A variety of this described by Herbert had flowers 10½ inches long, faintly striped outside with red; tube purplish-red. Dean Herbert raised many hybrids in his garden at Spofforth, the produce being distinguished by the names of both species, examples of which were aulica × vittata, stratifolia × vittata, solandræfolia × Johnsoni. Several crosses from A. reticulata were produced by this zealous cultivator, such as bulbosa reticulata, reticulata bulbulosa, and aulica reticulata. At this early period A. reticulata was cultivated in two varieties, one with green leaves and the other with stripes, as grown in our gardens at present. The striped leaved variety of reticulata has been met with frequently in a wild state in Brazil, not so that with green leaves, which is also lost. It is necessary to trace the different varieties to their source before we can be sure of the best method of culture to be pursued. Some of the cultivated species are almost, if not quite, greenhouse plants, although they may require stove-heat to bring them up to the flowering stage. Those species originally introduced from the Cape of Good Hope, such as A. vittata, are representatives of this type. A. reticulata is quite an evergreen, and succeeds well in a Cucumber-house all the year round, and it ought not to be quite dried up at the roots. The cultural remarks in the "*Amaryllidaceæ*" are evidently founded on a large and successful experience; and I am sure most successful cultivators would endorse the following as being good advice for the present time. Herbert says:—"The principal causes of the sickly state of Hippeastra in cultivation are too light a soil, want of water at the roots, when the leaves are pushing, and too much water after." His experience also confirmed him as to the value of small pots. "I have had," he says, "seedlings of crosses with H. vittatum which sent up two stems of blossoms from a pot scarcely twice the size of the bulb." Experiments were also made with various kinds of potting soil. Peat did not give good results, the best being obtained with good loam, of a holding nature which formed a compost that would not become powdery when dry. We have now a considerable advantage over the cultivators of fifty years ago; we have a better class of hothouses, with a more complete system of top and bottom heating. Some cultivators make a mistake, by either neglecting the plants when the flowering period is over, or by not taking into account the fact that the nature of the plant is to make a second growth at midsummer. The leaves come with the flowers, and if the plants are kept comparatively dry during May and June they will not make much growth, and may be dried off almost for the rest of the season if they are kept in a cool-house, but perhaps not 50 per cent. would flower next season; whereas if they are grown on freely during the summer and

autumn months, the proportion of flowering bulbs to flowerless ones would be as ten to one. Over-potting is also a great evil. Good large bulbs may be potted in 5-inch pots, and will not only flower, but grow better in such pots than they will in larger ones. We had some small bulbs planted in 60-sized pots in the season of 1884, which produced flowering bulbs of large size and of the best quality. Some growers have a belief that flowering bulbs cannot be produced unless they are grown in 5 and 6-inch pots A very limited experience with two sizes smaller would dispel this delusion. We use a rich potting soil, of four parts good substantial loam, one of decayed manure, and one of fibrous peat. The past season was a very good one for a prolonged bloom. Uusually the end of March and the early days of April are hot, with drying winds, and few flowers are left by the end of April.

A careful inspection of the varieties raised this season reveals the fact that improvements have been made in every direction; but one of the most important gains from a gardening point is the increased number of flowers of the very best form and substance produced on one scape. The South American species, Hippeastrum pardinum and H. Leopoldi, gave good form and substance to the flowers, but reduced the number. But by intercrossing with some of the finest Continental varieties, such as Empress of India, which produces six flowers on one scape, we have now well-formed flowers of good substance, six of them being produced on one scape, and as many as three stems from one bulb. For several years I have carefully noted the best flowers in Messrs. Veitch's nursery at Chelsea, and also at the London exhibitions. The best production of the present season is undoubtedly the variety named Perfection: two plants exactly alike flowered from the same seed-pod—at least, as nearly alike as it is possible for two distinct plants to be; the flowers are of fine form, petals slightly reflexed, the colour creamy-white, with a white centre; the segments being irregularly marked with bright scarlet.

Lady of the Lake is a very fine white variety, not quite pure, but nearly so; it is quite distinct; the flowers, of the largest size, are borne aloft on stout stems, and are very conspicuous in the collection.

Lady Macbeth is quite an artistic flower, of large size, the segments, slightly twisted, are marked with rosy-scarlet.

Kilworth has not been seen outside the Chelsea nursery; it is formed after the florist standard; the colour crimson with a greenish tip to each segment, and a green centre.

I may add here that the green centre is not much thought of, but it sometimes, as in Lady of the Lake, adds to the beauty of the flower.

Triumphans is a noble variety, with richly-coloured flowers, the petals nearly 4 inches across, the flowers of the best form, greenish centre.

Linda, creamy-white, dashed with crimson, had ten flowers on two scapes.

The Giant, certificated about three years ago, flowered well this year. It has produced more flowers from one bulb than any other; they are distinct in colour and very handsome.

Orestes, crimson, the centre of each petal being richer in colour, green centre.

Titian, very distinct salmon-red, with a conspicuous maroon-crimson centre; flowers 7 inches across.

Dona, greenish-white, marked with crimson lines, and mottled the same colour.

Ernita, rosy-blush ground, with a bright rose central band to each segment, the flowers being also suffused with rose, and marked with brighter lines.

Prince Albert Victor has flowers of the finest form, rosy-crimson, and white central band on each petal.

Fairy, primrose, with reddish lines.

Hedila, white, with crimson streaks on each side of a whitish central band.

Lady Lawrence, a very distinct and handsome variety, the colour a peculiar pale purplish-rose, the segments marked with a greenish-white band, the colour deepest on each side.

Countess of Rosebery, reddish-crimson, greenish-white star, the ground colour creamy-white.

Duchess of Edinburgh, purplish-rose, mottled creamy-white, greenish-white star.

Mirabel, one of the most distinct in the whole collection, the flowers are so well blended—scarlet, crimson, and magenta, on a creamy-white ground.

Janet, fine large creamy-white flowers, scarlet flakes.

Storr's Beauty, a distinct and charming variety, raised in the Rev. W. Stainforth's garden, rosy-scarlet, with whitish bands on each petal, the colour bright rose on each side.

Serapis, pale salmon-buff, suffused crimson.

Boadicea, very large broad petals, scarlet, greenish star.

Modesty, narrow reflexed petals, white and rose.

Endymion, very distinct, the centre of petals maroon, with creamy white margin.

Picotee, distinct whitish flowers, marked on the edge with a narrow line of a red colour.

Lady Howard de Walden, by far the best pure white variety. Four flowers on one scape.

Mrs. Whitbourne, deep vermilion, with a whitish margin.

The above notes on the most recent varieties will show the endless variety of colour now obtained, and most of them produced two scapes from each bulb, and from three to six flowers on each. The large number of flowers produced from each bulb with such a variety of form and colour, have put such good old species and varieties as A. Ackermanii, pulcherrima, pardina, Chelsoni, Junius, Sultan and Leopoldi, quite in the shade. The flowers, though well formed, only came two on a scape, and usually one stem only from each bulb.

The increasing popularity of the Amaryllis has increased the number of growers, and of course novel systems of culture are brought forward. It has been stated in a contemporary that Messrs. Kelway, of Langport, grow them in borders out-of-doors "with a little litter strewn on the surface," as a sufficient protection in winter. The drying off of the bulbs is also objected to as unnecessary and perhaps injurious. The gain by not drying off the bulbs in winter is, we are told, an increased number of flowers on a spike; we are not told how many flowers Messrs. Kelway obtain from one spike of Hippeastrum grown out-of-doors, but if they get more than six from one spike or sixteen from one bulb, it will be glorious news for hardy plant growers. Referring to the drying off system, Mr. Heale, who has had the management of Messrs. Veitch's entire collection for many years, writes to say, "that they have tried both drying off and keeping the roots moist in winter, but that the drying off system is best, and is the one adopted at Chelsea," as it is in our garden at Great Gearies. *Jas. Douglas.*

## ALOE INSIGNIS×, N. E. BROWN.

(NEW HYBRID ALOE)

IN several respects this handsome Aloe is a very interesting one; not only is it a beautiful species in its class, but is perfectly distinct in appearance and character from every other Aloe known, and teaches us to what a wide range the genus possesses the capability of being hybridised, and what great probability there is that several of the wild species of Aloe owe their origin, not to variation, but to hybridisation. A few hybrid Aloes are already in our gardens, but so far as I am aware nothing in this genus has been raised from such widely dissimilar parents, and with such a very distinct result. The history of this interesting novelty is as follows:—In 1874 Mr. Cooper fertilised flowers of Aloe drepanophylla with the pollen of Aloe echinata, and the seeds were sown in 1875. In April of this year (1885) some of the plants commenced to flower for the first time, that is, at an age of ten years.

Now Aloe drepanophylla is a species described by Mr. Baker in the *Gardeners' Chronicle* some years since from this very plant that Mr. Cooper hybridised! It is one of the tree Aloes, that is, it has a stem several feet high (about 8 feet in Mr. Cooper's plant) which does not throw out suckers or side shoots like the dwarf species, but may branch at the top when sufficiently tall. Mr. Cooper's plant is now three-branched at the top. Mr. Cooper had grown the plant for several years before it flowered, and the plant was many years old when he first had it. It was in the second year of its flowering that Mr. Cooper hybridised it; the first year he did not hybridise it, and it set no seed-pods, nor has it done so since, although I have seen the plant flower every year since, so that it appears not to be capable of being fertilised with its own pollen, and Mr. Cooper has only tried to hybridise it on the one occasion mentioned. There are some plants of it at Kew which have been there many years, and I believe have never flowered. From this it appears, first, that A. drepanophylla requires to attain an age of many years (probably twenty at the least) before it flowers; and, secondly, that it requires to be cross-fertilised to produce seeds. Furthermore this species belongs to the section Pachydendron, all of which are tall-growing species, characterised by having their stamens protruding beyond the perianth.

The male parent, Aloe echinata, on the other hand, is one of the smallest of the genus, being quite stemless, and, leaving the flower-stem out of the question, it does not exceed 4 inches in height, and produces suckers at its base. Compared with A. drepanophylla it soon reaches flowering maturity, for if raised from seed it will flower in a few years, about five or six I believe. This species belongs to a very distinct group of the section Eualoe, all of which are small stemless species, and have their stamens included in the perianth.

Thus we must class the male parent among the dwarfs, and the female parent among the giants of the genus, and few people, looking at the two plants side by side, would expect to obtain a hybrid between them. Turning to the hybrid itself, we find that it is interesting not only in partaking of the characters of both parents, but at the same time in being so perfectly different from either that were its parentage unknown no one would suspect it to be a hybrid, and least of all a hybrid between its real parents.

In the possession of a stem, and in the number of years it has taken for it to arrive at flowering maturity, it resembles the female parent, whilst in the tendency which some of the plants have to produce shoots upon their stems it resembles the male parent, which produces offsets at the base. The leaves in their erect or slightly incurved habit, and the presence of tubercles on the face and back, exhibit in a degree the characteristics of the male parent, since in the female parent the leaves are very spreading, quite smooth on the face and back, and strongly falcate (whence the name drepanophylla); some leaves of the hybrid are also somewhat falcate, showing perhaps a slight trace of the female element; in size the leaves of the hybrid are intermediate between those of the parents.

In the erect flower-stem more lax arrangement and droop of the flowers it partakes of the characters of the male parent (the female parent having spreading flower-stems with very numerous densely packed and more spreading flowers), whilst in the colour of the flower, and in having exserted stamens it resembles the female parent. The form of the flower is different from both parents. In shape the bracts are intermediate, but in the brown nerves they resemble the female parent. The whitish colour of the open flowers, which is a very rare colour in this genus, and effectively contrasts with the deep coral-red of the unexpanded buds, at once renders this an attractive and conspicuous plant among its fellows. My drawing of it (fig. 8) represents, B, the entire plant of the hybrid one-third its natural size, and a leaf, bract and flower of ditto, natural size. A represents the leaf, bract and flower of the seed-producing parent, A. drepanophylla, all natural size, and C the leaf, bract, and flower of the male parent, A. echinata, also all natural size. The following is a description of this fine hybrid, which is I think the most interesting yet recorded for the genus, although Mr. Cooper has another and far more interesting one botanically, of which I shall give an account on a future occasion.

Stem in the plants seen at this date about 3 inches high, and ¾—¾ inch thick, crowned with a rosette of about 30—40 ascending and often slightly incurved and slightly falcate glaucous-green leaves, 7—11 inches long, gradually tapering from a 1—1½ inch broad base to a rather fine point; flat on the face, or sometimes concave towards the apex from the margins being inrolled, with an excentric median row of small prickles or tubercular points, and sometimes a shorter row of smaller ones on each side of it, or now and then without prickles on the face. Convex on the back with several longitudinal rows of small tubercular points. Towards the apex of the leaf, one or two of the rows often develope into decided prickles, Margins sometimes, but not always, incurved towards the apex of the leaf, armed with prickles about ¾—1 line long, of a rather paler green than the rest of the leaf. Flower-stem 18—20 inches high, erect, clothed almost from the base, but not at all densely, with elliptic-oblong or elliptic-ovate, acuminate, membranous, whitish bracts, with brown nerves 6—9 lines long. Flowers racemose, numerous (forty to fifty), pedicels 8—12




FIG. 8.—ALOE INSIGNIS×, N. E. BROWN.

B, Entire plant, one-third natural size, with leaf (to the left), bract, and flower, natural size; A, Leaf, bract, and flower of female parent, Aloe drepanophylla, natural size; C, Leaf, bract, and flower of male parent, Aloe echinata, natural size.

lines long, ascending, longer than the bracts, green when the flower is open. Buds at first erect, afterwards drooping, deep coral-red, changing on expansion to whitish, with three green dorsal lines towards the apex of the perianth segments. Perianth straight, 15—16 lines long, 4 lines in diameter at the middle, where it is very slightly inflated. Stamens exserted 3—4½ lines beyond the mouth of the perianth, filaments yellow, anthers burnt-sienna coloured. *N. E. Brown, Herbarium, Kew.*

# Orchid Notes and Gleanings.

## ORCHID PRUNING.

In continuation of my pruning experience I have to record the history of a Lælia anceps. In 1873 I obtained a plant consisting of three bulbs with a leaf to each. It grew and bloomed yearly, and as a matter of course the old back growths lost their foliage as time passed away. Although I was conscious that I had in Lælia a plant differing considerably, both in its growth and requirements, to either of the species already mentioned, yet I considered it right and proper to cut away these old leafless bulbs. Therefore, at potting time, when the operation could be better performed, I cut out the bulbs, rhizome and all, close up to the bulbs, which retained good healthy foliage. This has been my practice ever since at potting time. The plant broke away very freely, and produced strong spikes and fine bloom every year. And notwithstanding that I took off a large piece on one occasion to have a second plant, and small pieces often for friends, the plant was sufficiently attractive to the eye of Mr. Outram, who made a bid for it on behalf of his firm; and our second plant was coming on. Moreover we were glad to thin out, so by the consent of Mrs. Haselfoot (my employer) the plant was allowed to go to the Holloway nurseries for £6. It had eleven spikes, bearing a total of thirty-two blooms, only one leafless bulb, but quite a mass of fine healthy foliage. This was in February, 1884—a little over ten years after receiving it. The piece taken from it, and which we still possess, produced thirty-one blooms this present year. It was seen by many lovers of Orchids, and specially admired by Dr. Ward of Southampton, who is one of the greatest lovers of Orchids in this district, and whose opinion is valued all over the kingdom. This specimen contains at the present time two leafless bulbs, thirty-one with fine leaves, and is breaking very strongly nine new growths. This plant, like our first, has been pruned at potting-time, which takes place with me about every third year, and would be worth £5 at least to the trade at the present time. Here then we have obtained £11 value from the three bulbs of 1873, and have also a fine young No. 3 specimen coming on. Can it be said in the face of these facts that pruning weakens the plants?

If pruning out the old worn-out back-growths is ruinous, as has been stated by the objectors to the system, then the whole of our little collection should have been on the rubbish-heap long ago, for a large majority of them have been pruned. But I think sufficient has been shown to satisfy reasonable men that pruning, as I have it, is not injurious to the health and vigour of many species of Orchids; in fact, I have a very strong opinion that many of the species really grow stronger and look healthier, and they certainly require less pot-room, when pruned.

I have now to speak of Cattleyas, but cannot go back many years, as my knowledge of these has been more recently acquired, but for four years I have pruned C. Harrisoniæ, C. intermedia, C. Mendelii, C. Mossiæ, and others. All of them look healthy; they grow well, and bloom very freely. Moreover, their appearance is improved, and this counts something with most people. I have just started the practice with a plant of Ansellia africana. In March last, while the plant was resting, I took it in hand for repotting. It bloomed last year but made very weak growth—so weak that I did not expect it to bloom this year. I therefore determined to shake it out and start afresh. It had but one lead, but seven growths, two with foliage and five quite bare. I cut four of the back ones out, repotted the plant, and it soon started into growth at two places, and is now rooting very freely and pushing up two

strong growths. I cannot believe that it would have started stronger if I had left the old growth still on.

I am quite satisfied with the results of pruning, so far as I have tried the system, and as I have given the matter some years of attention and practice I will close my present notes on the subject by giving three rules, which I think are very important to a perfect knowledge of the culture of Orchids. Since I have followed these my plan of procedure has been shaped accordingly.

The first is to bear in mind that Orchids are never quite stationary as to growth, like other plants, but are alway moving onward. Every new growth throws out roots which require to be fed, and these growths soon become independent plants, and moreover the roots attached to any bulb do not live many years. In some cases they die annually. The second rule is to ascertain at what age the young growths will produce their bloom, and how many times or seasons will these continue to bloom; also in what manner they will produce new growth, and when they lose the power to break afresh. Rule three is to remember that, though Nature's law is slow in its operation to separate the dying from the living, it does not follow that this law must be rigidly adhered to when plants are brought under cultivation. Of course there are many other things to know, such as seasons of growing, of resting, watering, shading, temperature, and a hundred other things, but above all, the individuality of every species. But these things are generally known and written about. *N. Blandford.*

### Orchids and Pitcher-plants at Bocking Place.

The effect of these when arranged together is well exemplified in the well-grown collection belonging to Sydney Courtauld, Esq., at Braintree, where the three principal Orchid-houses are very showy and interesting with rare and well-grown plants in flower. Suspended over the tank in the warmest house is a splendid collection of Nepenthes, including all the obtainable species in cultivation—some of the rarer ones, such as N. Northiana, bearing unusually fine pitchers; indeed, the whole collection shows the plants at their very best, and it is difficult to imagine anything more noble, showy, or curious than the large blood-red pitchers on Mr. Courtauld's specimen of N. sanguinea and N. Mastersiana ×, the horny, hirsute ones on N. Veitchii, or the richly mottled leaf appendages on N. Rafflesiana and its allies. About the house are arranged many fine Orchids in bloom, the pouches of the Cypripediums seeming much in keeping with the pitchers of the Nepenthes overhead. One fine plant of the best variety of C. Stonei has two spikes of eight flowers; C. niveum fifteen snowy blooms; C. Veitchii equally good, and many nice specimens of C. barbatum superbum, C. Roezlii, and Phalænopsis grandiflora. Also good in this house are many forms of Odontoglossum Roezlii, Dendrobium Lowianum, Dendrochilum filiforme with many spikes, Broughtonia sanguinea, Oncidium Papilio, and some Aërides and Saccolabiums, the whole being very effectively displayed with the Nepenthes.

The principal flowering plant-house is gay with many excellent examples of the many varieties of Odontoglossum Alexandræ, O. Pescatorei and other Odontoglots, including some well bloomed masses of O. vexillarium, many handsome and high-coloured forms of Masdevallia Harryana, and a charming specimen of the lovely M. rosea with about 100 blooms; also good M. Veitchii and M. Shuttleworthii. Among the other plants are some well-flowered Vanda lamellata, Lycaste Deppei, L. aromatica, Lælia xanthina, many Epidendrum vitellinum majus, E. nemorale, E. variegatum, Angræcum falcatum, Promenæa citrina, with thirty blooms; Oncidium macranthum, with twenty flowers on a spike; O. crispum, Sobralia macrantha nana, Utricularia Endresii, Cypripedium Dominianum, C. Schlimii, in very robust condition; Odontoglossum citrosmum, with thirty flowers on one spike; O. Œrstdii, Epidendrum Wallisii. The unique and healthy collection in the Masdevallia-house also contributed some rare things, both curious and beautiful, to add variety to the display in the show-house, and among those may be noted Masdevallia leontoglossa, very curious; M. porcellipes, like a smaller form of M. leontoglossa, M. velifera, M. Bonplandii, M. coriacea, M. gemmata, and M. tridactylites with numerous flowers like brown beetles; M. Macrura, M. ionocharis, M. Chelsoni, M. Wallisii discoidea, and several forms of M. chimæra. It may be noted, too, that the rare and curious Coryanthes macrantha, and equally uncommon Eriopsis biloba have just bloomed here in great perfection. In the Cattleya-house a good show is still kept up with many varieties of C. Mossiæ, C. Mendelii, C. gigas, and C. Warneri, one form of tue last-named with gigantic flowers, and another of Sander's form of C. gigas with higly-coloured flowers on a spike, being of remarkable beauty. It is a pleasure to note that the Bocking Orchids, under the management of Mr. Alfred Wright, are fast coming to the front rank for clean, healthy, well-grown and well-flowered plants in every department, the Cattleyas and Lælias especially, which used formerly to be difficult here, being now in grand vigour. *J. O'B.*

### Odontoglossum vexillarium at Pickering Lodge, Timperley.

This species affords a sight that should be seen by every one interested in these beautiful flowers. The centre stage of the house they occupy is simply solid, to the enormous number of about 10,000 blooms. This seems almost incredible, but here they are, and of such grand forms, some measuring across the lip 3½ inches, and 4½ inches deep, from almost white to the very darkest varieties, and in some cases beautifully spotted. I should say there is not such a sight to be seen in any other establishment like this just now, and the foliage is of such colour!—none of the rust, as sometimes seen upon them; they are more like well-grown Leeks. The plants are full of dark, vigorous growth. The forthcoming Rose show will afford visitors a good opportunity of visiting this establishment, and I would advise all to see them, and they can then form their own opinion of it. The Eucharis here are in grand form. I noticed one that I believe is not yet named; the leaves are slightly ribbed, but not so much as Sanderii, about 3 inches across; the flowers, if possible, purer in whiteness than E. amazonica. In one of the Odontoglossum Alexandræ houses I counted about seventy spikes of splendidly formed flowers, and of very superior quality. The Phalænopsis-house is also very fine, every plant being full of vigorous health. The huge giants of Cattleyas and Lælias are in grand healthy condition. I noticed some fine forms of Cattleya Sanderiana, Mendelii, and numerous others, but the majority of these have done flowering, though the plants in themselves are sufficiently interesting to those practically acquainted with them. Cypripedium niveum are very beautiful, carrying quantities of their white flowers. Masdevallias are full of vigorous growth and fine colour. Mr. Hardy has recently rebuilt most of his glass, and must have spent a vast sum to bring this collection to its present magnitude. Two vineries rebuilt and planted in March last are promising to give good return for the expenditure; the Vines have run to the top of the houses with good canes, almost as thick as a walking-stick, with close-jointed wood. The whole establishment is, in fact, one thorough practical work; whatever Mr. Hardy takes in hand he does not do by halves, but in right down earnest. Let me once more impress upon strangers visiting the Rose show not to miss the sight of the vexillarium, which alone will well repay all lovers of Orchids. *S. Johnson, Clarendon Nursery, Sale.*

## HYBRID PASSION-FLOWER.

Mr. Geeson, of The Gardens, Haldon, near Exeter, sends us flowers of a hybrid Passion-flower raised by him between P. racemosa (better known in gardens as P. princeps), as the seed parent, and the white form of P. cœrulea known as Constance Elliott.

The cross is a very interesting one botanically, and may turn out important horticulturally, for if Mr. Geeson can succeed in combining the hardiness of P. cœrulea with the inflorescence and colour of P. racemosa, he will accomplish a feat which should entitle him to the thanks of all gardeners. The specimens sent comprise a leaf which has the form and yellowish-green colour of that of P. racemosa, and two flowers which have the internal conformation of those of P. racemosa, but which differ in colour, the sepals being of a dull lilac, and the petals also of lilac somewhat deeper and brighter. The flowers are borne, Mr. Geeson tells us, on the joints (axillary), not in bunches, as in P. racemosa—*i.e.*, in terminal racemose clusters.

Hence, omitting minute botanical detail for which our readers might not thank us, it may suffice to say that in this plant we have the foliage of P. racemosa, the inflorescence of P. cœrulea, the white. The internal conformation is more like that of P. racemosa, and the coloration of the sepals and petals intermediate between the two, that of the coronal threads, however, being in one of the two flowers like that of Constance Elliott.

It is very interesting to note that one of the earliest hybrid Passion-flowers raised was that known as P. cœruleo × racemosa, a hybrid between the same two species as that before us; but in P. cœruleo-racemosa the leaves are mostly five-lobed, not peltate, deep green, and intermediate between those of the parents, while in the cross before us the foliage is more distinctly like that of P. racemosa. The structure of the flower in our present hybrid is essentially the same as in P. cœruleo × racemosa, with the exception that in one flower the outermost coronal threads, as we have said, are ivory-white, as in Constance Elliott.

It is a very singular circumstance that the colour of Mr. Geeson's hybrid should be so exactly that of P. cœruleo-racemosa, for, although Constance Elliott is a derivative from P. cœrulea, her flowers are ivory-white, and yet in her descendants (crossed with P. racemosa) the dull purplish hue, caused by the admixture of the blue of one parent and the bright pink of the other, comes out. The hereditary tendency, latent in Constance Elliott, thus shows itself in her descendants. The original P. cœruleo-racemosa was raised by Milne at Fulham, in 1819, and as it appears the pollen parent was also P. cœrulea. Sabine, in describing this, mentions that there was great variation in the products of this cross; and Gaertner, who crossed the two species reciprocally, also mentions the variations he obtained. For a summary of the history of these hybrids the reader may be referred to Dr. Focke's useful work, *Die Pflanzen-Mischlinge.*

It is a well known fact, commented on by all recent writers on hybridism, that Passion flowers are often infertile with their own pollen (like the Aloe mentioned in the present number, p. 40, col. *b*), even when it is applied artificially; but this is not universal, for P. cœrulea near London fruits abundantly on outside walls in some seasons under conditions which would appear to preclude the possibility of any impregnation save that by its own pollen. Possibly, however, the seed may not be fertile. This is a point to be cleared up. *M. T. M.*

## FRUIT NOTES.

The "Centennial" Cherry is a seedling from Napoleon Bigarreau, being raised in Napa Valley by Mr. Henry Chapman, and sent out by Coates & Tool, of the Napa Valley Nurseries, Napa, California, and fruited by Mr. Chapman for the first time in 1876. It is alleged to be the most valuable shipping and canning Cherry in the world. The fruit is larger than its parent, more oblate in form, and of a slightly higher colour. It is sweeter than Napoleon, and has a smaller seed, but its chief value lies in its firmness. [A sample forwarded to us, which was picked June 1, 1885, arrived in not quite so bad a condition as the length of time the fruits had been packed would warrant us to expect. Ed.]

### Whinham's "Industry" Gooseberry.

Among the many varieties of Gooseberries, none have deservedly gained so rapidly in public estimation as Whinham's Industry. This is not a very new variety, but one that well deserves a much more extensive cultivation. Where grown it is highly appreciated for its many excellent qualities. It is of very vigorous growth, a heavy cropper, and bearing a large berry. For gathering green, few are superior to it. When ripe it is a splendid red fruit. This is one of the few sorts that do well in America, not being troubled by mildew, and some excellent authorities in the States have expressed an opinion that it will revolutionise Gooseberry culture in America. A correspondent states that "Whinham's Industry surpasses any of the older varieties for growth, bearing, and, what is of great importance to market gardeners, its earliness, weight and size of berry. From a plantation of two and a half years, say three summers' growth, at the time of gathering my average crop was, from ten trees, one pot, local measure, or 84 lb. berries. The growth is so vigorous that trees planted 6 feet by 5 feet are nearly, and in some cases touching each other."

We send you by same post a few branches taken at random from a quantity of trees in full crop, and we think you will agree with us that, bearing in mind the number of berries on the branches, this variety is capable of yielding an immense crop of large and excellent fruit. *Richard Smith & Co., St. John's Nurseries, Worcester.* [The sample sent amply confirmed our correspondents' statement. Ed.]

# REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1885.]

| COUNTY. | APRICOTS. | PLUMS. | CHERRIES. | PEACHES AND NECTARINES. | APPLES. | PEARS. | SMALL FRUITS. | STRAWBERRIES. | NUTS. | NAME AND ADDRESS. |
|---|---|---|---|---|---|---|---|---|---|---|
| **SCOTLAND.** | | | | | | | | | | |
| ABERDEEN | .... | Under average | Under average | . . | Over average | Under average | Average | Over average | . . | John Forest, The Carrens, Haddo House |
| | .... | Average; good | Average; good | .. | Over average; very good | Over average; very good | Over average; good | Over average; very good | .... | John Proctor, Slaines Castle |
| | Under | Under | Average | .. | Average | Average | Average | Over | Under | R. Farquhar, Fyvie Castle |
| | .... | Fair; average | Good yearlies frosted; over | .... | Extra good; over | Very few; average | Good generally; over | Looking excellent; over | . . | James F. Smith, Dunecht Gardens |
| ARGYLL | Under | Under | Average | . . | Average | Under | Average | Average | . . | G. Lawer, Inverary Castle Gardens |
| BANFF | Over; very good | Under | Average | Average; good | Over | Average | All sorts, heavy crop | Very promising | . . | John Webster, Gordon Castle |
| BERWICK | Over very good | Under; good | Under; good | Average; very good | Over; good | Average; very good | Over | Over | .. | William Richardson, Ayton Castle Gardens, Ayton |
| CAITHNESS | Under | Under | Average | | Average | Under | Average | Average | Under | John Sutherland, Langwell, Berridale |
| CLACKMANNAN | Under | Under | Over; good | Under | Over | Under | Over | Over | . | Thomas Ormiston, Alloa Park Gardens |
| | .. | Under | Average | Good | Average | Under | Very good | Very good | | James Dewar, The Gardens, Beechwood, Tillicoultry |
| DUMBARTON | ... | Under; very fine | Under | | Good | Under | Very good | Very good | .. | Jno. Mitchell, Camuseskan, Helensburgh |
| DUMFRIES | . . | Under | Under | | Under | Under | Average | Average | . . | James Smart, Raehills, Lockerbie |
| EAST LOTHIAN | Average; very good | Under average | Average; good | Average | Average | Average; good | Over average good | Average; good | Under average | I. Dow, The Gardens, New Byth, Prestonkirk |
| FIFE | Average | Average | Under | Over | Average | Under | Average | Over | | John Proctor, The Gardens, Donibristle |
| FORFAR | . . | Under | Average | | Over; very good | Average; good | Average | Average | | James Mitchell, Panmure Gardens, Carnoustie |
| | Bad | Good | Early bad; late, as Morellos, very good | Very deficient | Over | Early ones very deficient | Gooseberries rather under an average, black and red Currants an average | Abundant | Not cultivated to any extent in the County | Correspondent, in the Carse of Gowrie |
| INVERNESS | .... | Over | Average | Under | Over | Average | Under | Over | .. | A. Macdonald, Balnacaan Gardens |
| KINROSS | .... | Under | Average | .. | Average | Under | Over | Average | | John Fortune, Blair Adam |
| MIDLOTHIAN | Over average, very good | Average; good | Average; good | Over average very good | Over average, very good | Average; very good | Abundant; very fine | Over average, very good | Average; very good | Malcolm Dunn, Dalkeith Gardens, Midlothian |
| | Over average | .... | Under average | .... | Over average | Under average | Average | Average | . . | Charles Johnston, Dalhousie Castle Gardens |
| MORAY | Under | Under | Average | Over | Over | Average | Black and red Currants good; Goose berries under | Over | .. | Donald Cunningham, Darnaway Castle Gardens, Forres |
| NAIRN | Average | Bad | Average | Good | Good | Average | Red and White Currants and black good; Gooseberries average | Average | .... | James Manson, Cardens, Kilrammock Castle, Fort George Station |
| ORKNEY | .... | .... | Average; good | Under average | Over average | Average; good | Average | Average | .... | Thos. McDonald, Balfour Castle Gardens, Kirkwall |
| PEEBLES | ... | Average; not ripe | Under; good | .... | Under; good | .... | Over; good | Prospect of a good crop | .. | Malcolm McIntyre, The Glen, Innerleithen |
| PERTH | Under | Average | Over; very good | Under | Average; good | Average | Over; very good | Over; very good | Under | John Robb, Drummond Castle Gardens |
| ROSS | Average; very good | Under; good | Average; good | Average; very good | Average; good | Average; very good | Average; very good | Over average good | . | J. Mackay, Tarbat Gardens, Parkhill |
| | Under | Under | Under | Average | Over | Under | Under | Under | . | D. Harvey, Gardens, Invergordon Castle |
| ROXBURGH | Overaverage | Average | Overaverage | Average; no Nectarines outside | Overaverage | Average | Overaverage | Average | . . | John Galloway, Minto Gardens, Hawick |
| | Average; good | Average; good | Morellos over good | . . | Average; good | Under; bad | Over; good | Over; good | .... | Archibald McKellor, Floors Gardens, Kelso |
| STIRLING | Under | Under | Average; good | Under | Average; good | Average; good | Average; good | Over; very good | . . | Maurice Fitzgerald, Dunmore Park, Stirling |
| SUTHERLAND | . | Average | Over average | .. . | Over average | Under average | Over average | Average | Average | D. Melville, Dunrobin Castle Golspie |
| WIGTON | . | Under | Over | .... | Over | Under | Over | Average | . | Archibald Fowler, Castle Kennedy, Stranraer |
| **ENGLAND—NORTHERN COUNTIES.** | | | | | | | | | | |
| CUMBERLAND | .. | Under | Average | . .. | Average | Under | Full crop | Over average | . . | J. Hammond, The Gardens, Brayton, Carlisle |
| WESTMORELAND | .... | Under; bad | Morellos good | .... | Under | Under | Under; good | Very good | Average | W. A. Miller, Underley, Kirkby Lonsdale |
| | . . | Under average | Good | Under average | Very good | Good | Good | Average; very good | Good | Edward Evans, Storry Gardens, Windermere |
| DURHAM | Under | Under | Average | .... | Average | Under | Average | Over | .... | J. Hunter, Lambton Fence Houses |
| YORKSHIRE | Average | Bad | Very good | Very good | Under | Average | Very good | Very good | Under | James Fowler, The Gardens, Harewood House, Leeds. |
| | Over; very good | Under | Average; good | Over; good | Under; good | Under; good | Average; good | Over; good | Average; good Walnuts early | Thomas Jones, The Gardens, Rilston Hall, Wetherby |
| | Average good | Under; good | Under; good | Average; good | Average; good | Average; good | Under; bad | Average; good | Under; bad | Robert C. Kingston, Brantingham Thorpe, Brough. |
| | Good; very good | Under average | Under | Good average | Average | Under average | Good average | Good; very good | Average | Joseph Shaw, Nunappleton, Tolston Percy |
| LANCASHIRE | Good | Moderate | Under average | Good | Very good | Very good | Good | Very good | Moderate | William Culverwell, Thorpe Perrow |
| | .... | Under average | Average; good | .... | Average | Under average; good | Average; good | Average; good | . . | W. B. Upjohn, Worsley Hall Gardens |
| | Over; good | Average on walls; good | Average; good; Morellos very heavy crop | Over; very good | Over; good | Over; good | All heavily cropped; good | Over; good | Walnuts average | Wm. F. Roberts, Cuerden Hall, Preston |
| | Average . . | Under Average | Over Under | Average .... | Over Over | Average Average | Over Abundant; late | Average Over, late | . . | F. Harrison, Knowsley Andrew Jamieson, The Gardens, Haigh Hall, Wigan |
| | . . | Under | Average | .... | Average | Under | Under | Good | | Henry Lindsay, The Gardens Huntroyde Park |
| **MIDLAND COUNTIES.** | | | | | | | | | | |
| CHESHIRE | Average | Under average | Very good; Morellos good | Bad | Average | Under | Scarcely any, except Raspberries | A good show, but very late | . . | Alfred Jos. Grant, Withington Hall Gardens, Crewe |

CONDITION OF THE FRUIT CROPS—(*Continued.*)

| COUNTY. | APRICOTS. | PLUMS. | CHERRIES. | PEACHES AND NECTARINES. | APPLES. | PEARS. | SMALL FRUITS | STRAWBERRIES | NUTS | NAME AND ADDRESS. |
|---|---|---|---|---|---|---|---|---|---|---|
| **MIDLAND COUNTIES.** | | | | | | | | | | |
| CHESHIRE ..... | Under | Under | Average | Under | Over | Average | Average | Average | | Robert MacKellar, Abney Hall Gardens, Cheadle |
| DERBY | | Thin | Good | | Fair | Poor | Good | Good | ... | O. Thomas, Chatsworth Gardens |
| | Average | Under | Under | | Average | Average | Average | Average | Average | Thos. Keetley, The Gardens, Dailey Abbey |
| NOTTS | Average; good | Under | Average | Under | Over | Under | Over; good | Over; good | Average | Richard Carr, Welbeck Gardens, Worksop |
| | Average | Under | Average | Average | Under | Average | Average | Over average | | S. A. Woods, The Gardens, Osberton Hall, Worksop |
| | Average good | Under | Under; Morellos average Good | | Over; good | Average; good | Average | Over; good | | J. Edmonds, Bestwood Lodge Gardens |
| SALOP ..... | Good Average | Average Under average | Average; Morellos over | Over average | Average Under average in orchards, more plentiful on trained trees | Good Over average on walls | Plentiful Average | Very good Average; good | Average Average | A. Henderson, Thoresby<br>A. S. Kemp, Offley Villa, Shifnal |
| | Average; good | Under, good | Average; good | Average; good | Over; good | Average; good | Average; good | Over; very good | Average; good | James Lowden, The Quinta, Chirk |
| | Over; very good | Over; very good | Average; good | Average; good | Over; very good | Over; very good | Over; good | Over; very good | Average; good | Richard Milne, Sundorne Castle Gardens, Shrewsbury |
| STAFFORDSHIRE .. | Over; good Average | Average Average | Average Average | Average Over average | Under Over average | Average Over average | Over, good Average | Over; good Average | Over .... | Henry Purser, Berwick Gardens, Shrewsbury<br>Wm. Davidson, Sandon, Stone |
| | Over | Over | Over | Average | Over | Over | Average | Average | Over | Edwin Simpson, Wrottesley, Wolverhampton |
| | Average | Under average | Average | ... | Average | Average | Under average | Average | Average | W. Bennett, Rangemore Gardens |
| | Under | Under | Under | .. | Average | Under | Average; good | Abundant and good | Average | W. Ward, Little Aston Gardens, Sutton Coldfield |
| LEICESTER ... | Under average; good<br>Under average | Average; good<br>Average | Over average<br>Over average | Under average<br>Average | Average; good<br>Over average | Average<br>Under average | Over average; very good<br>Over average | Average; very good<br>Over average | ... | John Wallis, Keele Gardens, Newcastle<br>James Maclean, The Gardens, Beau Manor Park, Loughborough |
| | Over | Over on walls partial on orchard standards, over on Damsons | Over | Average | Over | Over on walls, thin on pyramids | Over | Average | Over | William Ingram, Belvoir Castle Gardens |
| RUTLAND . | Over, very good<br>Average | Under, except Victoria<br>Under | Average<br>Over average | Over, very good<br>Average | Average; good<br>Average | Under; bad<br>Average | Average; good<br>Abundant | Over; very good<br>Over average | Walnuts over, others average<br>Average | G. C. Maynard, The Gardens, Cole Orton Hall.<br>John Grey, Normanton, Stamford |
| | Under | Over; good | Over; good | Under | Average | Average | Over | Average | Over | Henry Mason, The Gardens, Bisbrook Hall, Uppingham |
| WARWICK ... .. . | Good | Under | Under | Under | Under | Average; good | Average | Average | Promising | Wm. Miller, Coombe Abbey, Gardens, Coventry |
| | Average | Plentiful | Plentiful | Under | Average | Plentiful | Abundant; good | Abundant; good | Average | Robt. Greenfield, Priory Gardens |
| | .. | Under average | Under average | | Average; good | Under average | Above average good | Over average; very good | Average | E. Cooper, Highbury Moor Green, Birmingham |
| NORTHAMPTON | Under; promising<br>Average | Under; promising<br>Under; good | .<br>Average | Under; promising<br>Average good | Under<br>Under | Average; promising<br>Over average; good | Over; good<br>Average | Average, good<br>Over average, good | Average; promising<br>Average | J. Tugger, Milton Park Gardens, Peterborough<br>Edmund Cole, Althorp Park |
| BEDS ..... ... | Average; good | Over average; good | Average; good Morellos over average, good | Average, good | Average; good | Over average; good | Average, good | Average, good | Average; good Walnuts over average | George Ford, Wrest Park, Silsoe, Ampthill |
| | Average | Under average | Under average | Average, good | Average; good | Under average | Over average; good | Over average; good | Over average | Charles Turner, The Gardens, Cranfield Court, Newport Pagnell |
| OXFORD .. | Average; good | Average | Average | Under average | Average | Average | Under average, bad | Under average | Under average | Isaac Watson, Nuneham Park Gardens |
| | ... | Under average; good | .. | | Over average; good | Over average; very good | Over average, good | Over average; good | Over average, good | Chas. Hewett, Sarsden Gardens, Chipping Norton |
| | Over | Average | Under | Under | Over | Over | Average | Over | Under | T. Doherty, Wroxton Abbey Gardens, Banbury |
| BUCKS ..... | Under average; good<br>Average | Very scarce<br>Under average | Average; good<br>Average; good | Average<br>Average, very good | Under average<br>Under average | Average; very good<br>Over average; very good | Plentiful; very good<br>Average | Abundant; good<br>Over average; very good | Walnuts; average<br>Over average | Benj. Hope, Middleton Park Gardens, Bicester<br>Thos. Bailey, Shardeloes Garden, Amersham |
| | Average | Average | Over average | Average | Over average | Over average | Average | Over average | Average; Walnuts under average | Geo. Thos. Miles, Wycombe Abbey Gardens |
| HERTS. ..... .. | Under average<br>Average<br>Under | Various over average, other varieties under<br>Average<br>Under | Under average<br>Morellos over average<br>Average, good<br>Under | Under average<br>Under<br>Average | Good average<br>Over<br>Over | Under average<br>Over<br>Over | Over average<br>Average<br>Average | Over average; good<br>Average; good<br>Average | Under average; Walnuts over average; good<br>Average<br>Over | J. Smith, Mentmore<br>Geo. Haskins, Stowe<br>George Norman, The Gardens, Hatfield |
| | Over average good | Average; good | Average; good | Average, good | Under average | Average; good | Average; good | Average; good | Over average; good | Richard Ruffett, Panshanger |
| | Heavy crops; very good<br>Over; very good | Under average; good<br>Average; very good | Average<br>Average; good | Over average, very good | Average<br>Average; very good | Average; an wallsvery good<br>Over; very good | Abundant; very good<br>Average; good | Average<br>Average; good | Over average<br>Over; good | J. C. Mundell, Moor Park Gardens, Rickmansworth<br>Joseph Thompson, Gorhambury Gardens, St. Alban's |
| **EASTERN COUNTIES** | | | | | | | | | | |
| LINCOLN ..... | Over | Under | Under | Average | Over | Over | Average | Over | Over | David Lumsden, Bloxholm Hall Gardens |
| | Over | Under | Average | Average | Over | Over | Under | Average | Few grown; Walnuts average | Thomas Vinden, Harlaxton Manor, Grantham |
| | Average | Bad | | | Average | Failure | Good | Very good | Good | J. Taylor, Lea, Gainsborough |
| NORFOLK ... | Over; good | Under | Over | Average; good | Average | Over | Over; very good | Under | Over; good | H. Batchelor, Catton Park, Norwich |
| | Average | Under | Average | | Average | Average | Average | Under | Average | Wm. Shingler, Melton Constable |
| | Average; good | Under; good | Under | Average | Average | Over; good | Under; good Raspberries over; good | Under; good | Average | James Forder, Hillington Hall, King's Lynn |
| SUFFOLK.. | Average | Under; bad | Under | Average | Average | Over | Average | Average | Over | James Sheppard, Wolverstone Park, Ipswich |
| | Average; good | Under | Average | Under | Average | Under | Average | Under | Average | John Wallis, Orwell Park, near Ipswich |
| | Average; good | Under; good | Average; good | Under; good | Under; good | Average; good | Over; good | Over; good | Over; good | Robert Squibbs, Ickworth, Bury St. Edmunds |
| | Under average; good<br>Average; good | Average, good<br>Thin; under | Average; good<br>Good; over | Average; good<br>Average | Over average; good<br>Under | Over average; good<br>Under | Over average; good<br>Over | Average; good<br>Over | Over average; good<br>Under | J. Mill, The Gardens, Rendlesham Hall, Woodbridge<br>D. T. Fish, Hardwicke, Bury St. Edmunds |
| ESSEX . .. .. | Average | Over | Average | Average | Average | Over | Average | Average | . | D. Donald, The Green, Leyton |
| | Under | Under | Average | Average | Average | Very good | Very good | Very good | . . | W. Bones, Havering Park, Romford |

CONDITION OF THE FRUIT CROPS—(*Continued*).

| COUNTY. | APRICOTS. | PLUMS. | CHERRIES. | PEACHES AND NECTARINES | APPLES. | PEARS. | SMALL FRUITS. | STRAWBERRIES. | NUTS. | NAME AND ADDRESS. |
|---|---|---|---|---|---|---|---|---|---|---|
| **EASTERN COUNTIES.** | | | | | | | | | | |
| ESSEX | Under; bad | Under; good | Average; good | Average; good | Average; good | Over; good | Over; good | Under; bad | Average | William Smith, Birch Hall, Colchester |
| | Over average; very good | Under average | Average | Over average; very good | Under average | Over average | Over average | Over average; very good | | W. F. Bowman, Hylands, Chelmsford |
| | Over average | Average | Average | Average | Average | Over average | Average | Average | .. | Henry Lister, Easton Lodge, Dunmow |
| | Average; good | Under; good | Average; very good; Morellos over; very good; | Average; good | Under; very good | Under; very good | Average; good | Under; good | Over; very good | James Vert, Audley End, Gardens, Saffron Walden |
| **SOUTHERN COUNTIES.** | | | | | | | | | | |
| BERKS | Average | Very good | Good average. | Very good | Full crop | Moderate crop | Raspberries, very good; Gooseberries and Currants plentiful | Good crop | Moderate | Thomas Jones, Frogmore, Windsor |
| | Average | Average; good on walls | Average | Thin; under average | Average | Average; good | Average | Average | Average | James Tegg, Pearwood, Wokingham |
| | Very scarce | Very scarce | Scarce | Very scarce | Full crop | Full crop | Full crop | Good | Good, and plenty of Walnuts | Robert Fenn, Cottage Farm, Sulhamstead, Reading |
| MIDDLESEX | Over; very good | Over; very good | Average | Over; very good | Over; very good | Over; very good | Average; good | Average; very good | Good | Alexander Dean, Bedfont |
| | .... | Over average | Under average | .... | Average of some kinds | Over average | Red and Black Currants over average | Average | Average | Thomas Perkins, Stanmore |
| | Average | Average | Over average | Under average | Average | Over average | Average | Average | .... | John Woodbridge, Syon Gardens, Brentford |
| | .... | Average | Under average | Under average | Over average | Over average; very good | Average | Average | ... | A. F. Barron, Royal Horticultural Society |
| | Under average | Over average good | Average; good | Average; good | Over average good | Over average; very good | Average; good | Average; good | .... | William Bates, The Gardens, Poulett Lodge, Twickenham |
| SURREY | Average; very good | Average; good | Average; bad | Average; good | Under; good | Over; very good | Over; very good | Over; very good | Over | J. Burnett, The Deepdene Gardens, Dorking |
| | Average | Under average | Over average | Average | Average | Over average | Average | Average | Over average | W. Denning, The Gardens, Coombe Lane, Kingston-on-Thames |
| | Over; good | Under, except on walls | Over; good | Over; good | Average | Over; good | Plentiful and good | Over; very good | Average | A. Evans, Lythe Hill, Haslemere |
| | Average; good | Average; very good | Average; good | Average; good | Average; very good | Over average; very good | Average; good | Over average; very good | Average; good | J. Tanner, Tandridge Court, Godstone |
| | Average; good | Over; good | Average; very good | Average; good | Over; good | Over | Average; good | Over; good | Average | Jas. Child, Garbrand Hall Gardens, Ewell |
| | Medium | Light | Scarce | Average | Very fair | Light crop | Heavy crop | Good crop, but late | .. | Wilson Smith, Farnham Castle |
| | Average; not many grown | Average | Average | Average | Average | Under | Average | Average | Over | James Gold, High Ashurst, Dorking |
| | Over average; good | Over average; good | Average | Average | Over average; good | Over average; good | Over average; good | Under average | Over average; good | Thos. Silience, Nonsuch Park Gardens, Cheam |
| KENT | Average; good | Over average; good | Average; good | Under average; good | Under average | Over average good | Average; good | Over average good | Average | R. Gray, Chevening, Sevenoaks |
| | Over | Average; very good | Average; good | Over | Under | Over; very good | Average | Under; small | Over; great promise | George Bunyard, Old Nurseries, Maidstone |
| | Average | Over average; very good | Over; very good | Average | Over; very good | Over; good | Over; good | Over; good | Over; good | H. Cannell, Swanley |
| | Average | Bad | Under average | Average | Bad | Average | Average | Average | Good | Fredk. Deuxberry, Cobham Hall, Gravesend |
| | Average; very good | Average; very good | Average; good | Average | Under average | Under average | Full average | Average; good | Over average very good | John Charlton, 37, Royal Parade, Tunbridge Wells |
| | Average | Average | Over average | Average | Under average | Average | Black Currants bad; red Currants average, very good | Average; very good | Over average very good | Charles Haycock, Barham Court, Maidstone |
| | Average; good | Under; good | .. .. | Over; good | Under | Under | Average; good | Average; good | Average | Correspondent, Bedgebury, Hawkhurst |
| | Average; very good | Under average; Damsons excepted | Under average; poor | Average; good | Under average | Over average; very good | Average; good | Average | Average | G. Gold-smith, Houselands, Tonbridge |
| | Under | Under | Average | Under | Over | Over | Under | Average | Average | F. Bridger, Penshurst Place |
| | Under; good | Under; good | Average; good | Over; good | Average; good | Average; good | Under; good | Average; good | Over; good | A. Waterman, Preston Hall Gardens, Aylesford |
| | Average | Over average | Over average excellent | Average | Over average | Over average | Over average | Over average, very fine | Average | Joseph Rust, Eridge Castle |
| SUSSEX | .... | Total failure | Average | Fair average | Much below average and blighted | Over average | Very good | Over average | Much above average | Ben. Coombe, Wiston Park Gardens, Steyning |
| | Average; very good | Under | Average | Average; very good | Average | Average | Average | Average; good | Over average | F. Rutland, Goodwood |
| | Under | Average | Good | Average | Very good | Very good | Good | Very good | Under average | Sidney Ford, Leonardslee, Horsham |
| | Average | Under average | Average | Over average good | Over average | Average | Average; good | Average; good | Average | John Halsey, Cowdray Park, Midhurst |
| | Average; good | Under average | Under average | Over average good | Under average | Average; good | Average | Over average; good | Over average | Alex. Reid, Possingworth Gardens |
| HANTS | Under average | Under average | Under average | Fair crop | Very good | Good | Good and fine | Abundant | Promises very good | Philip Edwards, Fowley Gardens, Liphook |
| | Under average | Under average on walls; very bad | Under average; Morellos over average and good | Average; good | Over average; good | Average on walls; standard trees under average; fruit dropped off | Over average; very good | Over average; very good | Average | Wm. Smythe, The Gardens, Basing Park, Alton |
| | Over average; very good | Under average; good | Average; good | Over average; very good | Average; good | Over average; very good | Over average, good | Over average; very good | Under average | W. Wildsmith, The Gardens, Heckfield, Winchfield |
| | Average; good | Under | Average | Over average; good | Over average; good | Average; good | Over average, good | Average, good | Average | F. Thirlby, Broadlands, Romsey |
| | .... | Under | Sweet, under; bad; Morellos over; good | .... | Average; good | Over; very good | Average | Under; bad | .. .. | F. D. Myles, The Gardens, Appley Towers, Ryde, Isle of Wight |
| WILTS | Very good | Average | Good | Under average | Good | Average | Very good | Good | Average | Wm. Crapps, Bowood Gardens, Calne |
| | Average | Under average | Average | Average | Under average | Over average | Average | Average | .... | J. Hirschfeld, Heytesbury |
| | Under average | Under average, | Under average | .... | Over average | Over average | Average | Over average | Over average | Thos. King, Devizes Castle |
| | Under average | Under average | Over average | Over average | Over average | Average | Average | Average | Average | H. W. Ward, Longford Castle Gardens, Salisbury |
| | Under | Under | Over | Under | Over | Average | Over | Over | Average | W. Pratt, Longleat Gardens, Warminster |
| DORSET | Average | Bad | Under | .. .. | Under average | Average on walls | Under average | Over average | Average | John Powell, Bisington Gardens, Puddletown, near Dorchester |
| | Under average | Average | Under average | Average | Under average | Average; good | Over average | Average | Average | William P. Leach, Bryanston Gardens, Blandford |
| | Under average | Under | Average | Under | Under | Average | Under | Over average; good | .... | James Beck, Critchel House, Wimborne |
| | Under; bad | Average | Over; good | Average | Average | Under | Average | Average | .... | J. Uphill, Encombe |
| | .... | Average | Good crop of Morellos | .... | Average; good | Average | Over average; good | Average; good | Average | J. W. Mills, Minterne |

CONDITION OF THE FRUIT CROPS—(*Continued*).

| COUNTY | APRICOTS. | PLUMS. | CHERRIES. | PEACHES AND NECTARINES | APPLES. | PEARS. | SMALL FRUITS | STRAWBERRIES. | NUTS. | NAME AND ADDRESS. |
|---|---|---|---|---|---|---|---|---|---|---|
| **WESTERN COUNTIES.** | | | | | | | | | | |
| HEREFORD ..... | Average; good | Under; bad | Over; good | Under; good | Average; good | Average, good | Over; very good | Over; very good | Under | William Nash, Bryngwyn Park |
| | Average; good | Under average; bad | Under average, except Morellos | Under average; bad | Over average; very good | Average; good | Over average; very good, except Gooseberries | Over average; very good | Average; very good | J. C. Downton Castle Gardens, Ludlow |
| | Under; good | Under; good | Average; good | Over; very good | Average; fair | Under; good | Over; very good | Over; good | Average | William Coleman, Eastnor Castle, Ledbury |
| | Over average; very good | Under average | Average; good | Under average | Average | Average; good | Average | Average; good | Average | Wm. Rowbree, The Gardens, Garnons |
| | Under average | Average | Average | Under average | Under average | Under average | Very good | Very good | Very good | E. C. Gaselthine, Sholdon Court Gardens, Leominster |
| | Under; good | Under; bad | Under | Average; good | Over; very good | Over; very good | Over; very good | Over; very good | Over | K. McKenzie, Allensmore Court |
| | Average | Under | Average | Average | Average | Average | Gooseberries average; Currants over average | Over average | . . | Arthur Ward, The Gardens, Stoke Edith Park |
| | Average | Under | Under | Under | Under | Average | Average | Average | Average | Charles Denning, Holm Lacy Gardens |
| WORCESTER .... | Under | Under | Under | Average | Over | Under | Over | Average | Over | R. Palmer, Hagley Gardens, Stourbridge. |
| | Under; very good | Average; good | Over; good | Under; bad | Average; very good | Over; very good | Over; very good | Average; good | Over; good | Walter Child, Croome Court, Severn Stoke |
| | Average; good | Under; good | Average; good | Under; bad | Average; good | Average; good | Average; good | Over; very good | Average; good | Wm. Crump, Madresfield Court, Malvern |
| | Average; good | Average; good | Average; very good | Average; good | Average; good | Average; good | Over average | Over average; good | Over average; good | John Austen, Witley Court, Gardens |
| GLOUCESTER .. | Average; good | Average; good | Average | Under average | Average; good | Over average; very good | Average; good | Average; good | Under average | Alexander Scott, The Gardens, Sherborne Park, Northleach |
| | Under; bad | Average | Morellos average | Average | Average | Average | Average; very good | Average; good | .... | Samuel Wathen, Kingscote Park |
| | Average; good | Average; good | Average | Over average | Average | Over average | Over average | Over average | Average | John Sowray, Highnam Court Gardens |
| | Very good | Very bad | Under average | Under average | Average | Over average | Over average | Over average | Over average | Mr. Greenaway, Doddington Park, Chipping Sodbury |
| | Average; good | Under average | Under average | Under average; good | Average; good | Average | Over average; very good | Over average, very good | Over average | R. Keedle, The Gardens, Kingsland, Newnham-on-Severn |
| | Good | Under average | Good | Under average | Under average | Very good | Very good | Good | Very good | Arthur Chapman, Weston Birt, Tetbury |
| MONMOUTH..... | Average; good | Under; bad | Average; good | Under | Average; good | Average; good | Average; good | Over; very good | Average; promising good | E. Mansel Davis, Llanover Court Gardens, Abergavenny |
| SOMERSET ..... .. | Under | Average | Over | Under | Over | Average | Average | Average | Over | W. Hallett, Cossington Farm, Bridgwater |
| | .... | Average | Good | Bad | Over | Good | Average | Very good | .... | Henry Jones, Cricket St. Thomas |
| | Under average; good | Under average | Average; good | Average; good | Over average | Under average | Average | Average; bad | Over average | W. Iggulden, Marston House Gardens, Frome |
| | Average | Under average | Average; fairly good | . | Under average | Average on wall. | Average; good | Average; very good | Very few | John Chalmers, Orchardleigh Gardens, Frome |
| DEVON ... . | Average; good | Over; good | Average | Average; good | Average; good | Average; good | Average; good | Average, were very good at first, but now suffering from drought | Walnuts good | David Powell, The Gardens, Powderham Castle, Kenton, Exeter |
| | .. | Average Under average | Average Under | Good Bad | Average Under average | Good Average | Very good Abundant, good | Under average | . . | E. Geary, Eggesford Gardens |
| | Average crop and healthy | Average; Green Gage very good crop | Average | Average | Over | Average | Average | Under | Walnuts average; Cobs and Filberts under | George Baker, Membland Frederick Jackson, Bicton, Budleigh Salterton |
| | . | Under average; good | Morellos over average; good | Over average, very good | Average; good | Average; good | Over average, very good | Over average, very good | .. | G. J. Barnes, Stoodleigh Court, Tiverton |
| | Over average | Under average | Under average | Over average | Full average | Below average | Fair average | Very good; full average | Below average | James Enstone, Wear, near Exeter |
| CORNWALL | .... | Under; small | Average; small | Average; small | Average; small | Average; small | Over; fine | Average; small | Average; late | C. Lee, Boconnoc Park, Lostwithiel |
| | Over average | Average | Under | Average | Average | Under | Over average | Under; bad | Few grown | James Murton, Pencalenick, Truro |
| | .... | Under Under | Average Under | Over good Good | Average Under | Average Average | Average Good | Average Good | Under .. | George Knox, Port Elliot Carnsham, Lehidy Park, Camborne |
| **WALES.** | | | | | | | | | | |
| BRECON ..... | Average; good | Under; good | Average; good | Average; good | Under average; good | Under average; good | Under average, very much blighted | Average; good | | Albert Ballard, Glanusk Park, Crickhowell |
| CARMARTHEN | | Average | Above average; good | Average; good | Average | Average | Very good | Average | .... | Lewis Bowen, Edwinsford, Llandilo |
| CARDIGAN... ... | . | Average | Average | Average | Average | Under; bad quality | Average, except Gooseberries | Over average | Average | H. Howard, The Gardens, Castle Malgwyn |
| CARNARVON ... ... | .... | Under | Under | Under | Over | Under | Over; very good | Over; good | .... | Allan Calder, Vaynol Park |
| GLAMORGAN .. . | Over; good | Under | Average | Over; good | Average | Over; good | Over; good | Average | .... | J. Muir, Margam Park, Taibach |
| MERIONETH .. .. | Under | Under; good | Average; very good | Average | Over; very good | Average; good | Average | Over | .... | J. Bennett, Rhug Gardens, Corwen |
| MONTGOMERY .. . | Average | Under | Average | Under | Average | Over | Under | Average | .... | W. Lee, Powis Castle Gardens, Welshpool |
| PEMBROKE .... ..... | .... | Under average | Average | Average | Under average | Under average, bad | Good | Good | Average | Geo. Griffin, The Gardens, Slebech Park |
| **IRELAND.** | | | | | | | | | | |
| ANTRIM .... ... ... | .... | .... | Average; good | .... | Average; very good | Average; good | Average; bad | Over; good | .... | George Porteous, Garran Tower, Belfast |
| CARLOW .. .. .. .. | Under | Over | Over | .... | Over | Under | Average | Average | Average | Thomas Bennett, Oak Park |
| CAVAN ..... | .... | Under average | Under average | Under average | Over average; good | Average | Over average | Over average; very good | .... | James Philps, Londesborough Lodge, Belturbet |
| CLARE ..... . | .... | Under | Average | Average | Average | Under | Under | Average | Under | W. Wilson, Dromoland Gardens, Newmarket-on-Fergus |
| DUBLIN ... ... | Over | Average | Average | . . . | Average | Under | Average | Over | Under | J. Eldon, Brenan town House |
| FERMANAGH .... . | Under | Under | Good; average | Average | Very good | Average | Good; average | Very fine | Average | William Majee, Florence Court |
| KILKENNY .... . | Under | Under | Much under | .... | Over; good | Under | Average | Over; good | Average | William Gray, Woodstock, Innistioge |
| WESTMEATH ..... . | Under | Under | Average; good | Under; bad | Over; good | Under | Under; good | Average | Under | John Igoe, Garden Vale, Athlone |
| **CHANNEL ISLANDS.** | | | | | | | | | | |
| GUERNSEY ... ... | Average | Over | Average | Average | Over | Over | Over | Average | .. | Charles Smith & Son, Caledonian Nursery |
| JERSEY ... . | Under; bad | Average; good | Under; bad | Average; good | Average; good | Average; good | Over; very good | Under; good | . . | Charles B. Saunders, St. Saviours |
| SCILLY ISLES ... | . | Average | .. | .... | Average; good | Average | Average; good | Average | .... | Geo. D. Vallance, Tresco Abbey Gardens |

# The Flower Garden.

THE flower garden, or that part of it occupied by the summer bedding plants, will now, or will shortly, be at its best, and the enjoyment of it will be greatly enhanced by keeping all its surroundings and occupants in trim condition. Walks should be frequently rolled, verges and edgings clipped, and the lawn be mown weekly. The plants forming the groundwork and pattern of the flower-beds should be kept in regular order by pegging or pinching, and the design preserved as trim as when first marked out. What is known as carpet bedding can only be successfully accomplished by strict and almost daily attention to these points of management. It will be well to make notes of the best arrangements, and also of desirable improvements, in order that, if thought well, they may be carried out next year, noting any kinds of plants that may be discarded as failing to give satisfaction. Low-growing Sedums and Saxifrages, Echeverias, Antennarias, and Cerastiums, and all plants of that type which are used for carpet bedding, should have their flowers kept picked off.

Mesembryanthemum cordifolium variegatum and Leucophyton Brownii and Alternantheras, all will require to be pegged until they have covered the ground, after which they should be kept pinched. The large growing Echeverias which are used as dot plants should have all their flowers picked off. Calceolarias, Verbenas, and Violas require liberal supplies of manure-water. The heat of the past week and the north-east wind that prevailed have been very trying to all plants. All kinds of Alternantheras, Coleus and Iresines will be very much improved if sprinkled daily with clean water over their foliage; it will brighten their colours and much improve them during the hottest weather. Now that the Rhododendrons and Azaleas have done flowering let all the seed-pods be removed, as by so doing the plants will be much benefited.

### Roses.

These are now in full bloom, and I never saw them looking better, but they are quite ten days later than last year. The overblown flowers should be picked off and all straggling shoots shortened back so as to produce a later crop of flowers. Budding should have every attention as soon as the stocks and buds are ready. *W. Smythe, The Gardens, Basing Park, Alton.*

# Plants and their Culture.

### SEED SOWING.

Now will be a very good time to sow another pinch of Cineraria seed. The stock obtained therefrom will make better progress than from the earlier sown seed; the plants will not have time to reach the dimensions attained by those, but their growth will be of that size and habit of plant which, in a Cineraria, is, in our opinion, of essential service, viz., the plant of medium size, the habit dwarf and compact, the foliage of good substance and not too large. The large and flaccid foliage of early sown stock is oftentimes lost to the plant in its younger stages of development, at least before there is any indications of bloom, leaving a plant, when in full flower, without the embellishment of healthy foliage.

It often happens, also, that there is a lack of room in pits, frames, and cool-houses during the dull days of late autumn and early winter, when, with the usual prevailing atmospheric moisture any overcrowding must be prejudicial to all plants of rapid growth; if, therefore, by late sowing, we can modify these disadvantages and provide the Cineraria with more room after the Chrysanthemum season is over, we shall have better reason to be satisfied with the plants when in flower. Late sown seed will also produce a stock of plants that are not so liable to attacks of aphis as the early ones.

A late batch of Primula sinensis will be equally useful in this same respect, but earlier grown examples of this popular greenhouse annual are far more needed than in the case of the Cineraria. The earliest of the Primulas for autumn use should soon be in their flowering-pots, and the later batches shifted into smaller sizes, either from their seed-pans or those into which they have been pricked off, when large enough to handle. Slight shading only should be used for the genera on which I have just commented; this is, however, preferable to growing them in frames under the shade of a wall with a north aspect. In the latter position the growth may be more rapid, but, as before stated, not of an enduring character.

### Other Annuals.

A little seed of the dwarf Ten-week Stock, if sown soon, will prove of much service in the autumn, when sweet-scented flowers are valued; Mignonette likewise should be sown now for the same period, and a few weeks later on for winter and spring work, bearing in mind with the culture of this annual to ram the soil very solidly into the pots before sowing the seed thereon. We have done this almost to the bursting of the pots, and had the best results thereby. If some old mortar rubbish is at hand it should be mixed with the soil, and a covering of fowls' dung laid over the drainage. The dwarf Scabious, Corn-flowers (Centaurea cyanus minor), Rhodanthes, and Nemophila insignis, should also be sown at once for flowering in pots during the winter season. Of the last-named annual another sowing should be made in a month's time for spring blooming in the conservatory, for which purpose it is most floriferous and very distinct, being well adapted for the edgings of ornamental baskets or suspended from brackets. Towards the end of the month will be ample time for sowing herbaceous Calceolarias, taking the precaution to stand the seed-pan over a saucer containing water, in order to guard against slugs feeding upon the young plants. *James Hudson, Gunnersbury House, Acton.*

# Fruits Under Glass.

### GRAPE HOUSES.

In late houses which contain late kinds of keeping Grapes intended for bottling by-and-bye a free ventilation should be afforded. In this case very large bunches are not so desirable, because sometimes they are not found to keep good so long a time as moderately-sized bunches. These should be well thinned, and in the operation care should be taken to cut the foot-stalks of the berries removed, quite short, as otherwise the remnant often produces mould, which is inimical to sound keeping. Late Grapes unquestionably should be fully ripe by the end of September. If this is not likely to be the case, much can be done towards this end by means of utilising sunheat to the full whenever possible. In late Muscat-houses with borders inside, see that the roots in them have ample supplies of tepid manure-water in a much diluted state, and keep the mulch constantly moist at this period, in order to counteract the evil consequences arising from the foliage scorching. Keep a little air on at the top ventilators constantly, and if possible avoid using shading materials. If scorching should take place, let the lateral growths which the Vines are making be allowed to fill up defective places, and afford that protection to the fruit which is absolutely indispensable, and, moreover, necessary to finish the fruit perfectly.

### The Cherry house.

If this structure is furnished with movable sashes these should be taken off the trees altogether now, so that they can have the benefit of natural influences entirely. This course of treatment is a considerable advantage to Cherry trees that are forced, year after year consecutively, inasmuch as it tends to arrest the precocious development so apt to occur with such trees. Keep the foliage of these trees clean and healthy by washing them regularly every day when dry, with a forcible use of the syringe; let the roots also be well attended to as regards water.

### Trees in Pots.

These should be brought out-of-doors at once, stood on a bed of ashes to stop the worms getting into the pots, and in a sunny position. The pots should be surrounded with partly decomposed leaves or manure to prevent the scorching rays of the sun shining too fiercely on them. Syringe the trees overhead in dry weather, and attend to the watering regularly, giving them weak manure-water once or twice a week if it be required. As the watering will now be the most important operation, see that it is done judiciously.

Plum trees in pots, from which the fruit is gathered should now be treated in the same way as recommended for Cherry trees in pots. *G. T. Miles, Wycombe Abbey.*

# ALPINE PLANTS.

ONOSMA TAURICA.—This but little known plant, introduced from the Caucasus in 1801, has many recommendations in favour of its extended use in our gardens. The bright yellow, tubular flowers are of exceptional beauty, distinct in form, and deliciously fragrant; and, further, the plant is an almost perpetual bloomer from early June until molested by the winter frosts. A nobler or handsomer plant we have not got if well placed on the rock garden, or a finer and more desirable thing in both form and colour. It delights in a dry, sunny, and well exposed situation, therefore elevated rockwork will be found the best position, and where the pendent flowers can be seen to advantage. Although usually described as herbaceous, this is hardly true of the plant, for it usually retains much of its fresh foliage throughout the winter. In the variety, or species, O. stellata, we have, so far as general appearance is concerned, a miniature of O. taurica, with less beautiful, less bright flowers.

### Silene alpestris.

The Alpine Catchfly (Silene alpestris) is certainly one of the prettiest and most interesting of rock plants, and possessing every qualification that renders an alpine plant worthy of our best care and attention. It is of neat, compact habit, thrives well under ordinary circumstances if left alone, and produces during June an abundance of pure white flowers, which the notched petals further improve, thrown well above the shining green masses of leaves. This plant, it should be remembered, is rather impatient of disturbance, and when once thoroughly established should be allowed to roam at will, and thus alone can perfect sheets of bloom be secured.

### Ranunculus.

Amongst Ranunculaceous vegetation I would especially notice Ranunculus as being a distinct and showy border plant, with bright yellow blossoms as double and compact, though of perhaps less size than those of a Persian Ranunculus. Like the majority of its relatives this desirable plant is best at home in rather damp loam, or a mixture of the latter and peat; indeed, the finest clump here is thriving luxuriantly under similar circumstances to Iris cristata, Cypripedium spectabile, the Parnassias, and other damp-loving subjects. It is readily increased by division of the root, and being a plant of hardy constitution, is but little affected thereby.

### Anthericum liliastrum.

St. Bruno's Lily (Anthericum liliastrum) is at present very effective, the fragrant silvery-white, Lily-like flowers being borne in great profusion. It is a neat-growing, elegant plant, that one cannot have too much of, and which for effect during June has but few equals. The flowers, which are faintly tipped with green, are borne on stems averaging a foot or more in height and during fine weather remain good for a considerable time. The variety major, which grows to double the latter's height, is a valuable addition, the large fragrant flowers and grassy-like leaves being both distinct and effective. Good loam with a moderate supply of water is all it wants, and, perhaps, during severe winters it will be all the better of a slight covering of ashes as a safeguard against frost.

### Primula farinosa.

Than the Bird's-eye Primrose (Primula farinosa) there is no prettier plant of the early summer. Somehow it is seldom seen in a happy state, most people having not yet got the knack of growing it freely. Coddling in pots will not do, nothing suiting this pretty native better, than a cool, boggy spot amongst rich vegetable soil. The slender powdery stems, half-a-foot in height, surmounted with graceful lilac-purple, pink, rose, or deep crimson flowers, are at present very effective, and a worthy occupant of even the more prominent portions of the rock garden. *Emergo.*

(*To be continued.*)

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| TUESDAY, | July 14 | Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms |
| WEDNESDAY, | July 15 | Bedford Rose Show. Sale of Ornamental Flowering, Fuchsias, Calanthes, Clematis, &c., at Stevens' Rooms. Manchester Show. Wirksworth, Derby, Rose Show. |
| THURSDAY, | July 16 | Sale of Imported Orchids, Seeds, &c., at Stevens' Rooms. Sale of Stove and Greenhouse Plants and Orchids, at Eltham Park, by Protheroe & Morris. |
| FRIDAY, | July 17 | Sale of Valuable Sugarcanes and other Grasses, at Protheroe & Morris' Rooms |
| SATURDAY, | July 18 | Wirral Rose Show. |

BY a singular, or was it a designed, coincidence? the *Times* of a few days since published two letters, one relating to the British (see p. 51), the other to the Alpine Flora. With the main object of these letters we and all our readers will be in full sympathy. The botanist proper looks upon marauders such as are alluded to in the two communications we have referred in much the same light as the scholar would regard him who, having found one of the lost books of LIVY, proceeded to destroy it. In truth, the greatest ravages are usually the result of pure ignorance. Those who know and those who merely appreciate do not do these things. The botanist desires to accumulate information respecting the structure, affinities, life-history, relation to insects, to soil and climatal conditions of the plants in question. He takes the keenest pleasure in observing facts and in learning some at least of the lessons these loveliest of instructors convey, not only as to the present condition of the world in which he lives, but also as to the former states of its surface. The interest is with the past equally with the present. It is absolute, it is concrete, at the same time that it is relative and abstract. From whatever point of view the botanist proper may chance to observe the wild plants of this or any other country, his feeling of reverence necessarily forbids him from compassing their destruction. His tendencies are all the other way. Again, the botanist, if he be not more imbued than other people with the love of all that is beautiful, that is good, that is true in Nature, is at least as much so, and hence he is not to be feared as an uprooter of rare and beautiful specimens.

Then there is the amateur botanist or gardener. He, too, is scarcely to be pointed at as a Goth or a Vandal; he may have the collecting instinct strongly developed—too strongly in many cases—but he is generally wise enough to remember the adage which warns us not to kill geese that lay golden eggs.

As to the professional collector, whose interest is mainly a mercenary one. Well, we do dread some of these gentlemen. No one who sees, as we do from time to time, the rubbish heaps of dead Orchids that may be seen—we will not say where—but will dread the destructive agency of this class of plant-collectors. Men who do this sort of thing in Central America, Borneo, Burmah, or wherever it may be, must not be aggrieved if we class them with the wretched tramps who root up Ferns and wild plants to sell in our markets and streets, or on our railway platforms. We say advisedly some, for it has been our privilege to know many who, labouring diligently in their allotted vocation, are yet quickened and restrained by their botanical conscience.

Another class of maurauders are merely thoughtless, and among these must be reckoned hundreds of alpine tourists who pluck, and by thoughtless purchase, encourage peasants and children to grab at plants simply because they are pretty. We do not believe that much real mischief is done by this latter class; they have no very potent mercenary motive, and for the most part they have not enough knowledge to be able to compass much damage.

What is the remedy for these evils? Are Acts of Parliament or Cantonal Edicts of any use? We doubt it: nay we rather fear that by drawing attention to the supposed value of the plants and the profit to be obtained from them such enactments might tend to increase, rather than palliate the evil? Popular sympathy is apt to be on the side of the smuggler, and the creation by law of an offence—we speak with deference in the presence of Mr. Justice WILLS—is not sound law, nor does it commend itself to the conscience of the layman's mind. What, then, is to be done? What do we do in the case of marauding birds? Do we not often find it cheaper and more effectual to feed them and so save our fruit and our Peas than to maintain an army of watchers and vivisectors for their destruction. If we can ensure effectual protection by means of nets or other means, well and good; but if our directly repressive measures must be, from the nature of the case, partial and ineffectual, as generally happens, then it were better to fall back on indirect means, and go round the mountain whose summit we cannot climb. It appears to us that this is the principle upon which the Society for the Protection of Alpine Plants at Geneva, for which Mr. Justice WILLS asks the suffrages of plant lovers, acts; and from what we have ourselves seen of Mr. CORREVON'S procedures, we are bound to say that we believe that, by their means, a much larger and less intermittent supply of alpine plants may be obtained than would ever be secured by other means; while at the same time no ruthless depopulation of the mountain-side would ensue, and specially the chance of extinction of rarities would be materially lessened. Plants which are rare in Nature are so because, from some or other cause, they are not in full harmony with the conditions under which they happen to be. It is the gardener's privilege to be able to rescue such plants from the fierce struggle of relentless competition, or the storms of adverse fate. Let him, therefore, be called to the rescue, and the requirements of all classes interested will thus be more fully consulted, and with less injury to the sentiment of the lover of Nature, than by any other means we can think of. We append Sir ALFRED WILLS' letter:—

"The number of English tourists who visit Switzerland is very large, and increases yearly. Not the least charm of that country is the rich flora which adorns the valleys, the margins of the glaciers, and the alpine slopes. The impoverishment or destruction of this flora must largely diminish this charm, and must be regarded with serious apprehension on this if on no higher ground. It is a lamentable truth that, so far as some of the loveliest Swiss plants are concerned, their destruction is already an accomplished fact, while the entire flora of the country has undoubtedly undergone a palpable and grievous impoverishment during the last few years.

"The chief causes of this evil are—first, the reckless gathering of plants by the crowds of visitors who pour into Switzerland every year; secondly, the wholesale uprooting of plants for sale to tourists by professional plant-hunters, who penetrate constantly into remoter alpine regions in search of specimens, and even wilfully destroy large numbers of plants in order to increase the rarity and so enhance the market value of some species.

"In either of these cases specimens are obtained under conditions wholly unfavourable to life, being gathered carelessly, often in the height of their flowering season, and subsequently carried or sent by rail or post over long distances, with little or no soil, exposed to heat and drought, as well as to all kinds of rough usage. It is believed by those who have most carefully studied the subject that not more than 10 per cent. of such plants survive.

"It should also be remembered that all annuals and biennials depend for the perpetuation of their kind upon the production of fresh generations from seed, and hence that their extirmination is effectually secured by the constant abstraction of their flowers alone. It may be assumed that every lover of Nature and every true botanist will welcome any means by which these acts of vandalism, whether deliberate or resulting from carelessness and ignorance, may be checked.

"A society has lately been formed in Geneva (Association pour la Protection des Plantes) the aim of which is to compass this desirable result. Its operations are mainly directed—first, to the education of public opinion on the subject; secondly, to the supply of all the rarest and most attractive alpine plants to the public at prices below those usually paid to the plant hawkers who vend their specimens in the market places of Geneva, Lausanne, Vevey, &c., and in the best possible condition instead of the very worst. With this view the Society has taken a large garden (Jardin Alpin d'Acclimatation, 2, Chemin Daucet, Plainpalais, Genève), which is laid out in rockwork, bog, &c., and devoted solely to the raising of innumerable Swiss plants from seed and to the sale of them well established in pots at low prices.

"Such plants are vastly more robust and independent of local and climatic conditions than any which have been transplanted from their native habitats, and can always be brought or sent home with the certainty that every species which is amenable to cultivation will have the best chance of living and thriving in its new home.

"The Society is already prepared to supply a large number of plants in vigorous health in pots at low rates, and it appeals to all English tourists to visit the Alpine Garden, to purchase from this establishment such plants as they desire to possess, and rigidly to abstain from encouraging, directly or indirectly, the misdeeds of the professional Swiss plant-hunter. To this appeal it is very earnestly to be hoped that all English travellers in Switzerland will cordially and loyally respond.

"Funds are much needed for extensive works still required for the full prosecution of this admirable scheme, and Dr. MAXWELL MASTERS, F.R.S., 41, Wellington Street, Covent Garden (*Gardeners' Chronicle* office), has kindly consented to receive subscriptions for transmission to the Society. Lovers of Nature may also give valuable help by taking shares in the undertaking, which are issued at 100 f. each. These may be obtained from its enthusiastic director, M. H. CORREVON, at the Alpine Garden, Geneva, who is also desirous of entering into arrangements with the curators of botanic gardens, with nurserymen who devote themselves to the culture of hardy perennial and alpine plants, and with private growers for the supply of specimens or of seeds. He will also gladly forward the reports of the Society, which are extremely interesting, lists of plants on sale, and any other information, upon application, to any one who feels an interest in the effort which the Society is making to popularise the cultivation of a very charming class of plants without encouraging the systematic destruction of the mountain flora, which lends to the scenery of Switzerland one of its subtlest charms."

—— RHODODENDRON MANGLESI ×. — Messrs. VEITCH & SONS recently favoured us with a truss of this magnificent hardy Rhododendron, raised by them, and with which they appropriately associate the name of the late Mr. MANGLES, whose premature decease our plant-lovers and gardeners so earnestly deplore. As to the beauty of this cross, the illustration (fig. 9) speaks for itself; suffice it to say that it was raised as a cross between the glorious Himalayan R. Aucklandiæ and the garden hybrid R. album elegans. In its calyx it shows traces of R. Aucklandiæ, as also in the bold white flowers. Our illustration was taken from a specimen which flowered in the open air at Coombe Wood, but experience is required in order to enable us to know whether it will prove hardy in other localities. In any case, no one would grudge the slight protection such a glorious object would require.

—— THE FRUIT CROPS OF THE YEAR.—The materials which have come to hand in respect to the crops of the more important fruits of the United Kingdom help to support the belief of many persons capable of forming an opinion on the subject, that these would be found to be in only moderate abundance; and although the end of June, when the bulk of the returns reached us, is somewhat early in the year, we can yet see that the crop of Apples will be greater than that of last year, but less than that of 1883, and that Pears will afford an average crop, whilst the crop of Plums is a poor one outside of the Home Counties and the Severn valley. Strawberries, now becoming more generally grown round the large centres of population, are a more than average crop, whilst the useful Currant and Gooseberry crop is generally abundant, so that the great preserving industries will be enabled to get the ingredients used, including sugar, at reasonable (and, we may hope, for the sake of the growers) and satisfactory prices. The cold weather in May, which included several nights in the middle of the month when 8° to 10° of frost were experienced, did much harm in the Northern, Central, and Eastern parts of England, and but little in Scot-



FIG. 9.—RHODODENDRON MANGLESI: HARDY HYBRID: FLOWERS WHITE. (SEE P. 48.)

land, where blossoming had been retarded, and in the Southern Counties of England, where it fortunately happened that the air was unusually dry, and the trees were tolerably full of foliage. In the most favoured districts the persistent falling of the fruit points to organs in the bloom injured by cold, but the period has now been reached when the loss from this cause will cease. The fruits grown on garden walls, or similarly protected, in the Home Counties are fairly abundant, in the West of England above the average, and the same may be remarked generally concerning these in all counties south of a line drawn across the country from the Wash to Bangor. In Scotland we find the fruit growing district of the Carse of Gowrie, with its exceptional salubrity, still suffered materially by the late spring frost, more so than in localities in which vegetation is always later. In Ireland good crops are spoken of, but very late, and will require a long warm summer for their proper ripening.

—— AN APPEAL.—A very painful case of distress has come before us, of which, we trust, the mere mention may serve in some measure to alleviate. Some months ago Mr. ROWE, formerly Gardener to Viscountess CLIFDEN, and of whom the record, as we learn, is such that any one might envy, died. It appears that, on leaving his situation, from no fault of his own, he went into business, and lost the savings of many years. At his death he left a widow and four children. About three weeks ago the widow also died suddenly, after having had a brief but painful struggle to provide for her children and herself. The four children are consequently left unprotected and unprovided for, and it is on their behalf that we insert this appeal. The Rev. F. S. THORNTON, of St. Sepulchre's, Northampton, has interested himself in the matter, and we shall be happy to forward to him any sums that we may receive for the purpose, and we trust that they may be many. The smallest contributions in such a case have a value of their own.

—— SMOKING IN THE CONSERVATORY, ROYAL HORTICULTURAL SOCIETY.—We publish the following note, and strongly endorse our correspondent's complaint :—

"Heatherbank, Weybridge Heath, July 7.

"I think a note in your paper might lead the Exhibition authorities to instruct their policemen to stop people smoking in the conservatory while a flower show is going on. To-day Tobacco-smoke mixed with the scent of the Roses. I asked several policemen if they had authority to stop smoking; they had not. As the conservatory forms part of the Exhibition, I believe neither the Royal Horticultural Society nor the Royal Albert Hall authorities have jurisdiction. "GEORGE F. WILSON."

—— EURYANGIUM SAMEUL.—This interesting Turkestan plant is now flowering at Messrs. JAMES DICKSON & SONS, Newton Nurseries, Chester. As the plant was strong, the flower-stem is about 10 feet high, sparsely branched, presenting a unique appearance in the hardy flower-garden. It is a singularly handsome foliage plant, producing large, freely divided foliage, reminding one of some of the Marattias, and many readers of the *Gardeners' Chronicle* will know the use of its dried roots in pharmacy. Mr. WARE, of Tottenham, also has this notable plant in bloom in his nurseries. Although its medicinal virtues are not very highly esteemed, or indeed known, in this country, the Chinese attach the highest importance to it. It is mentioned by Dr. LANDELLS in his recent work on Central Asia.

—— ROSE PRUNING.—The following experiments are suggestive. Three vigorous bushes of Charles Lefebvre, Paul Néron, and NOBLE'S Queen of the Bedders respectively, were thus treated. All the branches on each were divided into three sets. One set of each on the same plant was hard pruned late in March, one set had the buds rubbed off as they appeared for several weeks in succession, and one set of branches was left alone to grow as it would. The result is at this date that the branches which were let alone have been bearing in profusion flowers of fair average quality for the last fortnight; those that were hard-pruned are only now expanding a comparatively few flowers no better than those which were let severely alone; while those in which the buds were rubbed off systematically till about the end of May are weak and sickly, with few or in some cases no flower-buds, and what there are very backward and small. It should be stated that the growth in all cases in the garden where these experiments were conducted has been unusually vigorous this spring, with an almost complete absence of greenfly, maggot, or mildew. In most seasons greenfly or maggot very seriously check and deform the first flowers, so that as far as they go these experiments would seem to indicate, that in an ordinary season moderate pruning by checking and retarding the first growth enables the Roses to escape the attacks of their enemies, but if these latter do not put in an appearance, unpruned Roses do best. Of course, we have not the exhibition-table in view.

—— CISTUS FORMOSUS. — Mr. KETTLEWELL, Balrath Burry, sends us flowers of this bright yellow alpine plant—a beautiful carpet plant on sunny parts of a rock garden, or when planted in light ground in the perennial border, but where it should always have some flattish stones placed round it, to elevate the growths and to retain the warmth of the sun.

—— PHYLLOXERA IN GREECE.—The following official communication has been forwarded to us for publication :—

"Considerable alarm is felt here about the possible spread to this country of the Phyllokera, which is said to have appeared in the neighbourhood of Constantinople. Stringent measures will be adopted to prevent its introduction, the importation of all trees, plants, fruit, grass and hay from eastern countries, including Candia and Egypt, being prohibited under very severe penalties. Things are bad enough in Greece as it is, and the scourge, should it reach this country, would almost consummate its ruin from an economic and financial point of view. I have the honour, &c.,

(Signed) "HORACE RUMBOLD.

"The Earl GRANVILLE, K.G."

—— "THE AGRICULTURAL GAZETTE."—Our old friend and former associate has lately appeared in a new guise, and in an enlarged form. The Editorship is still retained by that most estimable man and sound agriculturist, JOHN CHALMERS MORTON, which is warranty enough for those who know him, and those who do not will do well to make his acquaintance, at least through the *Gazette*, as speedily as possible.

—— THE "BOTANICAL MAGAZINE."—The July number contains figures of the following plants :—

*Chrysophyllum imperiale*, t. 6823. — This is the noble stove foliage plant provisionally named Theophrasta imperialis, remarkable for its bold leaves, like those of the Sweet Chestnut in form, but larger, firmer, and deeper in colour. The plant having flowered, it has been determined to be a Sapotad, of the genus Chrysophyllum. Its native country is the province of Rio Janeiro. The specimen figured flowered in the Botanic Garden, Cork, where it was observed by Dr. HARTOG.

*Exacum affine*, t. 6824.—A Socotran Gentianad, discovered by Professor BAYLEY BALFOUR, with ovate leaves and small lilac flowers, described in these columns, May 10, 1884, p. 604, fig. 116.

*Narcissus pachybulbos*, t. 6825. — An Algerian species, very rarely seen in flower. It has very large bulbs, glaucous leaves, small white fragrant flowers, like those of the Paper-Narciss, in bunches. The specimen figured came from the garden of E. G. LODER, Esq.

*Corydalis pallida*, t. 6826.—A Chinese species, with very deeply cut leaves and elongated pyramidal loose racemes of yellow flowers.

*Rhododendron niveum var. fulva*, t. 6827.—Only differs from the type in the rich tawny pubescence on the under-side of the leaves and the deeper coloured flowers.

—— VANDA LOWII.—The fine specimen of this Orchid at Château de Ferrières, which last year bore eleven spikes of bloom, has this season seventeen. There is one leader, seven breaks, and 120 leaves, each 70 centimetres long. The total height of the plant, exclusive of the basket, is 1 metre 80 centimetres. The flower-spikes measure 2½ metres in length each, and bear 400 flowers.

—— ROSE CATALOGUE. — In the *Gardeners' Magazine* of July 4 is published the first instalment of what bids fair to be a very useful list of garden Roses, arranged alphabetically, and with indications of the class to which each belongs, the name of the raiser, the year of its introduction to this country, the colour, the size, and habit. None but those who undertake such a task know the labour involved, and that is one reason why people are so indifferent, not to say ungrateful, to the race of index makers.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—On July 3 the forty-second anniversary festival of this Institution was held at the "Albion" Hotel, Aldersgate Street, E. TIDSWELL, Esq., of Chigwell, in the chair. A numerous and influential company assembled, including Mr. G. Lambert, Master of the Patten-makers' Company; Mr. G Cutts, Senior Warden of the Fruiterers' Company; Mr. J. F. Aldridge, Major Grant, Colonel S. Clarke, Messrs. Nutting, Gibbs, Sherwood, Carter, Veitch, Dickson, Barr, Webber, Hopcraft, Shirley Hibberd, and others. The Chairman, in giving the toast of the evening—"Success to the Gardeners' Benevolent Institution"—said this Institution had now been doing useful service since the year 1838. Its first years of lingering existence have been succeeded by years of vigorous usefulness, and it had had 500 annuitants, receiving pensions of £12 and £16 per annum. It was gratifying to reflect that, as men engaged in commerce, they could yet feel they had contributed to smoothen the last days of many a poor sufferer. Owing to the generous donation of £500 by an anonymous donor, a legacy of £450, and the generosity of numerous contributors, these pensions were increased last Christmas from £16 to £20 per annum for men, and from £12 to £16 for women. At the present time 104 annuitants—fifty-four men and fifty women — were on the pension list of the Institution. One chief aim of the Society has been to endeavour to make gardeners feel the value of thrift, because they believed that it was right for every one to assist those who had first tried to help themselves; hence the fundamental rule of this Society was that any gardener who subscribed his guinea a year for fifteen years, or who gave his 10 guineas in one donation, should take precedence over any others who might be elected. Another principle was to make their expenditure for all efficient work as small as possible; and he was glad to say that nearly the whole of the funds went to the annuitants. After alluding in fitting terms to the fine productions of fruit and flowers contributed by members of the Institution, the Chairman touched on the great help that had been given by their Secretary at all times, and especially in getting together the Augmentation Fund. "The committee believed that the benefits accruing to the Institution were mainly due to his great efforts, wonderful assiduity, and great gifts. Immediately after the realisation of the hopes they had lately been working for, it was at once suggested that a testimonial should be presented to Mr. CUTLER, and he now had great pleasure in offering him a valuable gold watch and a cheque for £450. He was glad to say that 480 subscribers had contributed a sum of £505 up to that time, and if the sum should be swollen to £705 or £1005, no one would be more gratified than himself." Mr. CUTLER, who was enthusiastically received, expressed in a few appropriate sentences the pleasure he felt on the receipt of such a handsome present. Short speeches followed by Mr. SIRLEY HIBBERD, the Master of the Fruiterers' Company, Mr. C. LAMBERT, Mr. J. R. BOURNE, Mr. SHERWOOD, Mr. B. S. WILLIAMS, and Mr. NUTTING. The Secretary announced at the close of the entertainment subscriptions amounting to £750.

—— HIGH PRICED ORCHIDS. — The following prices were obtained on July 3 at Messrs. PROTHEROE & MORRIS' sale rooms :—Lælia elegans, imported mass, 25 guineas; Cattleya Reineckiana superbissima, one good plant, 33 guineas; C. Arnoldiana, one good plant, 29 guineas; Odontoglossum species in flower, 18½ guineas.

—— GARDENING APPOINTMENTS.—Mr. TOWERS, late Gardener at Syston Park, Grantham, as Gardener and Bailiff to Mrs. KINCAID SMITH, Wood End, Chichester.—Mr. EDMUND WILLIAMS, Head Gardener at Peasmarsh Place, Sussex, has been appointed Head Gardener to JOHN PARSONS, Esq., Ashurst Place, Langton, Tunbridge Wells. — Mr. THOS. OLDHAM, late Head Gardener to E. HOMAN, Esq., J.P., Friern Watch, Finchley, has been appointed Head Gardener to Miss ONSLOW, Upton House, Alresford, Hants.

## THE PRESERVATION OF THE NATIVE FLORA OF GREAT BRITAIN.

WE (*Times*) have received from the Council of the Midland Union of Natural History Societies, including upwards of twenty natural history societies and field clubs in the Midland Counties, the following statement upon the subject of the preservation of the native flora of Great Britain :—

"The Mason College, Birmingham, June 30.

"It is a fact only too evident to the most superficial observer that many of our rarest and most beautiful native plants have already been, or are being, rapidly exterminated ; and it may be assumed that this extermination will be viewed with regret—even with indignation—alike by the student and by the ordinary lover of natural beauty, and that both will be willing to assist in any measures which may afford the prospect of arresting its course.

"The Council of the Midland Union of Natural History Societies bespeaks serious attention to the following brief statement of the causes of the rapid destruction of British plants, and of what it ventures to suggest as the best means of mitigating the evil. These causes appear to be mainly as follow :—

"1. The ravages of professional plant-hunters, who offer to the tourist, or to the general public by advertisement, plants attractive by reason of their beauty or of their comparative or absolute rarity.

"The large dimensions which this traffic has assumed are indicated by the number of such advertisements which appear in some of the gardening periodicals offering Ferns from Cornwall, Devonshire, Somerset, the Wye Valley, &c., at from 4*s.* to 7*s.* 6*d.* per 100, in named varieties ; Hymenophyllum tunbridgense and H. unilaterale at 2*s.* per square foot ; various species of Orchis, Saxifrage, &c., at from 2*s.* to 5*s.* per 100 ; bog Asphodel at 2*s.* per dozen, &c. ; or inviting tenders for Daffodils and Primroses at so much per 100,000.

"2. The operations of exchange clubs, the members of which are often asked to supply large numbers of the rare plants of their own districts in exchange for corresponding quantities of those of other neighbourhoods.

"3. The reckless gathering of plants, often taken with their roots attached or in seed, by botanists and their students in the course of their excursions.

"4. The careless gathering of large numbers of specimens by individual botanists.

"Recognising that restrictive legislation or police interference are neither applicable nor desirable, the Council believes that it is by the indirect influence of example and the promotion of healthy public opinion that the evil in question can alone be combated.

"They therefore strongly urge the following considerations upon botanists, members of field clubs, natural history and other scientific societies, upon all lovers of Nature, and upon the public generally :—1. That they should rigidly abstain from encouraging or countenancing the purchase from professional plant-hunters of any native plants, for the sake either of their rarity or of their decorative value. 2. That botanists should resort to the assistance of exchange clubs, if at all, only for the purpose of obtaining such single specimens as are necessary to fill up blanks in their herbaria, using such assistance with discrimination, and excluding from their operations plants of great rarity. 3. That all teachers should inculcate on their pupils by precept and example the lamentable consequences of the wholesale or indiscriminate gathering of plants, especially with their roots or when in seed. 4. That individual botanists should seriously reflect on these consequences, and abstain from taking more than the smallest number of specimens indispensable for the purpose of genuine study, and even from taking any where the extermination of a particular species from a restricted habitat is threatened. 5. That tourists and amateurs should be urged to refrain from collecting plants of any degree of scarcity, especially when in flower or seed, it being certain that not 10 per cent. of those gathered under such conditions can possibly live after removal."

## STRIKING A LIGHT.

IN the new edition of Mason's *Burma* we read that among other uses to which the Bamboo is applied, not the least useful is that of producing fire by friction. For this purpose a joint of thoroughly dry Bamboo is selected, about 1½ or 2 inches in diameter, and this joint is then split in halves. A ball is now prepared by scraping off shavings from a perfectly dry Bamboo, and this ball being placed on some firm support, as a fallen log or piece of rock, one of the above halves is held by its ends firmly down on it, so that the ball of soft fibre is pressed with some force against its inner or concave surface. Another man now takes a piece of Bamboo a foot long or less, and shaped with a blunt edge, something like a paper-knife, and commences a sawing motion backwards and forwards across the horizontal piece of Bamboo, and just over the spot where the ball of soft fibre is held. The motion is slow at first, and by degrees a groove is formed, which soon deepens as the motion increases in quickness. Soon smoke arises, and the motion is now made as rapid as possible, and by the time the Bamboo is cut through not only smoke but sparks are seen, which soon ignite the materials of which the ball beneath is composed. The first tender spark is now carefully blown, and when well alight the ball is withdrawn, and leaves and other inflammable materials heaped over it, and a fire secured. This is the only method that I am aware of for procuring fire by friction in Burmah, but on the hills and out-of-the-way parts, that philosophical toy, the "pyrophorus," is still in use. This consists * of a short joint of a thick woody Bamboo, neatly cut, which forms a cylinder. At the bottom of this a bit of tinder is placed, and a tightly-fitting piston inserted composed of some hard wood. The tube being now held in one hand or firmly supported, the piston is driven violently down on the timber by a smart blow from the hand, with the result of igniting the tinder beneath.

Another method of obtaining fire by friction from Bamboos is thus described by Captain T. H. Lewin (*Hill Tracts of Chittagong, and the Dwellers Therein* : Calcutta, 1869, p. 83), as practised in the Chittagong Hills. The Tipporahs make use of an ingenious device to obtain fire ; they take a piece of dry Bamboo, about a foot long, split it in half, and on its outer round surface cut a nick or notch, about an eighth of an inch broad, circling round the semi-circumference of the Bamboo, shallow towards the edges, but deepening in the centre until a minute slit of about a line in breadth pierces the inner surface of the Bamboo fire-stick. Then a flexible strip of Bamboo is taken, about 1½ foot long and an eighth of an inch in breadth, to fit the circling notch or groove in the fire-stick. This slip or band is rubbed with fine dry sand, and then passed round the fire-stick, on which the operator stands, a foot on either end. Then the slip, grasped firmly, an end in each hand, is pulled steadily back and forth, increasing gradually in pressure and velocity as the smoke comes. By the time the fire-band snaps with the friction there ought to appear through the slit in the fire-stick some incandescent dust, and this placed, smouldering as it is, in a nest of dry Bamboo shavings, can be gently blown into a flame.

* It is also made of a solid cylinder of buffalo's horn, with a central hollow of ⅞ on an inch in diameter and 3 inches deep burnt into it. The piston, which fits very tightly in it, is made of ironwood or some wood equally hard.

## FORESTRY.

### DRAINING.

THE advantages of thorough drainage are at all times visible in well-managed plantations, but where a superabundance of moisture is allowed to accumulate the evils have seldom been so marked as during the present season. Attend to open drains in the woodland, and see that no accumulations of leaves and twigs impede the progress of the water. This should receive particular attention in recently thinned Oak woods, and where, from the thinness of the trees, a rank undergrowth prevails. The mouths of culverts and closed drains should be regularly examined at least once each fortnight, and during wet stormy weather it may be found necessary to have them cleared even once or twice a week.

### GENERAL WORK.

The season being comparatively late, barking operations should now be all but completed. Harvesting of the bark has been considerably retarded by the wet, unsettled weather that has generally been experienced during the latter half of June. No opportunity should now be lost in having any that may be yet unsecured placed beyond the reach of danger. Remove all timber, firewood, and branches at once, as later on considerable damage to the stools and young shoots is almost unavoidable. Repair plantation roads, and towards the end of the month clear them of all bracken, bramble, or rough grasses, at the same time paying attention that no overhanging branches can interfere with the passer-by. New roads and walks may now be formed, and stones and gravel got ready for future repairs. Prune and trim hedges, and keep them free from weeds at their roots ; and during dry, warm weather, finish up the tarring, painting, or varnishing of all outdoor erections. Carriage drives and walks should be cleaned and edged, surface inequalities put right, and grass mown for a couple of feet back along their seeds, to prevent seeding.

Tree growth looks remarkably well this season, which, to a great extent, may be attributed to the mild, rather damp nature of the past and present seasons. Coniferous trees are at present specially attractive, from the difference of tints in the old and young foliage. Cones we have seldom seen so abundant, many of the rarer Pines and Firs bearing for the first time an abundant and healthy crop. Where, more particularly in the case of rare and valuable Coniferæ, a few sound seeds are desired, we have often found it necessary to assist Nature in the operation of fertilisation. It may here be well to state that in the Abies and Picea groups young trees, although they may produce an abundant crop of cones, are rather tardy in bearing male flowers. (I have noted one exception to this rule.) Under these circumstances it is important, in order to procure good seed and economise the pollen, to assist Nature in the operation. The proper time for impregnating the cones is when the tree is in full flower, and the following is the system pursued :—When the pollen is ripe, which is ascertained by gently shaking a branch bearing some male flowers (which will cause the pollen to leave the flowers in a small cloud of yellow dust, like sulphur), it should be collected upon white paper, and applied to the cones with a camel's-hair pencil, beginning at the top, and brushing it in all round to the base ; and, if possible, a dry, sunny day should be chosen for the operation. *A. D. Webster.*

## DISEASE AND DECAY IN FRUIT.—I.

### OIDIUM FRUCTIGENUM

EVERY person who has walked in a fruit garden or orchard where Apple trees are grown must have noticed fallen Apples diseased with Oidium fructigenum, Schrader. The fungus is often extremely destructive to stored Apples when kept in damp or unventilated store-rooms ; the same pest destroys Pears, Plums, and other fruits.

The very familiar external appearance presented by an Apple diseased with Oidium fructigenum, is shown natural size in fig. 12, p. 53. The disease spots are generally arranged in concentric circles, like miniature Fairy-rings, one within the other, and each spot projects like a soft wart from the surface of the fruit. The warts are generally grey in colour, varying, however, in tint from cream to fawn colour, or different shades of grey.

The word "Oidium" is derived from the Greek, and means like an egg in reference to the shape of the conidia or spores ; "fructigenum" is from the Latin, and means born on fruit.

Species of Oidium are very familiar to gardeners in the mildew of Roses, O. leuconium ; of Vines, O. Tuckeri ; the white mildew of corn, O. monilioides ; of the Pea, O. erysiphoides ; and many others. The fungi just mentioned are often termed spurious species of Oidium, because they have been proved to be the early and imperfect condition of other fungi, and because they differ in other ways from what are recognised as genuine species of Oidium. It is difficult to characterise the difference in words, the general appearance of all species of Oidium being more or less similar. Still, a person familiar with these fungi can tell the difference at a glance. The genuine species, like the one before us, often grow in tufts and patches, forming warts, whilst the spurious ones form a thin white or grey powdery stratum. Under the microscope the genuine species have a more solid, lustrous, translucent, and generally robust appearance, as compared with the thin watery-looking spurious species.

An illustration of a spurious species is given in the powdery Oidium of Pea mildew, enlarged 400 diameters, in fig. 10, p. 52. I am not aware of any previous illustration of this Oidium in an English book. The

club-like growth of the Pea Oidium, O. erysiphoides, Fr., is shown at fig. 10, A, B, and C.; each club rises from a thread of mycelium, as at D, which has emerged as a germinal tube from an opening in the spore as at E. The germinating spore was originally borne by the perfect condition of the Pea mildew. The perfect fungus, which originally bore the spore at E, is named Erysiphe Martii, Lk.

If we take an Apple diseased with Oidium fructigenum, in our hands we find the tufts of the fungus seated on a portion of the skin which covers a soft, brown, and internally rotten portion of the Apple; the fungus has, in some instances, the power of changing the skin of the Apple to a jet-black colour; if we cut or break the Apple we always find the parts underneath the fungus-growth brown, watery, collapsed, decayed, and very soft. Each individual grey fungus-tuft is somewhat compact, though soft and powdery.

If we examine with the microscope a very small portion of the rotten brown substance taken from the interior of an Apple diseased with Oidium we find it traversed in every direction by the spawn or mycelium of the fungus. In some Apples this mycelium causes a highly disagreeable and bitter taste. The abundant spawn of this fungus, by appropriating to its own use the elaborated juices of the Apple, sets up putrescence and death in the fruit. The mycelium seldom produces spores within the Apple; but it bursts through the skin from within outwards, and there produces the Oidium tufts.

A fragment of one of these tufts of Oidium fructigenum, is shown, enlarged to 400 diameters, in fig. 11, and the great difference in general appearance between this fungus and O. erysiphoides, Fr. (fig. 10), is now apparent. Neither of the plants, however, can be termed altogether typical, as the species vary amongst themselves greatly. I am not aware of an illustration of Oidium fructigenum, in an English book, so the present figure, engraved from Nature, may be useful. Neither am I aware of any full description of the fungus.

The fruiting threads, or clubs, arise from an involved stratum of septate mycelium, as shown at the base of the illustration (fig. 11). The clubs of conjoined, lustrous, and translucent spores, or conidia, grow in long upright chains as shown, and it is remarkable that these spores (analogues of seeds) are almost invariably in pairs; that is, each individual conidium is not cut off from its fellows by a septum, or joint, but one septum only occurs to two conidia. This mode of growth is shown in the illustration. Some imaginative botanists would call a phenomenon of this class "conjugation," not simple fusion. It is not described under O. fructigenum, Schrader, in any books to which I have access. Another remarkable habit belonging to this fungus is, that some of the conidia open at the side as shown, and there produce secondary chains of conjoined spores after the manner of yeast fungi. Two conjoined conidia are shown at A, and three conidia still more curiously conjoined are shown at B. It is by no means uncommon to see three spores or conidia conjoined by a narrow band, and it follows that (if true conjugation takes place) there must in some instances be either two fathers or two mothers. But this fact need cause no surprise, for it is common to see two or more males (antheridia) attach themselves to one female (oogonium) in the fungus of the Potato disease (Peronospora infestans, Mont.). The peculiar shape of the conidia is shown further enlarged to 1000 diameters at fig. 11, C; each conidium is marked with fine, almost invisible, diagonally curved lines, as shown. It requires good eyes to see these lines; if some person who reads these lines tries to see them and cannot, it does not prove that they do not exist. I can always see them.

Oidium fructigenum, Schr., is highly infectious; if a few of the spores are placed upon a cut or broken surface of an Apple or Pear they immediately germinate, set up decay, and reproduce the Oidium. All Apples and Pears are not equally susceptible to infection, the Oidium grows with most rapidity and luxuriance on the exposed inner substance of soft ripe and juicy fruit.

In my experiments the fungus has never under any circumstances whatever pierced the skin of the Apple from the outside inwards; the skin of the fruit acts as impenetrable armour against the attacks of its foe. On the other hand, if the skin of the fruit is injured in the slightest degree, broken by a bruise, or pricked with the point of a fine needle, and the spores laid on the little injured place, germination immediately takes place, and the germ tubes invade the interior of the fruit by the gate thus opened for them. When the spawn-threads are once inside the fruit they make use of the sweet juices, and increase with great rapidity. The spawn-threads spread in radiating lines from a central spot (like the spokes from the centre of a wheel), and having now acquired extra potency from the absorption of the juices of the invaded Apple, Plum, or other fruit, the spawn-threads pierce the skin of the fruit from within outwards, and the grey tufts of the Oidium appear outside. As the

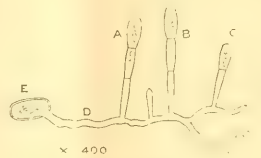



Fig. 10.—Oidium of the Pea.

first tufts appear at the circumference of the imaginary wheel it follows that the growth outside the Apple resembles a series of miniature Fairy-rings. After a temporary rest of from a few hours to a day the mycelium makes a fresh start within, and enlarges the circumference of the disease patch; a second crop of Oidia are then protruded through the skin of the Apple at the margin of the new growth within. The circle of spawn within the Apple or Pear, Plum, or other fruit, goes on widening and producing other circles of grey Oidia outside till

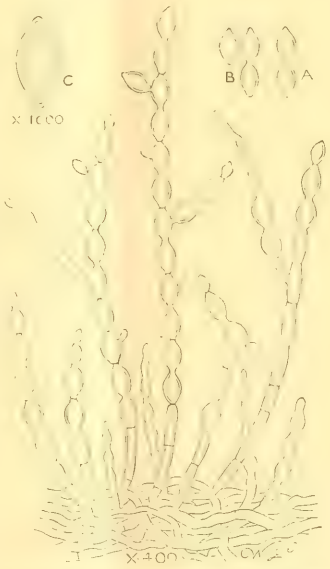



Fig. 11.—Fungus which causes disease in Apples, Pears, Plums, etc. (Oidium fructigenum, Schrader).

at last the whole fruit becomes a mass of infectious rottenness.

The spores or conidia borne outside the fruit are wafted away by the air to invade other fruits, but I have shown that the spores appear to be quite powerless over sound fruit. If, however, there is an orifice in the skin, however small, caused by a wasp, a scratch or a slight bruise, the spores, by their germinal threads, will quickly find an entrance to the interior of the fruit, and speedily complete its utter destruction.

From observations like the foregoing made on Potato tubers with the spores of Peronospora infestans, I am led to the belief that when the tubers are not properly moulded up slight injuries are likely to accrue to the Potatos by the action of the sun, rain, hail, wind, insects, &c., and that these slightly injured and possibly microscopically small places are the open gates by which the spores of the fungus of the Potato disease often attack the tuber. When the Potatos are well covered with mould the skin remains intact, and will, in most instances, effectually repel attacks from the germinating spores of Peronospora infestans, Mont.

There is no difficulty in accounting for the way in which Oidium fructigenum, tides over the winter, for, unlike the fungus of the Potato disease, which is generally only seen for a few weeks, or sometimes days, the Oidium of fruit may be seen at all times of the year. It is common in orchards and gardens in the summer and autumn, and it grows during the winter and spring months amongst the stored Apples of fruit-rooms, especially in fruit-rooms that are damp and improperly ventilated, and amongst sweating and bruised fruit.

In the fruit-rooms the spores of the fungus are produced in millions, and they either rest on the fruits or on the floors, ceilings, or shelves of the house. They have a stronger hold of life than the spores of spurious species of Oidium (as the Oidium of Vines, &c.), and they are able to rest before germinating.

The ravages of this Oidium may be kept within bounds by keeping the fruit-room perfectly dry, airy, and clean by cleaning the room thoroughly every summer before the fruit is stored, and by burning a small piece of sulphur about once a week during the winter and spring on a hot iron. The sulphurous fumes, when dissipated in the air, are fatal to all germinating spores.

Sometimes Potato tubers are attacked by a fungus which in habit and general external appearance so closely resembles Oidium fructigenum, to the unaided eye, that it appears identical, and one is constantly mistaken for the other by gardeners. The Potato fungus, which grows in grey concentric tufts, is, however, a totally different plant, named Spicaria Solani, Harting. It is a mere case of fortuitous (not "protective") resemblance. *W. G. Smith.*

## Home Correspondence.

**Leaf-cutter Bees and Rose Foliage.**—I enclose you samples of Rose leaves taken from a house. Probably all who saw these or similar samples would aver that the semicircular incisions in them had been made by caterpillars, as indeed it was my belief on first noticing leaves similarly treated. Watching, however, for the depredators I was surprised to observe a somewhat large wild bee, one about the size of an ordinary drone, alight upon the edge of a leaf, and commence with the greatest rapidity and precision, using its mandibles as shears, to cut a piece of the leaf clean out, and carry it away. Further watching showed the same process continually repeated, curiously enough the bee adopting the tactics of the man who sawed off the portion of the limb of a tree to which he was clinging; kept light grip with its feet to the portion being cut out, and the moment it was fully severed flying off, being, in this respect, better provided against a fall than was the unfortunate bipid. Further observation revealed the fact that there were two of these bees engaged in this work, and also that having found a hole in one of the rafters of the house where decay had set in, the insects would seem to have set up house and engaged in the furnishing it. Perhaps others may have found their Rose foliage similarly excoriated, and wondered how it was produced. Possibly the incident above related may help to solve the mystery. Of course I do not intend permitting these unwelcome visitants to continue their depredations, and should you like to see them I shall be pleased to secure and submit them for your inspection. *A. D., Bedfont.*

**Calochortus venustus.**—This charming variety is now in good condition with us. We planted the bulbs in a cold frame with south aspect, last November; the soil was made up of rich loam, leaf-mould, and sand in equal proportions, to the depth of 18 inches, with good drainage. The lights were entirely removed the third week in April; we are rewarded now with a profusion of bloom, one spike showing twelve flowers. This variety varies a little in the colour of

its blooms, the chief part of ours have bright lemon petals, with chocolate blotch in centre and slightly spotted, the colour and markings in the others being much lighter. *W. Kettlewell, The Gardens, Balrath Burry.*

**Seed Saving.**—The paper on seed growing, &c., at Swanley (p. 9) is very interesting, in so far as it describes varieties and products of fertilisation of diverse kinds of florists' flowers. What would have been of more interest—something as to the seed products of high-class selection and breeding—is not referred to, but it is a matter of great importance both to seed growers and the general public. I fear it must be regarded as an unquestioned fact that the nearer we approach to perfection in florists' flowers the farther do we find ourselves from seed bearing. Constant interbreeding seems to be productive of infertility, which even the most patient manipulation does little to correct. A gardener told me the other day that he had sowed with every possible care the moment received a 5*s.* packet of choice Primula seed, obtained from one of our leading firms, and raised from it only two or three plants. No one questions the entire integrity of the house in question, or the superior form of their Chinese Primula strains; but the fact illustrates what is true—that much apparently good seed from high-class flowers is infertile. Cinerarias, Calceolarias, and other florists' flowers show the same characteristics—a lack of pollen, and consequent lack of good seed. Inferior strains of these things will produce seed in great abundance, even without any attempt at artificial fertilisation. Very high-class strains seed only most sparsely even if fertilised. Thus the discrepancy often seen in seed stocks as represented and seedling productions, and which creates so much disappointment. This decadence in fertility is a heavy price to pay for our floral improvements in flowers, the production of which depends upon seed; but it is the result of natural laws. A knowledge of this matter should reconcile some who complain of high prices for good seeds to the incidence of the charge. *D.*

**Vegetables in the North.**—All vegetables are thriving well, and so far, have not suffered so much as usual from insect attack. Indeed, vegetation in general is unusually vigorous and healthy, and growth and foliage fully developed. *M. Dunn.*

**Children's Gardens.**—At the Police Orphanage at Twickenham there may be seen some forty-two gardens worked by the orphan boys. These are about half a rod in extent, and are in the keeping of two boys, one of whom is head gardener. Prizes were given for the best gardens by the local horticultural society the other day, when its exhibition was held in the Orphanage grounds, and much interest was of course aroused on the part of the youthful competitors. The superintendent of the institution, who is a devoted gardener, not only specially encourages the lads in their work but also gives them frequent lessons in elementary botany, with special reference to familiar garden flowers. These gardens are literally prizes in themselves for good conduct, and are highly appreciated. *A. B.*

**Cypripedium spectabile.**—At the foot of the east end of one of our hills this variety is now in good condition, our rich maiden loam mixed with a little peat and leaf-mould seems to make it a home. This is the third season we have had it. In the first instance we planted a small crown. The first season we had one flower, the second three. This season the plant (clump) has twenty-seven breaks, ten flower-spikes, and eleven flowers. We tried several of the other varieties, but they perished in out wet climate, not being sufficiently strong to start. *W. K., Balrath Burry.*

**Winter Blooming Carnations.**—I read with much interest "T. B.'s" graphic notes on "Seed Growing at Swanley," last issue, until I came to this paragraph, about which there has been some discussion and some misunderstanding. For several years I raised a batch of seedlings, which are sowed in February, transplanted any time in June or July, to where they are to flower. Those, as a rule, commence to bloom that were twelve months in the open air. The Moor, Mrs. George Hawtry, Andalusia, Miss Joliffe, Alegatière, &c., will do the same, but they will not bloom beyond October or November. Must it then be distinctly understood that to have those in bloom in winter or spring, they must be grown under glass? The word winter is misleading. *W. J. Murphy, Clonmel.*

**Ixora salicifolia.**—Good well grown flowering plants of Ixoras are very useful and showy, but how seldom we meet with them. Years ago I used to see this variety figuring occasionally at some of our exhibitions, which from its graceful habit and intense bright orange-scarlet flowers is very attractive. I was pleased to meet with a good plant at Woodbank, Dumfries (C. W. Scott, Esq.) the other day with over fifty trusses, many measuring 8 inches across. It is an object of great beauty as seen here. The plant in question is worked upon the old coccinea, which makes the best stock for it, so I was informed by Mr. George Cole, the gardener. *A. O.*

**Rhododendrons for Market.**—I have been much surprised to find that the sellers of cut flowers in London never keep Rhododendron flowers for sale. Why is this? If cut before being fully expanded, they will travel perfectly well. Every year I send many hampers of them to friends in London, and they arrive in excellent condition. Nor do they soon wither in water; if picked before they come to maturity they will last a week, a fortnight, or even longer in water. I have even seen an instance in which a truss of flowers lasted more than a month before it withered. I will say nothing as to the beauty of the flowers. No plant which I know will



FIG. 12.—DISEASE IN APPLES CAUSED BY OIDIUM FRUCTIGENUM, SCHW. (SEE P. 51.)

furnish bouquets on a large scale with the variety of colour which the Rhododendrons will afford, and this is true not only of the named sorts, but of the hybrids. Among these last the loveliest shades of pink, lilac, &c., may be found. Few shrubs have the same power of holding their own in woods or other bits of land already preoccupied by wild shrubs and plants, and in suitable situations and soils they will produce innumerable seedlings. If there were a sale for the cut flowers in London, tens of thousands of trusses could easily be sent every season. *Superiensis.*

**Late Broccoli.**—I saw in quantity so recently as the 3d ult., both in the kitchen gardens at Heckfield Place and at Bearwood, remarkably fine examples of Sutton's Late Queen, which seems to be one of the finest of late Broccolis. But for the time of year it might have been easy to mistake this grand Broccoli for the Autumn Giant Cauliflower, so large, white, and massive were the heads. At Heckfield the soil is deeply trenched, but very light and porous; at Bearwood it is altogether so stiff and strong that when baked, as it was the other day, it might well have borne a traction engine. A deep drain cut in the latter garden showed 4 feet of solid clay beneath the soil. I mention these matters to show that this Broccoli thrives equally well in both kinds of soil, as doubtless it will do well anywhere. Veitch's Model, with its large skittle-pin shaped and well-protected heads, was also in fine form at Heckfield, and it is certainly a grand late variety for private gardens, though I think less useful for market work, because it does not display its heads. I should think it would pay any market grower whose soil does Broccoli well to invest largely in Late Queen if seed can be obtained at a reasonable price. From the middle of May onward all kinds of field vegetables are scarce, and a good Broccoli should then prove a very profitable crop. Some market growers may object that such a late Broccoli is too long in the ground, and comes off too late to enable another summer crop to follow. Certainly the best succession would be found either in Celery, or, in the field, in white Turnips. *A. D.*

**Garden Refuse Disposal.**—Looking over the large kitchen garden attached to the Metropolitan Police Orphanage at Twickenham the other day, I was much interested to note the way in which Mr. Gardiner, the superintendent, disposes of his garden refuse, leaves, sweepings, &c. A piece of ground is always kept vacant, and a piece which trenching will improve. A trench 2 feet in width and depth is thrown out, and into this is placed all the refuse of the garden as collected. When full, and well trodden in, another trench is thrown out, and the soil covering the refuse in the first trench deeply, and of course raising the ground somewhat for a time. In the course of a year a large piece is thus treated and improved, and as the trenching and burying proceed perpetually, the soil in time becomes deeply worked and exceedingly fertile. *E. A.*

# Notices of Books.

**Madeira, its Climate and Scenery, &c.** By James Yate Johnson. London: Dulau & Co.

This, though nominally a third edition, is in reality a new book, and, what is more, it is an excellent one. "The writer has endeavoured to give, in addition to the usual information of a guide-book, such an account of the island in its chief aspects, as an intelligent visitor would desire to see." The author has in our opinion amply succeeded in his endeavour. In the introduction ample details are given as to the means of reaching the island, and copious hints are supplied to the traveller and visitor. Chapters on the history of Madeira, its government, manners, and customs, agriculture and physical geography follow, and then come details of special excursions to various places of interest. The fauna, flora, geology, and climate all come in for a share of attention, and, so far as we can judge from those sections with which we are most familiar, excellent abstracts are given. So far as temperature is concerned, the highest point yet recorded was 90° in July, 1882, the lowest 45°.6 in March—the mean temperature of the coldest month is 60°.3, in February; that of the three coldest months, January to March, being only slightly higher. August and September are the hottest months, their mean temperature slightly exceeding 72°. Rainy days vary from thirty-nine to ninety-nine, the mean annual number at Funchal being seventy-eight, the summer months being comparatively rainless. The mean climatal characteristics are the high winter temperature, the moderate summer heat, and the general equability. As a brief compendium of what intelligent readers and intending visitors are most likely to require, some knowledge of this unpretending little volume may be thoroughly recommended, the more so as ample references are given to works of greater magnitude for those in search of details that would be out of place in this handbook.

**Forests of Poland, Lithuania, &c.** (Oliver & Boyd.)

Dr. Croumbie Brown's untiring diligence receives fresh illustration in the publication of this little volume, the companion to many others from the same pen. The preliminary chapter is taken up with a graphic account of travelling in Russia, from the author's own experience, and from Mr. Mackenzie Wallace's well known book. The contrast between the author's earlier travelling experiences in Russia in 1836, and his more recent ones is indeed remarkable, as also the substitution of 2½*d.* as postage for a letter conveyed from London to St. Petersburg in four days for 13*s.* 6*d.* for a letter, the transmission of which occupied nearly three weeks. The little volume, in addition to statistical details relating to forestry, contains so much incidental matter that it may be taken up to read at odd times with pleasure, though it has little reference to forestry. In Poland we are told an endeavour has been made to introduce the most advanced forest management of the day—the block method, or *methode des compartiments* of the French, while in the Baltic provinces there are special regulations for forest management which are specified at the end of the volume.

# Reports of Societies.

## NATIONAL ROSE : July 7.

It shows how very dependent Rose exhibitors are on the state of the weather, that had the magnificent exhibition which was held at South Kensington on Tuesday been held on the previous day, or had the same sort of weather prevailed on the day of the show, we should have had to chronicle not as we now do, the most successful exhibition that the National Rose Society has ever held but one, and in which we should have to deplore a day of expanded and staring blooms, and for which all kinds of names would have had to be made. As it was, the excessively hot days of Saturday, Sunday, and Monday, had so crippled the resources of the smaller growers, that more than one-third of the entries fell through. This was not altogether an unmixed evil, for, had all been exhibited that were entered, it would have been difficult, notwithstanding Mr. Barron's well known fertility of resource, to have known where to have placed the stands ; as it was, every available space was occupied, and Roses overflowed in all directions. No boxes of spare blooms were required to fill up vacant spaces, and every coign of vantage was occupied. Many of the classes were placed in double rows, where it was possible to do so, and "a feast of Roses," such as perhaps never before was seen was held. Our memory goes back many years, and although some are ever praisers of the past, yet, whether for variety or excellence, we are inclined to think this was the finest Rose show ever held. It is essentially the amateurs' field day ; other places may have as extensive a display, perhaps more so, contributed by the growers for sale, but in this the amateurs have so many classes provided for them—the wants of large and small growers are so carefully thought of —that all have an opportunity of competing, and in no way perhaps is the interest of Rose growing more increased than by the ample opportunity afforded to all to engage in the friendly strife.

There were two especial features in this exhibition which call for remark—the novelty introduced by the new classes for Moss Roses, garden Roses, and buttonhole Roses. Some very taking stands in these classes were exhibited and attracted much attention ; in the class for garden Roses some old and well-nigh forgotten favourites were brought forward, and we cannot but rejoice on this step taken by the National Rose Society to popularise other than exhibition Roses ; it is a fitting corollary on their publication of the catalogue of garden Roses issued by the Society last year ; the other was the wonderful excellence and amount of the Tea Roses in all classes, whether of nurserymen or amateurs. No class of flowers has been more improved, or more increased in the extent of its cultivation or the number of those who grow them, than has this most exquisite and lovely tribe, mainly owing to the better knowledge of culture and to the cultivation of the seedling Brier which is so admirably suited as a stock. Go where one might through the exhibition one was met with lovely blooms, shown in many instances by those who a few years ago would have thought it impossible to have competed.

We never recollect an exhibition where the Roses stood so well as at this show, a cool breeze swept through the conservatory, the day was cloudy, the awnings and shadings were carefully placed, and when at the close of the day we went through the exhibition we never recollect to have seen so few Roses staring at one with open eyes as on this occasion. It were almost superfluous to add, that the arrangements under Mr. Barron's experienced hand were everything that could be desired, the judging was over by twelve and the members admitted to the private view, and the general public were admitted punctually at one o'clock.

### NURSERYMEN.

In this, the highest number, seventy-two, of distinct kinds, in single trusses, was shown, the 1st prize being taken by Mr. B. R. Cant, of Colchester. The blooms appeared to be of better quality than the exhibitor had brought to the Rose show at the Crystal Palace on the 4th, and were deservedly placed first. We specify the following as being some if not all of his best blooms—Marie Baumann, Madame Victor Verdier, Gloire de Vitry, Souvenir de Madame Boll, Souvenir d'Elise, a kind shown in good style in many stands this season ; A. K. Williams, by no means so good as last year ; Reynolds Hole, Horace Vernet, Comtesse de Nadaillac, Niphetos, another Rose nowhere seen up to the mark this year ; Madame Gabriel Luizet, Marie Rady, Beauty of Waltham, La France, Madame Welch, seldom shown —a beautiful distinct Tea, of a coppery colour ; Ulrich Brunner, and Madame Caroline Kuster. The 2d prize fell to Messrs. Paul & Son, Cheshunt, the finer blooms being Françoise Levet, Ulrich Brunner, Maréchal Niel, Mrs. G. Paul, Mons. E. Y. Teas, Countess of Rosebery, Camille Bernardin, and Queen of Queens. The Cranston Nursery Co., Hereford, were 3d, and Mr. C. Turner, Slough, 4th.

For the best forty-eight distinct Roses, three trusses of each, Messrs. Paul & Son, Cheshunt, secured the 1st prize, exhibiting duplicates of the varieties put up by them in the larger competition, and some fair examples were noticed of Madame Lacharme, Captain Christy, Etienne Levet, Madame Prosper Langier, Marie Baumann, Marie Rady, and Baroness Rothschild ; 2d, Mr. C. Turner, his Duc de Montpensier, Madame Margottin, Camille Bernardin, MadameHippolyte Jamain, Françoise Michelon, and Souvenir d'un Ami being of considerable merit ; 3d, Messrs. Keynes, Williams & Co., Salisbury ; 4th, Mr. B. R. Cant.

For eighteen Tea or Noisette Roses Mr. G. Prince, Oxford, took 1st prize, with a lot of much beauty, taking likewise the Society's Silver Medal for the best Tea Rose bloom, Comtesse de Nadaillac. The other extra fine blooms were Catherine Mermet, a kind that appears of good quality generally this year ; Anna Olivier, Souvenir de Paul Néron, Hon. Edith Gifford, Niphetos, Madame H. Marie Amand, Souvenir d'un Ami, and Madame H. Jamain—the last a very superior bloom ; 2d, Mr. B. R. Cant—Madame Welch, Innocente Pirola, Maréchal Niel, C. Mermet, Jean Ducher, Madame Bravy, and Madame Angèle Jacquier — the last named a fine example, partaking of the form of C. Mermet, and of a coppery-yellow colour ; 3d, Mr. C. Turner, Slough, Louis Gigot, Madame Margottin, and Catherine Mermet being among the best examples seen in the stand ; 4th, Messrs. Paul & Son, Cheshunt, with fine kinds, but inferior in size.

In the division of the nurserymen's class alloted to those not exhibiting in the classes previously noted, Messrs. Curtis, Sandford, & Co., Torquay, were placed 1st for forty-eight distinct single trusses—the finest specimens of their blooms were Devienne Lamy, Magna Charta, La France, Mdlle. Marie Lagrange, Merveille de Lyon, Star of Waltham, Madame Ducher, Victor Verdier, Etienne Levet, Camille Bernardin, Duchess de Morny, Annie Laxton, Sultan of Zanzibar, Dupuy Jamain, and Madame Leveque ; Mr. F. Cant, Colchester, was 2d, his finest blooms being Maréchal Niel, Le Havre, Madame Eugènie Verdier, Ulrich Brunner, Horace Vernet, Annie Laxton, Etienne Levet, Prince Arthur, Françoise Michelon, Baroness Rothschild, and Marguérite de St. Amand ; Messrs. J. Burrell & Co., Howe House Nursery, Cambridge, were 3d, with perfect but small blooms ; 4th, Mr. J. House, Peterborough, with medium-sized blooms.

In the class for twenty-four varieties in trusses of three blooms, 1st, Messrs. Curtis, Sandford & Co. ; 2d, Mr. J. House ; 3d, Messrs. G. Coolings & Co., Bath ; 4th, Messrs. John Jeffries & Son, Cirencester.

For twenty-four distinct varieties, single trusses, the 1st prize was awarded to Messrs. Kinmont & Kidd, Vauxhall Nurseries, Canterbury, for a fine stand of Roses, Kent not shining in the Rose field, this year at least, where light soil is found. Some very nice blooms came from this old established nursery, and we noticed in the stand Madame G. Luizet, Beauty of Waltham, Charles Lefebvre, A. K. Williams, Duchesse de Vallombrosa, Dupuy Jamain, Françoise Michelon, Reynolds Hole, Xavier Olibo, and Horace Vernet, all of them superior blooms. Mr. Mattock, nurserymen, New Headington, Oxon, was 2d, with sorts medium as to size ; Mr. J. Walker, Thame, Oxon, was 3d ; Mr. G. Mount, St. Dunstan's Nursery, Canterbury, 4th—the exhibitor receiving the Society's Medal for the best H.P. in the nurseryman's and open classes, Marie Baumann, that figured in the last-named stand.

For the competition for the best twelve Teas or Noisettes, Mr. G. W. Piper, The Nursery, Uckfield, took 1st prize, excellent samples being seen in C. Mermet, Souvenir d'Elise Vardon, Julie Mansais, Souvenir de Paul Néron, Innocente Pirola, Devoniensis, Souvenir d'un Ami, and Adam ; 2d, Messrs. Bunyard & Co., Maidstone, some good blooms of Souvenir d'Elise Vardon, Etoile de Lyon, and Comtesse de Nadaillac, being found in the stand ; 4th, Messrs. Burrell & Co.

### AMATEURS' CLASSES.

For the competition in forty-eight distinct single trusses, 1st, Rev. J. H. Pemberton, Havering, Romford, who took not only the Rose Society's Challenge Trophy for the best forty-eight Roses, but also the Silver Medal for the best H.P. in the amateurs' classes, with Ulrich Brunner. The blooms in his stand were of great substance, large, and full ; very good were Anna Olivier, Exposition de Brie, Madame Lambaud, Countess of Rosebery, Marquis de Castellane, Marie van Houtte. The 2d prize was awarded to W. J. Grant, Esq., Hope End Farm, Ledbury, for some beautiful fresh well-filled blooms. The kinds were mostly old favourites ; very fine were Françoise Michelon, and A. K. Williams. Mr. J. W. Girdlestone, Sunningdale, Berks, was awarded 3d prize for blooms of great size, but loose, and wanting in substance. The Rev. C. C. Hale, Woodmanscote Rectory, Uckfield, Sussex, took 4th prize.

For twenty-four single trusses, distinct, Rev. H. P. Roberts, Scale Rectory, Norfolk, was 1st, and his finest blooms were found in Caroline Kuster, A. K. Williams, Etienne Levet, Madame Eugènie Verdier, Baroness Rothschild, Xavier Olibo, Ulrich Brunner, and Anna Olivier ; 2d, J. G. Fowler, Esq., Woodford, Essex, Ulrich Brunner, Françoise Michelon, Centifolia rosea, and Louis van Houtte were the choicest examples.

For twelve distinct, three trusses of each, the winner of the Trophy again appeared as winner—Exposition de Brie, Madame Victor Verdier, Merveille de Lyon, Madame G. Luizet, and Pride of Waltham, being fine blooms ; 2d, J. W. Girdlestone—Marie Baumann, Amazone, Merveille de Lyon, and Marie Finger, having great merit ; R. N. G. Baker, Esq., Heavitree, Devon, was 3d—Ulrich Brunner and Madame G. Luizet appearing in first-rich Brunner and Madame G. Luizet appearing in first-rate condition ; Mr. J. P. Budd, 8, Jury Street, Bath, was 4th.

The competition for the best eighteen Tea or Noisette Roses, distinct (single trusses), brought some capital flowers together, the 1st prize being awarded to the Rev. F. Page Roberts—the finest in the stand being Marie Guillot, Catherine Mermet, Marie van Houtte, Jean Ducher, Comtesse de Nadaillac, Anna Olivier, Madame Welch, Caroline Kuster, La Boule d'Or, Souvenir d'Elise, Rubens, Madame Bravy, and Innocente Pirola ; J. W. Girdlestone, Esq., took 2d prize, his Louis Gigot, Madame Bravy, David Pradel, Niphetos, and Souvenir d'Elise Vardon, being fine blooms; 3d, Alfred Slaughter, Esq., Jarvis Villa, Steyning ; 4th, J. B. Hall, Esq , Larch Wood, Rock Ferry.

The best twenty-four distinct, single trusses, were— 1st, A. J. Waterlow, Esq., Great Doods, Reigate (gr., Mr. J. Browne), his finest blooms being seen in Henry Schultheis, Duc de Rohan, Lady Mary Fitzwilliam, Star of Waltham, Marie Rady, Pride of Reigate, Marie Finger, Madame G. Luizet, Etienne Levet, and Duchess of Connaught. Miss Watson Taylor, Manor House, Headington, was awarded 2d prize, the blooms of Marie Baumann, A. K. Williams, Madame Eugenie Verdier, and Abel Carrière being very good. 3d, R. West, Esq., Reigate.

For eight distinct varieties, in trusses of three each, Mr. Browne, gr., Great Doods, was 1st—Dupuy Jamain, Etienne Levet, Lady Mary Fitzwilliam, and Marie Rady being his best blooms. The Rev. W. H. Jackson, Stagsden Vicarage, Beds, was awarded 2d prize, and Etienne Levet and Marie Finger were the best blooms in the stand ; 3d, W. H. Wakely, Rainham, Kent, and Rev. E. L. Fellowes, Wimpole Rectory, Royston.

For the best eighteen distinct, single trusses—1st, Miss Baker, Holmfels, Reigate (gr., Mr. Budgeon). The finest examples of her Roses were Charles Lefebvre, Jules Finger, Dr. Hogg, Madame H. Jamain, Violette Bowyer, La France, Marquis de Castellane, and Françoise Michelon ; E. M. Bethune, Esq., Denne Park, Horsham, took 2d prize—Henri Ledechaux, Pierre Notting, and Marie Rady being some of his best blooms ; 3d, Miss Christy, Coombe Bank, Kingston ; 4th, Rev. E. L. Fellowes.

The best twelve Teas or Noisettes, single trusses, were shown by Mr. J. Browne, 1st—his Jean Ducher, Bouquet d'Or, Souvenir d'un Ami, Catherine Mermet, Caroline Kuster, Souvenir d'Elise Vardon, and Alba rosea being excellent ; 2d, Miss Baker. Maréchal Niel in this stand had an extraordinary deep yellow tint, although not so remarkable for size of bloom. 3d, Rev. E. G. King, Madingly Vicarage, Cambs ; 4th, W. H. Wakely, Esq.

E. B. Lindsell, Esq , Bearton, Hitchin, took the 1st prize for twelve distinct varieties, single trusses ; and Rev. A. P. Melliar, Tostock Rectory, Bury St. Edmunds, the 2d ; Rev. W. Wilks the 3d.

For the best nine distinct kinds, single trusses,—1st, Mrs. Fuller ; 2d, C. Eddy, Esq., Bramley Rectory, Basingstoke ; 3d, Rev. J. G. Hodgson, Saltwood Rectory, Hythe ; 4th, Julius Sladden, Badsey. Edward Horne, Esq , Park House, Reigate, was the winner of the class for six distinct single trusses, Rev. F. Taylor being 2d, Mr. J. Bateman, Twisden Road, Highgate Road, 3d ; Rev. F. R. Burnside, Chipping Camden, Gloucestershire, 4th.

In the competition for six Teas, distinct, single trusses, Rev. A. F. Melliar took the lead, his Boule d'Or being an extra fine bloom ; Julius Sladden, Esq., 2d ; Rev. G. P. Hodgson 3d.

### EXTRA CLASSES.

For twenty-four distinct, single trusses, twelve H.P. and twelve Tea or Noisette.—1st and Veitch Medal, Rev. W. H. Jackson, the finest examples in the stand being Marie Rady, Etienne Levet, Duchesse de Vallombrosa, F. Michelon, Duke of Edinburgh, Caroline Kuster, and Souvenir d'Elise ; Rev. H. A. Berners, Halstead Rectory, Norwich, was 2d, with a stand that had a superior number of points, but in which unluckily the proportion of H.P.'s to Teas was not preserved, hence its having to take the 2d place ; 3d, W. H. Grant, Esq.

For a basket of Teas, Hybrid Teas, or Noisettes, the 1st prize, a piece of plate, went to Eckroyd Claxton, Esq , Allerton, Liverpool ; 2d, Mrs. Cuthel, Chapel Croft, Dorking ; 3d, Rev. A. Cheales, Brockham Vicarage, Surrey.

For the best six single trusses of any H.P.—1st, S. P. Budd, Esq , with that generally good variety Ulrich Brunner ; 2d, G. Christy, Esq., Buckhurst Lodge, Westerham, with Mons. Noman ; 3d, J. Grant, Esq., with Constantine Fretiakoff ; 4th, E. M. Bethune, Esq. (gr., Mr. Harris).

In the last class for amateurs, that for six single trusses of any Tea or Noisette—1st, Rev. J. H. Pemberton, with Anna Olivier ; Miss E. C. Cuthell 2d, with Maréchal Niel ; 3d, Miss W. Taylor, with Catherine Mermet ; and 4th, E. M. Bethune, Esq., with Innocente Pirola. This was a greatly admired class, and the blooms were altogether of fine quality.

### OPEN CLASSES.

For the best twelve Teas or Noisettes, distinct (three trusses of each).—1st, Mr. G. Prince, taking also the piece of plate. The finest in this stand were Maréchal Niel, Catherine Mermet, Comtesse Nadaillac, a very beautiful flower, as was Souvenir d'Elise Vardon, and Jean Ducher ; 2d, Mr. B. R. Cant—Comtesse Nadaillac and Souvenir d'Elise being also fine blooms here, too, as was also Madame Welch ; 3d, Messrs. Paul & Son, Cheshunt, whose Souvenir d'Elise Vardon and C. Kuster were fine examples ; 4th, Mr. F. Cant.

For the best collection of garden Roses, not mentioned in the catalogue of the National Rose Society, there were some interesting stands set up, Julius Sladden, Esq., taking 1st prize for a stand containing, amongst others, Madame Filleon, Princess Clementine, La Capucine, Amabilis, La Ville de Bruxelles, Brugerie, Jules Margottin, Olga Marie, Miss Hansard, Narcisse, Honore, Fellemboure, and Madame Plantier—a number of pretty Roses, good for bouquets, button-hole flowers, and other uses where prettiness alone is a recommendation. Mr. J. Walker was 2d—Juno, Lane's

Single White Prolific Moss, Maiden's Blush, Captain Ingram, Blush China, being amongst the prettier sorts ; 3d, Messrs. G. Bunyard & Co., who had Crested Moss, Rugosa, Cannes le Coquette, Leda, and Paul Ricaut ; 4th, Mr. W. Rumsey, Waltham Cross.

Messrs. Paul & Son, Cheshunt ; the Cranston Nursery Co., Mr. G. Prince, and Messrs. Bunyard & Co., took the four prizes in the order of their names for twelve bunches of Moss Roses, in not less than eight varieties.

For the button-hole Roses, twelve bunches in six varieties—1st, J. Mattock, Esq. ; 2d, the Cranston Nursery Co. ; 3d, Messrs. Bunyard & Co.

### NEW ROSES.

For the best varieties of these not in commerce in England before 1883—1st, Messrs. Curtis, Sandford & Co., for Lord Bacon, Madame Rambaud, Melle d'Annia, Directeur Alphand, Mrs. G. Dickson, Madame Julie Gaulain, Madame Dellevaux, Mary Bennett, Admiral Seymour, Marguerite de Romane, Souvenir de Leon Gambetta, Baron de Rothschild ; Messrs. Paul & Son, Cheshunt, were placed 2d, with Marshall P. Wilder, a crimson ; Longfellow, purple ; Madame Francesque Reve, purplish-rose ; Sunset, fawn ; Madame Norman Neruda, purple-rose ; Eclair, crimson ; Grace Darling, M. Benoit Comte, a full crimson.

For the best twelve blooms of any new Rose not in commerce in England previous to 1883—1st, Mr. B. R. Cant, with M. Watteville, a pretty Tea variety. Messrs. Curtis, Sandford & Co. were 2d, with Alphonse Soupert ; Messrs. Cranston & Co. 3d, with Merveille de Lyon.

For the best twelve yellow Roses, single trusses, Mr. G. Prince was placed 1st, for fine examples of Comtesse Nadaillac, clear and well finished ; the Cranston Co. were 2d, with the same kind, but smaller flowers ; Mr. Turner was 3d, with Madame Margottin, fairly nice blooms.

For the best twelve white Roses, single trusses—1st, Messrs. Curtis, Sandford & Co., with very large and perfect Merveille de Lyon ; 2d, Mr. F. Cant, with the same variety ; 3d, Messrs. Paul & Son, Cheshunt, the same.

Messrs. G. Cooling & Son took 1st prize for the best twelve crimson Roses, with A. K. Williams ; Messrs. Paul & Son, Cheshunt, were 2d, with Alfred Colomb ; and Mr. G. Prince, with Ulrich Brunner.

For dark velvety-crimson Roses, twelve single trusses, Messrs. Curtis, Sandford & Co. took 1st prize with H.P. Jean Lillievre, a beautiful dark variety ; 2d, Messrs. Paul & Son, Cheshunt, with Abel Carrière—exquisite in its velvety look ; 3d, Miss W. Taylor, with Dr. Hogg.

For the best twelve single trusses of any Rose Mr. H. Bennett was an easy 1st, with the Rose of his raising, Her Majesty, showing it in splendid condition ; 2d, Messrs. Curtis, Sandford & Co. ; 3d, Mr. B. R. Cant, with Souvenir d'Elise ; 4th, Mr. F. Cant.

In new seedling Roses Mr. H. Bennett was the only exhibitor, taking the Gold Medal for Mrs. John Laing, a distinct Rose, light pink, with a silvery sheen on the petals, less in size than Her Majesty, and perhaps more generally available for decorative purposes, and with a delicious perfume.

Messrs. F. Woollard & Son, Rose growers and nurserymen, Cooksbridge, Lewes, had a nice collection of cut blooms of Roses, not for competition.

Messrs. J. Veitch & Sons, Chelsea, showed six boxes of capital Rose blooms, consisting of old and new varieties. Rosa lucida was likewise from the same firm ; it is an excellent kind for bouquet work or buttonhole, the calyx being peculiarly long, as in the old Moss Rose, but is glabrous and not mossy.

A striking display was made by a row of well-grown Souvenir de la Malmaison Canations (200) from Ascott, Mr. Leopold de Rothschild (gr., Mr. Jennings) having made himself famous by their cultivation. The plants were disposed in a straight line on the centre table, stretching at touching distance its whole length.

Mr. T. Ware, Messrs. Barr & Son, Messrs. Kelway & Sons, added to the attractiveness of the show by an exhibition of the choicest hardy perennial flowers.

## THE CRYSTAL PALACE ROSE SHOW: July 4.

FAVOURED by splendid weather this, the first great meeting of the competitors in Rose growing in the neighbourhood of the metropolis, gave the cue to what might be witnessed at the National and other shows in the following week. As had been anticipated the flowers were not so fine as they should have been, the cold intermittent sort of weather we have been subject to having checked and crippled bloom, the fact as to this being equally visible in the winning stands as in those of the less lucky competitors, notwithstanding culture always tells. The flowers have not fulled well, the eye is too often a conspicuous mark, petals are uneven in growth, marking where the cold, and maybe frosty night arrested their growth ; cross-eyed blooms were not rare even in winning stands ; even a premier bloom, in a later show, had such. Such being the kind of Roses seen as yet this year, we can only chronicle the feats of the contending exhibitors as exhibited on the show table.

Taking the open classes first, Mr. R. B. Cant, of Colchester, took the 1st prize for seventy-two distinct single blooms, with an even lot of flowers, very little superior to the next winning stand, rendering the decision of the judges a very near thing. Many old favourites figured in the collection, and were seldom absent from any of the bigger competing groups, viz., Catherine Mermet, Violette Bowyer, Marie Baumann, Souvenir d'Elise, Baroness Rothschild, Lady Mary Fitzwilliam, Madame Gabriel Luizet, Countess of Rosebery, Marquis de Castellane, A. K. Williams, Marie Rady, Caroline Kuster, Niphetos, Innocente Pirola, and Alphonse Soupert. The 2d prize in this competition fell to Messrs. Paul & Son, Old Nurseries, Cheshunt. In this collection there were good Xavier Olibo, Comte Rembrandt, Marie Verdier, Captain Christy, Belle Lyonnaise, and Beauty of Waltham. The 3d prize was awarded to Mr. C. Turner, Royal Nurseries, Slough.

For forty-eight, three trusses of bloom each, distinct, Messrs. Paul & Sons, Cheshunt, were placed 1st, with a nice even lot, very good being Abel Grand, Madame Eugènie Verdier, E. Y. Teas, Françoise Michelon, Madame H. Jamain, Mrs. G. Paul, and Centifolia rosea, Louis van Houtte, Mons. Noman, and Prince Arthur ; Mr. B. R. Cant was 2d, his Comtesse de Nadaillac, Duke of Teck, Madame Marie Verdier, and Ulrich Brunner being extra fine examples ; Mr. C. Turner was 3d with good blooms, that wanted a day or two more to develope them.

Mr. J. House, Peterborough, took the 1st prize for twenty-four varieties, three trusses each—Fisher Holmes, Exposition de Brie, Dr. Andry, Camille Bernardin, and Horace Vernet being amongst the best flowers ; Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, was 2d—Ed. Morren, Elie Morel, and Ferdinand de Lesseps being the pick of the blooms in this stand ; 3d, Mr. F. Cant, Colchester ; and Messrs. Cooling & Sons, Bath, received an extra prize for a meritorious stand of twenty-four trusses.

For twenty-four varieties, single blooms, distinct, Mr. J. House secured the 1st prize, the blooms of Maréchal Niel, Alfred Colomb, Lord Macaulay, Niphetos, and Charles Lefebvre, being his best ; Mr. F. Cant was 2d—Constantine Fretiakoff, Sir Garnet Wolseley, Abel Carrière, being nice blooms, and Catherine Mermet extra fine ; the 3d prize fell to the Oxford grower, Mr. Prince.

For eighteen Tea-scented and Noisette Roses, Mr. Prince headed the list, his Madame Welch, Jean Ducher, Devoniensis, and La Boule d'Or being very good blooms ; Mr. B. R. Cant was 2d—Catherine Mermet and Souvenir d'un Ami having extra quality ; 3d, Mr. C. Turner.

For a collection of yellow Roses, Mr. G. Prince took the accustomed lead in this class, the blooms of Comtesse de Nadaillac, Marquise de Sanina, Françoise Kruger, were, as on this best, the whole being better than any we have seen as yet of the kind ; 2d, Messrs. Paul & Son, Cheshunt, whose Madame Falcot, Marie van Houtte, and Madame Berard, were of much good quality ; the 3d prize fell to Messrs. J. Burrell & Co., Cambridge.

For white Rose, in trusses of three—1st, Mr. B. R. Cant, good, big and fresh being all he showed, Violette Bowyer, Niphetos, and Merveille de Lyon especially so ; 2d, Mr. W. Rumsey ; the 3d prize was withheld, a good Rose often classed and nearly always sold as a white one, viz., Madame Hippolyte Jamain, being included in a very nice lot, but as it is a pink Rose it caused the disqualification of the stand.

In collections of pink-coloured Roses Messrs. Paul & Son, Cheshunt, were 1st—Julie Touvars, Duchesse de Morny, and Claude Bernand being the best blooms ; Mr. B. R. Cant was 2d—La France, Mons. Noman, and Madame G. Luizet were the finest flowers in this lot ; 3d, Mr. J. Mattock, New Headington, Oxon—nice selection but of unequal merit.

The prizes for a collection of crimson Roses were awarded, 1st, to Messrs. Paul & Son, Cheshunt—Jean Sury, Duc de Rohan, A. K. Williams, Beauty of Waltham, Mons. E. Y. Teas, &c., were the pick of the stand ; the 2d to Messrs. G. Bunyard, Maidstone, whose Dupuy Jamaio, Richard Laxton, and Bartholomy Joubert were fine blooms ; and 3d, Mr. Rumsey.

For velvety crimson Roses Messrs. Bunyard took the 1st prize, the blooms of Rosieriste Jacobs, Chas. Darwin, Sultan of Zanzibar, and Prince Arthur being of good quality for Kent Roses this year ; 2d, Mr. B. R. Cant, whose Louis van Houtte and Abel Carrière were extra good blooms ; 3d, Mr. W. Rumsey.

For Maréchal Niel Roses the 1st prize was withheld, Mr. B. R. Cant taking the 2d.

For eighteen trusses of any Tea or Noisette kinds Mr. F. Cant, Colchester, was placed 1st, with Souvenir d'Elise—fresh and not over-bloomed ; 2d, Mr. B. R. Cant, with the same kind ; 3d, Messrs. Paul & Son, Cheshunt, with nice blooms of Jean Ducher, of medium size. An extra prize was awarded to Mr. C. Turner.

For eighteen trusses of Marie Baumann—1st, Mr. B. R. Cant ; 2d, Messrs. Paul & Son, Cheshunt ; 3d, Messrs. H. Low & Co., Bush Hill Park, Enfield.

The two prizes awarded for eighteen Roses of Prince Camille type fell to Messrs. Paul & Son and Messrs. H. Low & Co., respectively, the first-named showing the rich dark crimson Abel Carrière.

For eighteen Roses of Françoise Michelon, or similar, Messrs. G. Paul & Son took the 1st prize, with a superior lot of Ulrich Brunner, fresh and even as to size ; the 2d and 3d falling to the Cranston Nursery Company, Hereford, and Mr. B. R. Cant.

For eighteen Roses of Lady M. Fitzwilliam, as by right, the 1st prize fell to the fortunate raiser, Mr. Bennett, Shepperton ; 2d to Mr. S. P. Budd, Bath ; and the 3d to Mr. B. R. Cant.

The prizes for eighteen Roses of A. K. Williams—1st, Messrs. G. Paul & Son, Cheshunt, for blooms of fairly even quality and size ; 2d, Mr. G. Mount, St. Dunstan's, Canterbury ; 3d, Mr. W. G. Grant, Hope End, Ledbury.

Mr. House took 1st prize for eighteen bunches of W. A. Richardson ; Mr. F. Cant was 1st for Niphetos, eighteen trusses ; and Mr. B. R. Cant, 2d ; Mr. Prince, the 3d.

### AMATEUR CLASSES.

For forty-eight varieties, distinct (single trusses), a great many stands were shown, the same kinds being noted in those that were present in the open classes, and in so far as the winning stands were concerned, the quality was equally as good as in those. 1st, Mr. Ridout, gr. to T. B. Heywood, Esq., Woodhatch Lodge, Reigate—Magna Charta, Merveille de Lyon, Violette Bowyer, Madame G. Luizet, Ed. Morren, and Charles Darwin being conspicuous as good examples ; 2d, Rev. J. H. Pemberton, Havering, Romford—Will Warden, Marie Montet, Marquis de Gibot being his best blooms ; 3d, Mr. A. Slaughter, Jarvis Villa, Steyning.

For twenty-four varieties, H.P., distinct, Mr. Gray, gr. to the Earl of Stanhope, Chevening Park, was 1st—Madam C. Wood, Marguèrite de St. Amand, and Marguerite Brassiac being amongst his best blooms ; 2d, Mr. G. Christy, Buckhurst Lodge, Westerham ; 3d, Mr. R. E. West, Reigate.

For twenty-four varieties, in three trusses of each, Mr. T. W. Girdlestone, Sunningdale, took 1st prize—Madame Langier, climbing Captain Christy, Ulrich Brunner, Thos. Mills, Marie Finger being some of the most noticeable blooms ; 2d, Mr. J. Browne, gr. to A. J. Waterlow, Esq., Great Doddi, Reigate ; 3d, Rev. J. H. Pemberton.

For twelve varieties, a class which included the best Roses seen at the show, Mr. E. B. Lindsell, Bearton, Hitchin, Herts, was 1st ; Mr. J. Browne 2d, Mr. E. Wilkins, Lyndhurst, Sutton, 3d ; an extra prize being awarded to Mr. E. Bethune, Denne Park, Horsham.

For Tea-scented Roses Mr. A. Slaughter took the 1st place, Mr. Bethune the 2d, and Rev. H. A. Berners the third.

Amongst the minor attractions may be named Messrs. Laing & Co.'s Begonias, of which the names of the certificated varieties will be found below. Hardy flowers and others from Messrs. Cannell & Son ; Begonias from Messrs. H. Cappin & Sons, Shirley, Croydon ; Lilium auratum from Mr. C. Turner, and a large show of Roses at the eastern side of the main transept, brought by W. Paul & Son, of Waltham Cross.

Prizes for Picotees were awarded to Mr. J. Douglas, Great Gearies, Ilford, and Mr. C. Turner respectively—1st and 2d in the order of their names ; and for Carnations, in which the order was reversed,

First-class Certificates were awarded to Messrs. John Laing & Co., Forest Hill, for Begonias Mrs. Howe, a double rose-coloured flower ; Little Beauty, also double, and pink-coloured ; Anak, an immense single scarlet ; and Princess Victoria, a double pink, having a white centre. Mr. Henry Bennett, Shepperton, received a First-class Certificate for his new Rose, Mrs. John Laing, a fine flower, full, and less gigantic than Her Majesty, and therefore likely to find more numerous admirers ; the colour is light pink, with a silver sheen—very beautiful.

## BATH ROSE SHOW: July 2.

THE annual Rose show, which as regards the number and excellence of the exhibits, as well as the financial success attending the efforts of the Bath Floral Fête and Band Committee to make the show a thoroughly representative one by providing such a liberal schedule of prizes, must be classed as one of the best of the season, was held in association with the National Rose Society in the Sydney Gardens, Bath, on Thursday last, under most auspicious circumstances as regards the weather. Mr. B. R. Cant, Messrs. Curtis, Sandford & Co., Messrs. Paul & Son, Messrs. Keynes, Williams & Co., and Messrs. George Cooling & Son, were well to the front in the nurserymen's and open classes. In the latter and amateur classes Messrs. T. W. Girdlestone, S. P. Budd, A. Evans, Captain Christy, Rev. C. Eddy, and Miss Watson Taylor, occupied prominent positions, as a glance at the following prize list will show.

### NURSERYMEN.

The liberal prizes which the committee very wisely offered this year in a few of the leading classes brought out a good competition and a capital lot of blooms. In the class for seventy-two distinct varieties there were four grand lots staged, and these took the judges some considerable time to adjudicate upon ; finally, Mr. B. R. Cant, of Colchester, was awarded 1st honours. Messrs. Paul & Son, The Old Nurseries, Cheshunt, Herts, 2d ; and Messrs. Keynes, Williams & Co., Salisbury, a good 3d ; each exhibitor staging fairly large, even, and fresh blooms.

For thirty-six varieties (three trusses of each), Messrs. Paul & Son were awarded 1st position for a truly grand lot of blooms ; 2d, Mr. B. R. Cant. There were four lots put up in this class also.

Out of three lots of eighteen varieties (three trusses of each), Messrs. Curtis, Sandford & Co., Torquay, had the best ; showing grand blooms of old and new favourites.

Ulrich Brunner was awarded the National Rose Society's Silver Medal for the best hybrid perpetual Rose in the show ; Messrs. George Cooling & Son, Bath, were a good 2d, showing Roses in grand condition.

Messrs. Curtis, Sandford & Co. were again 1st (out of four lots put up in capital form) for thirty-six varieties, single truss of each ; Messrs. Cooling & Son being, as in the preceding class, a capital 2d ; and Mr. George Mount 3d.

In the following class for eighteen Teas or Noisettes, distinct, there were only three contestants ; Mr. B. R. Cant, Mr. J. Mattock, and the Cranston Nursery Co., secured the awards in the order in which their names appear.

### AMATEURS.

In the class for thirty-six distinct varieties (single trusses), J. W. Girdlestone, Esq., Sunningdale, Berks, had the best among four lots put up ; P. Budd, Esq. (gr. Mr. George Campbell), was a good 2d—his blooms were very good ; Miss Watson Taylor was a good 3d.

Out of eight stands of twenty-four's Captain Christy,

Sidmouth, secured 1st position, with a grand lot of blooms; the Rev. Charles Eddy, Andover, being 2d, and A. Evans, Esq., 3d.

In the class for twelve trebles, distinct, four lots were staged. J. W. Girdleston, Esq., scored another victory, P. Budd, Esq., being a good 2d, and Miss Watson Taylor a good 3d.

Out of six lots staged of six varieties, three trusses of each, the Rev. Charles Eddy was 1st, Captain Christy and J. Smith, Esq., Warminster, being respectively 2d and 3d.

Six lots of six singles, distinct, were staged, the prizes being awarded to Mr. Tanner, Mr. J. Witts, and the Rev. C. C. Layard (gr., Mr. J. Weston), in that order.

In the class for twelve Teas or Noisettes, distinct, single trusses, seven lots of excellent blooms were put up, the 1st prize going to J. W. Girdleston, Esq., for a really good lot of blooms, amongst them a beautiful Niphetos, which secured for its very successful exhibitor the National Rose Society's Silver Medal for the best Tea or Noisette Rose in the exhibition. Miss Watson Taylor (gr., Mr. Gurdon) was a good 2d, and W. J. Grant, Esq., was a good 3d.

In the following class for six Teas, distinct, single trusses, Mr. W. Garraway, Oxford, had the best out of six lots staged; Joseph Smith, Esq., was 2d; and Mr. G. Tanner, Chippenham, 3d.

### Open Classes.

These were well contested. There were eleven lots of twelve single trusses of any Rose staged. Messrs. Paul & Son were 1st, Miss Watson Taylor being a good 2d, and Mr. B. R. Cant and the Cranston Nursery Co. equal 3d.

In the corresponding class for twelve trusses of any yellow Rose five lots were put up. A. Evans, Esq., Oxford, was 1st, with grand blooms of Maréchal Niel; the Cranston Nursery Co. 2d, with rather small—as compared with those in the 1st prize stand—blooms of the same variety; 3d, Miss Watson Taylor, with neat blooms of Belle Lyonnaise.

For a like number of trusses of any crimson variety Mr. B. R. Cant's Marie Baumann secured 1st place, and Alfred Dumesnil 2d, for Messrs. Curtis, Sandford & Co.; and A. K. Williams 3d, for the Cranston Nursery Co. Nine lots were shown in this class.

Mr. B. R. Cant was again to the front in the pink Rose class, with twelve large blooms of Madame Gabriel Luizet, followed closely by Messrs. Paul & Son, with La France and Madame Gabriel Luizet; and S. P. Budd, Esq., with La France. Seven lots were staged.

There were six lots staged in the class for six trusses of any new Rose of 1883—84. Alphonse Soupert gained Messrs. Curtis, Sandford & Co. premier position, as did Merveille de Lyon the Cranston Nursery Co. 2d; and Lady Mary Fiztwilliam secured Mr. J. Mattock the 3d place.

In the class for a basket of Roses (with Rose foliage only) tastefully arranged, Messrs. Cooling & Son were a good 1st, with a good arrangement of well chosen varieties; Mr. Mattock was 2d, and Mr. Drummond, Bath, 3d.

### Local Prizes: Amateurs.

There was only one stand of twenty-four distinct varieties, single trusses, put up in competition for the National Rose Society's Gold Medal and two pounds presented by the committee. This, consisting of excellent blooms of the leading varieties, secured, as all admitted it deserved to do, for Samuel P. Budd, Esq., the veteran amateur grower of the district, the prizes indicated.

Six stands of twelve varieties, singles, were put up. Mr. F. Clerk secured 1st place with a very neat, fresh, even lot of blooms; 2d, Rev. G. Gardener; and Mrs. Home, 3d.

There was only one award made in the class for nine Teas, distinct, one truss of each. This went to S. P. Budd, Esq.

### Bouquets (Open).

In the class for twelve bouquets of Roses for the hand, the prizes went to Messrs. George Cooling & Son, Mr. Mattock, and Mr. W. C. Drummond in that order. The 1st and 2d prize ones, which were very close to each other in point of merit, were composed of suitable varieties.

With six bouquets of Roses Miss Watson Taylor was 1st; Mr. Charles Warden, gr. to Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury, was a close 2d; and Mr. James Stuckey, 3d.

The following is a list of some of those Roses that were best shown in all the show:—Dupuy Jamain, Marie van Houtte, La France, Duke of Wellington, Homer, Lady Mary Fitzwilliam, Innocente Pirola, Souvenir d'Elise, Général Jacqueminot, Maréchal Niel, Marie Finger, Devoniensis, Catherine Mermet, Souvenir d'un Ami, Violet Bowyer, Marie Verdier, Captain Christy, A. K. Williams, Etienne Levet, Xavier Olibo, Duke of Teck, Duke of Edinburgh, Sultan of Zanzibar, Niphetos, Merveille de Lyon, &c.

### Plants.

Two lots of twelve ornamental foliage plants, in variety, and two lots of twenty-five exotic Ferns, in twelve varieties, were staged (one row) along the centre of the staging in the two large exhibition tents by Mr. S. F. Bryant and Mr. W. C. Drummond, to whom in each case the prizes were awarded in that order; and by way of affording variety, six plants of Orchids, in two varieties, viz., Cattleya intermedia and Odontoglossum Alexandræ, were contributed by Mr. R. B. Cater, Bath, which received a Certificate of Merit, a similar award being given to Messrs. Hooper, Bath, for a nice stand of seedling Carnations.

### Strawberries.

Although the neighbourhood of Bath is somewhat famed for the production of fine Strawberries, the thirty-eight dishes which came under the notice of the judges on the present occasion were but mediocre. For six dishes of thirty fruits there were three competitors, one being disqualified for showing two dishes of one variety under two names. The 1st and 2d prizes went to Mr. G. Garaway and Mr. W. Tylee, in the order in which their names appear. Mr. H. Scott was 1st for three varieties, and Mr. Beavis 2d. Mr. G. Garaway was 1st for a single dish, with President; Mr. Warden following closely with Sir J. Paxton, Mr. T. Evry securing 3d place.

### New Melon, Longleat Perfection.

Mr. Pratt, of Longleat Gardens, Warminster, obtained a First-class Certificate for a large green-skinned white-fleshed Melon of excellent flavour. It is the result of a cross between Meredith's Cashmere and Eastnor Castle.

## TUNBRIDGE WELLS HORTICULTURAL: July 3.

THE twenty-fourth annual summer show held by this society, like so many that have preceded it, was a decided success. In most of the various classes the competition was unusually close. Plants, both flowering and fine-leaved, were remarkable for their general excellence, not the least commendable feature attached to them being their fresh appearance—a condition not always present at this advanced period of the exhibition season, when many of the specimens forthcoming often show the effects of repeated packing and long travel.

### Stove and Greenhouse Plants.

In the open class for eight in bloom there was a near run between Mr. Gibson, gr. to T. F. Burnaby Atkins, Esq., and Mr. Gilbert, Hastings, who were respectively 1st and 2d. Mr. Gibson's group contained profusely flowered examples of Dipladenia amabilis and D. rosacea, Anthurium Scherzerianum, with numerous large and highly coloured flowers; the seldom seen Clerodendron fallax, large and full of bloom; Ixora Williamsii, Clerodendron Balfourianum profusely flowered, Statice profusa, and Allamanda nobilis; Mr. Gilbert had amongst others a very finely bloomed specimen of Erica Cavendishii, E. Exquisite, and Dipladenia amabilis; 3d, Mr. Rann, gr. to J. Warren, Esq., Crawley.

Four stove and greenhouse plants (open).—With these likewise Mr. Gibson took 1st, showing Ixora Fraseri, Allamanda Hendersoni, Dipladenia amabilis bearing large and highly coloured flowers, and Anthurium Scherzerianum; Mr. Pope, gr. to J. J. Barron, Esq., Tunbridge Wells, was a good 2d.

Six stove and greenhouse plants (amateurs).—1st, Mr. Moorhouse, gr. to J. W. Temple, Esq., Groombridge, who, in a nicely grown well-flowered half-dozen, had Kalosanthes coccinea, Anthurium Scherzerianum, and the pretty white Erica Shannoni; Mr. Pope, 2d, having a well bloomed specimen of Erica Aitoniana Turnbulli and Ixora javanica.

Four stove and greenhouse plants (amateurs).—1st, Mr. Pope, with medium sized examples, full of flower.

### Fine-foliage Plants.

With eight, in the open class, Mr. Rann had 1st honours for one of the finest groups he has staged, noticeable in it being Phœnix tenuis, some 15 feet across; Thrinax elegans, Croton Evansianus, a large leaved, highly-coloured variety; and a beautiful specimen of Bonapartea stricta.

Six ornamental plants (amateurs).—Here Mr. Moorhouse was 1st, showing, amongst others, in a creditable collection, Areca sapida, Chamærops humilis, and Araucaria excelsa; 2d, Mr. Turner, gr. to J. A. Le Lacheur, Esq., Tunbridge Wells.

### Ferns

of immense size and in beautiful condition were shown in the open class for eight, Mr Rann again taking the lead, his best examples being Cyathea dealbata, C. Smithii, both large and in fine order; dense specimens of Gleichenia rupestris and G. Mendelii, with the rare Thyrsopteris elegans; Mr. Pope, who was 2d, also had a very nice group containing Dicksonia squarrosa, D. antarctica, Cyathea medullaris, and C. dealbata.

### Fuchsias.

These were staged in nice order by Mr. Shoebridge, gr. to W. Edwards, Esq., Tunbridge Wells, who had large bushy specimens, clothed with healthy foliage and plenty of flowers: the plants not being over-trained had a free and natural appearance; 2d, Mr. Beilby, gr. to W. H. Tindall, Esq.

### Pelargoniums.

With six large flowered varieties Mr. Wilkins, gr. to S. Hall, Esq., took 1st; 2d, Mr. Shoebridge.

Six fancies.—1st, Mr. Allan, gr. to G. H. Field, Esq.; 2d, Mr. Wilkins.

Double zonals were well represented, Mr. Wilkins taking 1st for six, Mr. Allan 2d.

Single zonals.—1st, Mr. Beilby; 2d, Mr. Allan.

### Gloxinias and Begonias

were in first-rate condition, compact, and stout in foliage, the flowers large, numerous, and free from bruise or speck. With six Mr. Read, gr. to Mrs. W. C. Cripps, was 1st; Mr. Beilby, who was 2d, likewise exhibited good plants.

Tuberous Begonias.—With these Mr. Allan took the lead, having nicely-flowered medium-sized plants; 2d, Mr. Turner.

### Selaginelas.

have rarely been seen so well grown, Mr. Aylward, gr. to Mrs. Foster, and Mr. H. Scammell, gr. to C. Reily, Esq., having equal 1st prizes, and both staging plants in faultless condition.

Groups of plants arranged for effect are generally well done in this part of the country, and the present occasion was no exception to the rule. A good sized tent was wholly filled with them. In a close run Mr. Fennell, gr. to Mrs. Cazalet, Tonbridge, headed the competition with a beautiful group, in which colour and form in the plants used had been kept well in view; Mr. Wilkins, and Mr. A. Bashford, gr. to Mrs. Stoddart-Douglas, who were 2d and 3d in the order of their names, also had very effective exhibits.

An extra prize was awarded to Mr. Coleman, gr. to Mrs. Arthur Pott, for an attractive group of flowering and fine-leaved plants shown not for competition.

Mr. F. Webber, nurseryman, Tonbridge, received a well merited commendation for a beautifully arranged group of Ferns, a like award being made to Mr. W. Wilkins, for a collection of tuberous Begonias.

### Cut Flowers.

Roses were not shown in such large quantities as we have been accustomed to meet with at Tunbridge Wells, but the quality of those present made up the deficiency in point of numbers.

For forty-eight distinct varieties, single blooms, in the open class, Mr. Piper, nurseryman, Uckfield, staged a a fine lot of flowers which were a long way ahead of the other exhibitors in the class, but, unfortunately, the mistake was made of putting in two blooms of Duke of Edinburgh, by which, as a matter of course, the stand was disqualified. It was an unfortunate mistake, as both the flowers were labelled; Messrs. Bunyard & Co., Maidstone, were 2d; Messrs. Woollard, nurserymen, Cookbridge, 3d.

With twenty-four, Mr. Alfred Slaughter, Steyning, took a decided lead, having a beautiful lot of full-sized, even flowers, prominent amongst which were Général Jacqueminot, Marie Rady, Charles Lebfevre, Marie Baumann, and Louis van Houtte; Messrs. Bunyard, 2d.

In the amateurs' class for twenty-four, Mr. Slaughter was again 1st, with another grand lot of blooms; Mr. Ridout, gr. to T. B. Haywood, Esq., who was 2d, also showed well.

Twelve Roses.—Here also Mr. Slaughter had first honours, with a good dozen, all but too many of a colour, red; 2d, Mr. Ridout.

Twelve Tea or Noisette varieties.—With these, Mr. Slaughter was once more to the fore, showing a fine set of blooms, noticeable in them being Alba rosea, Perle de Lyon, Belle Lyonnaise, and Amazone; 2d, Mr. Ridout.

The National Rose Society's Silver Medal, offered for the best single bloom of hybrid perpetual shown in the open classes of forty-eight and twenty-four, was won by Messrs. Bunyard with a fine flower of Violette Bowyer.

A similar medal, offered for the best bloom of hybrid perpetual in the amateurs' classes of twenty-four and twelve, was awarded to Mr. Ridout for A. K. Williams in its best form.

The Bronze Medal for the best single Tea Rose shown in the class for twelve Teas or Noisettes, was taken by Mr. H. Simmonds, gr. to the Rev. R. C. Hales, with a well formed highly coloured example of Marquis de Sanina.

Collections of eighteen varieties of cut flowers made an imposing display, Mr. Moorhouse taking a long lead with a beautiful lot.

### Fruit.

Of this there was a large display. In the class for a collection, unlimited in number of varieties, Mr. Hopgood, gr. to Sir Julian Goldsmid, Tonbridge, was 1st, his best examples being three Pines, Black Hamburgh and Muscat of Alexandria Grapes, Peaches, Nectarines, a couple of Melons, Figs, Strawberries, and Cherries; Mr. Fennell was a good 2d, with fruit in nice condition; 3d, Mr. Waterman, gr. to H. A. Brassey, Esq., Aylesford.

Of three bunches of black Grapes there were several very good exhibits, the best being contributed by Mr. Moorhouse, who had bunches of even, highly finished berries; 2d, Mr. Hopgood, who also staged fine examples, perfectly coloured, but a little over-thinned; 3d, Mr. Morris, gr. to C. J. Ebden, Esq., St. Leonards. Three bunches of white Grapes.—With these Mr. Harvey, gr. to C. L. Higgins, Esq., Warlingham, took the lead, having Muscat of Alexandria; 2d, Mr. J. Wilkins. Three bunches of Grapes, in three varieties, exclusive of Hamburghs and Muscats.—Here Mr. Allan was 1st, with Foster's Seedling, Buckland Sweetwater, and Black Prince; 2d, Mr. Gore, gr. to Captain Taylor, Hastings.

Peaches were well shown by a number of exhibitors, the 1st prize going to Mr. Moorhouse, for a good dish of Grosse Mignonne; Mr. M. J. Bashford, gr. to J. Corlett, Esq., East Sutton, taking 2d, with beautiful examples of Early York.

Dish of Nectarines.—1st, Mr. Allan, with Violette Hâtive; 2d, Mr. Moorhouse, who had Lord Napier, beautifully coloured.

Dish of Cherries.—1st, Mr. Hopgood, with Black Tartarian, in excellent condition; 2d, Mr. Waterman.

Green-flesh Melon.—1st, Mr. Moorhouse, who had a handsome fruit of William Tillery; 2d, Mr. Bishop, gr. to F. Peake, Esq., Croydon. Scarlet-flesh Melon.—With this also Mr. Moorhouse had 1st, showing Blenheim Orange.

Strawberries.—1st, Mr. Braybon, gr. to the Countess Ashburnham, Frant, with a beautiful dish of Sir J. Paxton; 2d, Mr. Staples, with the same variety.

## SHEPPERTON HORTICULTURAL: July 2.

THIS Society came into existence last year, when an exhibition confined to Roses only was held, which was so successful that the promoters were induced to launch out further, so as to make the competition representative of gardening in its various branches. The committee have every reason to be satisfied with the result, as the show was a success in every way. The exhibition was held at Sunbury Court, Lieut.-Colonel Harfield's beautiful place; the well kept garden and grounds of which, adorned with grand examples of trees and shrubs, added no little to the general attractions of the show.

The leading feature was the group of plants arranged for effect, which alone filled a tent, two or three of the exhibitors running so close as to make the judging difficult. 1st honours were won by Mr. Sutton, gr. to J. S. Sassoon, Esq, who for flowering plants mostly depended on things of a simple character, but well calculated to give the requisite colour, which was placed so as to produce an elegant effect. In a bed of Adiantums and Lycopodiums he had Palms, Lilies, Campanulas, &c. Mr. West, gr. to Major Lendy, was 2d, likewise having an excellent group, but slightly deficient in the larger green foliage plants. Remarkable in this exhibit were two or three plants of Cattleya gigas Sanderiana, a good form of Cattleya Mendelii, a magnificent variety of the bright yellow Oncidium Rogersii, light and dark varieties of Odontoglossum vexillarium, O. crispum, and Utricularia montana.

### ORCHIDS

in sixes were also very well shown by Mr. West and Messrs. Jackson, the former taking a decided lead, having a fine half-dozen large and well bloomed, including Cattleya gigas Sanderiana, bearing nineteen flowers on four spikes; C. Mendelii, a good variety; Odontoglossum vexillarium, Lælia purpurata, and Dendrobium thyrsiflorum; Messrs. Jackson, who were 2d, had, amongst others, fine plants of Odontoglossum crispum, Dendrobium suavissimum, and Oncidium macranthum.

### STOVE AND GREENHOUSE PLANTS

were nicely shown by Mr. Reeves, gr. to W. Hewett, Esq., and Mr. Wakefield, gr. to E. Pettit, Esq, who were 1st and 2d in the order of their names. Mr. Reeves' best plants were Erica Cavendishii, Statice profusa, and Plumbago capensis—Mr. Wakefield's most meritorious being Stephanotis floribunda and Erica ventricosa alba.

### FINE-FOLIAGE PLANTS.

With six, Mr. Wakefield had 1st, his collection including Chamærops excelsa, Latania borbonica, and Araucaria excelsa; 2d, Mr. Reeves, who also had a nice group.

Six Caladiums.—With these Mr. Reeves took the lead, staging a very fine lot; 2d, Mr. West.

### FERNS.

In the class for six stove and greenhouse varieties Mr. Wakefield was to the fore, his best plants being a fine Platycerium grande and Davallia Mooreana; 2d, Mr. Waite.

Six Adiantums.—These were very well shown, Mr. Pratt, gr. to Lieut.-Col. Harfield, being 1st with a fine lot, the most noteworthy of which were A. farleyense, A. macrophyllum, and A. trapeziforme; 2d, Mr. Frankis, gr. to J. W. Wilson, Esq., who also had a meritorious collection.

### FUCHSIAS.

These were better than often met with thus early in the season.

In the class for four those exhibited by Mr. Plowman, gr. to C. Lavers-Smith, Esq., were shown as these plants should be, full of flowers and healthy foliage, with very little training except a support to the main stem. The formal chimney-pot style of plant that meets with so much favour at the present day is about as stiff and unnatural as it well could be. 2d, Mr. Reeves, with nicely done pyramids.

### GLOXINIAS

were well shown, both in twelves and sixes. With twelve Mr. Bowden, gr. to E. Barnett, Esq., took 1st, having a beautiful lot of erect and drooping sorts; 2d, Mr. West, who also had good plants. In the class for six, Mr. Batt, gr. to H. W. Cuthbert, Esq., was 1st, with remarkably well-grown plants of fine varieties.

### CUT FLOWERS.

Of these there was an imposing display. In the class for twenty-four distinct varieties Mr. West was easily 1st, with a beautiful lot, composed wholly of Orchids, amongst which may be mentioned Cattleya Schofieldii, C. gigas Sanderiana, C. Regnelii; Cypripedium caudatum, Vanda tricolor, and Dendrobium Dalhousianum. Roses were forthcoming in plenty, eight or ten exhibitors putting in an appearance in most of the classes.

With twenty-four, Mr. Warwick, gr. to J. P. Kitchin, Esq., took the lead, having a very fine stand, the best blooms being Général Jacqueminot, Dr. Andry, Charles Lefebvre, Madame Lacharme, La France, Etienne Levet, and Abel Carrière; this stand contained the premier Rose bloom in the show, Général Jacqueminot, a grand flower; 2d, Mr. Davis, gr. to E. Rutter, Esq., who also had a fine stand.

Twelve.—1st, Mr. Warwick, whose best flowers here were Etienne Levet, Mons. E. Y. Teas, François Michelon, and La France; 2d, Mr. Davis.

Six Roses.—1st, Mr. Goddard; 2d, Mr. Roper.

Twelve Tea varieties.—1st, Mr. West, with nice blooms.

Bouquets.—1st, Miss E. Donnel; 2d, Mr. J. Reeves.

### FRUIT.

Collections were nicely shown, Mr. Sutton being 1st for six dishes of Black Hamburgh and Buckland Sweetwater Grapes, Peaches, Nectarines, Strawberries, and a Melon; 2d, Mr. Bowden. Black Grapes were present in first-rate condition, Mr. Osman, gr. to L. H. Baker, Esq., taking the lead with Black Hamburgh, fine bunches, berries well swelled and coloured; 2d, Mr. Bowden. White Grapes also were well represented, Mr. Osman having 1st, with Buckland Sweetwater, fine bunches and berries, nicely coloured.

Of Peaches half a dozen good dishes were staged, Mr. Wakefield being 1st; Mr. Burns, gr. to H. H. Rigg, Esq., 2d.

Nectarines.—1st, Mr. Bowden, with a good dish; 2d, Mr. Sutton.

Strawberries were forthcoming in quantity and mostly fine condition, Mr. West having the best; 2d, Mr. Waite, gr. to the Hon. W. P. Talbot, who likewise had fine fruit.

Mr. Pratt received a commendation for a nicely arranged group of plants.

From Messrs. Jackson, Kingston, came an effective display of miscellaneous flowering and fine-leaved plants.

Messrs. Charles Lee & Son, Hammersmith, contributed a collection of Roses.

Mr. Bennett, Shepperton, exhibited a beautiful lot of Roses, including several of his own pedigree seedlings, amongst which were charming boxes of Lady Mary Fitzwilliam and Her Majesty. With these were twenty-four blooms of Mrs. John Laing, a recent addition to Mr. Bennett's seedlings. This is a grand Rose, whether looked at from an exhibition or a decorative point of view; the colour is a beautiful shade of pale pink. It is a full-sized, deep flower, unexceptionable in form, with plenty of stuff in it—one of those Roses that can be shown big enough in a morning without being too far open in the latter part of a hot day. By not a few the question was raised, if it is not the best Rose Mr. Bennett has yet brought out. It received a well merited First-class Certificate.

## TEDDINGTON HORTICULTURAL: July 1.

THE exhibition, which was held on the above date in the grounds attached to Bushy Lodge, gave evidence of successful cultivation in the several departments of plants, flowers, and fruits.

### STOVE AND GREENHOUSE FLOWERING PLANTS.

With six Messrs. Jackson, Kingston, took 1st, with well bloomed, medium-sized plants.

Four stove and greenhouse plants.—1st, Mr. Sutton, gr. to J. S. Sassoon, Esq.

### FINE-FOLIAGE PLANTS.

With six Mr. Sutton had 1st honours, staging a nice lot, the best of which were Kentia Baueri and Euterpe edulis.

Three foliage plants.—1st, Mr. Higginson, gr. to Major-General Vialls; 2d, Mr. Hoare, gr. to J. W. Clarke, Esq.

Single foliage plant.—1st, Mr. Sutton, with Latania borbonica.

Four Caladiums.—1st, Mr. Harkett, who had well done plants; 2d, Mr. Staples.

### MISCELLANEOUS.

In the class for Ferns, six varieties, the 1st prize went to Mr. Lambert, gr. to W. Truefitt, Esq., for a nice collection; 2d, Mr. Coombes, gr. to W. Furze, Esq.

Three Ferns.—1st, Mr. Sutton, whose best plant was a fine specimen of Cyathea dealbata.

For the best show and fancy Pelargonium varieties, six plants, Mr. Wiggins, gr. to W. Clay, Esq., had 1st, staging very good examples for so late in the season, the best being East Lynne, Princess Teck, Evelyn, and Modesty.

Gloxinias were very well shown, Mr. Coombes having 1st, with nine beautiful plants, finely flowered; 2d, Mr. Sallows, gr. to J. J. Flack, Esq.

Tuberous Begonias were very good, Mr. Sallows taking the lead in the class for six.

### GROUPS OF PLANTS ARRANGED FOR EFFECT

were remarkably well done, especially in the open competition, the Ferns and other green-leaved plants used as a setting for the taller things and flowering subjects to give value being employed in sufficient quantity to avoid the overdone appearance in the matter of colour that is too often an objectionable feature in competitions of this kind.

In the open class there was a very close run between Messrs. Hooper & Co., of Twickenham, who were 1st, and Messrs. Fromow & Sons, of Chiswick, who were 2d. In the corresponding class confined to gentlemen's gardeners, the competing groups were also very well done, the 1st prize going to Mr. Coombes, and Mr. Buckland, gr. to J. F. Atkins, Esq., and Mr. Filsell, gr. to T. R. Greaves, Esq., had each meritorious groups.

### FRUIT,

collectively, was nicely shown. With six dishes, Mr. Bates, gr. to — Meek, Esq., had 1st, staging black and white Grapes, Peaches, Nectarines, Strawberries, and a Queen Pine; 2d, Mr. Sutton. Black Grapes were well shown by several exhibitors, Mr. Smith, gr. to — Howard, Esq., taking the lead, while Mr. Bates was 2d. The class for white Grapes brought out the best finished Muscat of Alexandria we have seen this year, Mr. Coombes being 1st; Mr. Smith who was 2d, had Fosters' Seedling in nice condition. Single Pine.—1st, Mr. Bates, with a nice Queen; 2d, Mr. Sutton, who also had the same variety.

Dish of Peaches.—1st, Mr. Lake, with Royal George; 2d, Mr. Sutton, who had the same variety, large, beautiful fruit, but not ripe.

Dish of Nectarines.—1st, Mr. Lake, Violette Hâtive, very well coloured; 2d, Mr. Sutton.

Strawberries generally are not so fine this year as usual, not having ripened kindly in most places. Mr. Higginson, who was 1st, had a very good dish of James Veitch.

### CUT FLOWERS.

With twenty-four Roses, Mr. Warwick, gr. to J. P. Kitchin, Esq., had 1st, putting up a good stand; 2d, Mr. Coombes, who also had a meritorious collection. Twelve Roses.—1st, Mr. Bateman; 2d, Mr. Higginson. Twelve bunches of Gloxinias—1st, Mr. Warwick, who had splendid flowers of fine varieties; 2d, Mr. Coombes. Stand of cut flowers.—1st, Miss F. J. Walker, with a beautiful arrangement; 2d, Mr. Futcher.

Dr. Whitney's special prize for the best collection of British flowering plants, dried and mounted, was won by Mr. J. M. Hellier, whose exhibit was exceedingly well done, the colours of both flowers and leaves being well preserved.

Messrs Jackson, Kingston, exhibited, not for competition, an effective group of flowering and other plants. Messrs. Veitch, Charles Lee & Son, and Mr. Anderson contributed cut Roses.

## IPSWICH AND EAST OF ENGLAND.

THIS Society held its summer meeting on July 1, in Christchurch Park, which is an extensive and highly picturesque piece of ground, it being well broken up and diversified by hill and dale, and finely timbered with grand old trees.

The most attractive feature of the exhibition was the Roses, which were unusually fine, the premier prize for the best forty-eight distinct trusses going to the champion grower, Mr. B. R. Cant, of Colchester, and Mr. F. Cant, of the same place, coming in 2d.

In the class for amateurs the Rev. H. A. Berners, the Honorary Secretary, was 1st for thirty-six, and exhibited a superb lot of blooms.

For twenty-four the Rev. Page Roberts came in 1st, with a good even stand. The Rev. H. T. Frere was awarded 2d, and showed a fine fresh-looking lot.

In the amateurs' class for twelve the Rev. H. A Berners was again to the fore, and the Rev. Page Roberts and Mr. T. H. Powell were placed equal 2d.

There was also an open class for twelve, and in this Mr. B. R. Cant out-distanced competition, but Miss Penrice showed strong and took 2d.

In the class for Teas the Rev. A. Foster Melliar was a good 1st, with highly finished blooms. Comtesse de Nadaillac was awarded the Silver Medal for the finest Rose in the show. The Rev. F. Page Roberts came in 2d, and Mr. T. H. Powell 3d.

For sixes the Rev. Page Roberts was 1st, and Mr. T. H. Powell 2d.

Next to the Roses, the stands of herbaceous and other hardy flowers came in for the greatest share of attention, but the prizes for these were very disproportionate, for while £2 was offered for the best twelve Roses, the 1st prize for twelve herbaceous cut flowers was 7s. 6d., and 10s. for twenty-four, in which latter class Messrs. Gilbert took the lead, with a very fine lot; and Mr. J. Sheppard, of Woolverstone, was 1st in the twelves, and occupied the same place again in the sixes.

For the best six stove and greenhouse cut flowers, Mr. Mundey, gr. to R. C. Ransome, Esq., was 1st; and the Messrs. Gilbert, of St. Margaret's Nursery, Ipswich, 2d.

In the table decorations and bouquets great taste was displayed, the Messrs. Gilbert taking 1st for their stand in the open class; and in that for lady amateurs the premier position fell to Miss Bruff.

In the plant department a great falling off was noticeable, some of the older and principal exhibitors having partly withdrawn.

For six stove and greenhouse, the Messrs. Gilbert took the lead; and Mr. Mundey came in 2d.

In the class for the six best ornamental foliaged plants, the Messrs. Gilbert were again 1st; and Mr. W. Sheppard, gr. to G. Packard, Esq., of Berkfield, 2d.

For four stove and greenhouse plants, Mr. Mundey was 1st, and Mr. W. Sheppard 2d; the same positions being occupied for four ornamental.

What constituted a most useful class, and one deserving of more encouragement at shows, was that for the best group of plants arranged in a space of 12 feet by 5, in which Mr. Mundey was a good 1st, with a very nice, well-grown lot of clean, healthy stuff; and Mr. Chenery, gr. to H. Booth, Esq., 2d, with a most useful collection.

For the best specimen in bloom, Mr. W. Sheppard was 1st; and Mr. Mundey took 1st for the best Orchid, with a large and superbly flowered Dendrobium nobile, in which class Mr. W. Sheppard came 2d.

For the best specimen foliaged plant, Mr. Mundey was again 1st; and the same for six exotic Ferns.

Mr. Mundey was also to the fore in the class for six tuberous-rooted Begonias, and again for six Gloxinias, his plants of these being remarkably fine.

In the fruit tent, for the collection of eight dishes, the contest laid between Mr. W. Allan, gr. to Lord Suffield, of Gunton Park, and Mr. J. Sheppard, gr. to J. Berners, Esq., of Woolverstone, the prizes being awarded in the order named.

Mr. Allan was also 1st for the best three bunches of black Grapes, and the same for three of white; the 2d in the first-named class going to Mr. Chenery.

For six Peaches, Mr. Allan was 1st, with some fine well coloured fruit—the prize for the best six Nectarines falling to the lot of Mr. W. Sheppard, who had a fine half-dozen of Lord Napier.

Cherries were fine, Mr. J. Sheppard showing good dishes of Tartarian and Frogmore Bigarreau.

Outdoor fruits were conspicuous by their absence, the season being so late that none, except Cherries, had ripened.

The vegetables were remarkably fine, Mr. Cresswell, gr. at Stoke Park, taking the coveted reward for the best collection of twelve sorts; and Mr. Blair 2d.

## BRAINTREE AND BOCKING HORTICULTURAL.

THE annual summer show of this Society was held on July 2, in the grounds belonging to Sydney Courtauld, Esq. The day was a delightfully fine one, and as the two preceding shows had unfortunately fallen on pouring wet days, the large company which assembled this year was all the more in the mind to enjoy the weather, the numerous fine exhibits, and the good music, which a large and well trained band discoursed. Four large tents were provided for the different classes, one being allotted to the foliage and flowering plants, and another to the cut flowers and table decorations and fruit, a third to the cottagers' classes, and a fourth to the vegetables. Among the extraordinary plants may be noted a grand Cycas revoluta (not for competition), some 10 or 12 feet across, and coming to fruit, from George Courtauld, Esq., M.P.; Cycas media, Cocos Weddelliana in the group from Sydney Courtauld, Esq., the generally fine exhibits of Mr. Dance, gr. to Colonel Lowe, who took 1st for foliage plants, and a magnificent Cyathea Burkei in Miss Cawston's collection. Mr. F. Smoothly had some grand Coleus and good Gloxinias, Messrs. Saltmarsh good Roses and Tuberous Begonias. The prize twenty-four cut Roses, of Mr. W. Brown, of Braintree, were superb. The Braintree show is becoming noted for table decorations, and some of those set up on Thursday were of first merit, notably that of Mr. W. Sodor (1st prize, open) and of Miss Tuffnell. Both from a business and a pleasure point of view the show was a great success, and reflected great credit on all concerned, and particularly on Mr. H. Gibbs, the secretary, and the committee, who must have worked hard to arrange so many exhibits in such a short space of time. (*A Correspondent.*)

## MASSACHUSETTS HORTICULTURAL: Boston, June 6.

THIS was prize day or Rhododendrons and hardy Azaleas, but on account of the lateness of the season the competition was not very close. Mrs. F. B. Hayes was the only person to compete, and took the 1st prize for the best twenty-four, twelve, six, three, and a single tender Rhododendron, and also the 1st prize for the best six hardy kinds. Among the tender kinds we noticed John Walter, W. E. Gladstone, Lady Grenville, Baron Shroder, Lady Rolle, Auguste van Geert Jeannie Deans, Lady Dorothy, and Mrs. Thomas Longman.

Mr. H. H. Hunnewell filled a large stand with Azaleas and Rhododendrons; Mr. B. G. Smith took the 2d prize for a cluster of hardy Azaleas, Baron Geo. Pike.

Mr. R. T. Jackson exhibited a splendid little alpine plant, Erinus alpinus, which has probably never bloomed before in this country.

Mrs. P. D. Richards, West Medford, exhibited forty-eight species and two vars. of wild flowers, receiving the 1st prize.

Hon. Marshall P. Wilder exhibited a collection of Tree Pæonies. J. W. Woodford displayed Clematis in varieties, and from many other contributors came herbaceous plants, hardy flowering trees, cut flowers, and wild flowers.

The Secretary read a letter from the General Union for the Promotion of the Cultivation of Bulbs at Haarlem, proposing to offer a Gold Medal, a Silver-gilt Medal, and a Silver Medal for the best, 2d best, and 3d best Hyacinths in pots at the next spring exhibition of the Society. The Society appointed a delegation to attend the next meeting of the American Pomological Society, to be held in the State of Michigan in September next.

BOSTON: *June* 13.—The Rhododendrons from Mrs. F. B. Hayes were very fine, and shown in large numbers, nearly filling a large table. Mrs. Hayes also exhibited a large collection of Azaleas and Irises. H. H. Hunnewell filled another large table with Rhododendrons and Azaleas. E. Sheppard showed Rhododendrons, Azaleas, Delphiniums, and Irises. J. H. Woodford again made a good display of Clematises and two vases of Lamarque Roses. W. C. Strong, Brighton, showed the new white Weigela candida, which proves to be hardy in this country. From Miss S. W. Story came a collection of named herbaceous plants. Mrs. P. D. Richards exhibited a large collection of wild flowers.

BRICKS OF CORK.—The waste cuttings of cork are now being employed for making bricks, which can be used for walls, impervious alike to heat or damp. The cork cuttings are reduced to powder in a mortar, and mixed with lime or clay, and from this composition the bricks are made in the usual way. When dried, they are capable of resisting a crushing strain of 3·6 kilogrammes per square centimetre (51·08 lb. per square inch). They are very light, having a specific gravity of 0.35. *Journal of the Society of Arts.*

## FLOWER MAKING.

CERTAINLY not artificial flowers, for these, wondrous as they are, and singularly like to real as many may be, yet do not come within the scope of garden work, and are not referred to in the present instance. The flower-making under immediate notice is that of real flowers, such as are in request in vast quantities in the flower market, and always command good sale. The term flower "making" may be objectionable in some respects, because it seems to convey an impression of manufacture rather than of actual cultivation. To those engaged in market flower production on a large scale the distinction seems to lie less in terms than in method. A visit to the market establishment of Messrs. Hawkins & Bennett, Twickenham, is always of interest, but specially so at this season of the year, for a very pleasing specialty of this firm is found in Lily of the Valley. Their splendid Victoria strain is admittedly the finest in cultivation, and of them they have immense quantities, all planted in beds 8 feet in width, and so arranged that lights used to protect the earlier beds may be shifted from one set of beds to later ones, and so on, so that the season of bloom is as prolonged as possible. How many hundred yard lengths of beds of this width are grown we cannot say, but on the evening of our recent visit we learned that several hundred dozens of blooms had been that day gathered for market. These are assorted and bunched with exceeding care, as prices vary according to quality. To those unaccustomed to the work the perfume found in the tying shed is as overpowering, as it is in a lesser degree most delicious. Beds stand several years just as they may produce good spikes of bloom or otherwise. As soon as these show lack of quality the roots are in the following autumn lifted, the crowns assorted or sized, and, the old soil in the beds being removed, fresh is introduced with ample dressings of manure, and the roots are replanted. The beds are not as a rule considered worth protection until the third year, when they are strong, and if doing well they will continue to produce a fine crop of flowers for several seasons. The Victoria Lily of the Valley is a fine strain, but it owes some of its superior character also to the high-class cultivation bestowed upon it at Twickenham. But whilst these hardy flowers are occasional specialties here, the backbone of flower-making is found in white, scarlet, and pink Pelargoniums, of which many thousands in 48 sized pots are grown. It is always difficult to ascertain the exact numbers of plants found in any of these large market establishments, especially as we do not care always to submit a direct query. Perhaps it would be fair, however, to say that if every Pelargonium in pots in this establishment were stood close together an acre of ground would not hold them. How many 48-sized pots would stand on such an area we leave youthful arithmeticians to settle. Pelargoniums here are never out of bloom. No matter at what season of the year visitors may drop in upon Messrs. Hawkins & Bennett; even if it be the foggiest, dullest day of mid-winter, they will still see what for the time of the year may well be termed a blaze of colour. Those who have seen Mr. Cannell's winter displays of bedding Pelargoniums will not doubt this statement. What is seen in mid-winter is, however, not quite so brilliant a display as may be seen in the many long broad houses here now; and this brilliant show is all the more remarkable when it is remembered that the flowers are being gathered in quantity from day to day. Vesuvius is still the most largely grown of single scarlets, and wondrously floriferous it is. A house full of this, 20 feet wide and 200 feet long, is, indeed, an unwonted sight, all the plants being in blooming pots, making good growth, and not in the bedding 60, as may be imagined. The firm grow no bedding stuff—indeed, they send no plants to market early, but later, when furnishing makes demand for colour, some thousands will go, because plenty of others will be prepared to take their places. But if rather less free than is Vesuvius, certainly very much finer is that grand scarlet, De Lesseps. So perfect, so fine, and richly coloured is this kind, as bloomed here, that it would seem as if improvement upon it were impossible. Perhaps something is due to cultivation, but certainly De Lesseps at Twickenham is a grand variety; as one truss is of more value in the market than three of Vesuvius, no wonder it is highly thought of here.

Naturally those who work in market flower making, must proceed slowly in the use of new materials lest they commit a serious trade error. Hence Vesuvius has held its own for a long time, because it is so certain and so amenable to cultivation. Other kinds must be well tried before they can displace it, and thus change in material proceeds slowly. A very fine scarlet, too, is Commander-in-Chief, but it pales its fires materially in presence of De Lesseps, whilst Master Christine seems to be the most largely grown of single pinks. The sway held by old Madame Vaucher so long as a market white has at length been quite broken, indeed a real queen has been found in one of the most perfect of white kinds we have ever seen, and named fitly Queen of Whites. This is one of that market veteran, Mr. Ladds' raising, and should be in universal demand. Not only has the plant a sturdy compact habit, but it is wondrously free and its flowers are borne in good sized trusses, the pips being not only stout and of the fullest and most perfect form, but is a pure standing white. Another extremely striking white is Niphetos, perhaps the purest white ever seen; the plants are robust growers, and the trusses, borne on tall stout stems, are large, but the flowers partake somewhat of the Hybrid Nosegay habit, and lack form. It is greatly to its credit that it never pinks or discolours, and for that reason is most valuable for its particular use here, especially in the winter. Arethusa is also largely grown as a white kind. All singles are gathered as trusses, and before going to market pass through the hands of experts, who place a drop of liquid gum into each flower, thus making the petals adhesive and enduring. Doubles, on the other hand, are chiefly gathered singly, the pips, when fully expanded, being placed in small tissue-paper bags in dozens or scores, and dropped into trays. To all ordinary observers these bags might be supposed to hold sweets or cakes, but their contents, though sweet and very beautiful, barely came under the appellation of sweets. The finest double here is the deep scarlet E. V. Raspail, which produces very fine pips. King of Doubles, colour orange-scarlet, is also a very striking kind; and Madame Thibaut is largely grown, its purplish-pink flowers standing out in bulk with fine effect. The double Ivy-leaved section of Pelargoniums is also well represented, such fine forms as Madame and Albert Crousse, Jean d'Arc, and Gloire d'Orleans, being largely grown. There are several others in the various sections than those named, and also a quantity of seedling large-flowered Pelargoniums, all blooming freely, and giving a wondrous display of colour.

A great specialty with the firm is found in Maidenhair Fern, the chief kind grown, because of its admirable habit and usefulness, being the common Adiantum cuneatum. This is seen in thousands of big plants, chiefly in large 24's, and some few specimens in large pots from 4 feet to 5 feet through, the which it is purposed to show shortly at South Kensington. All these Ferns are grown for the production of fronds, which are pulled and bunched, going to market in boxes with the flowers. To maintain the supply of fronds required, it is needful to have a big stock of plants, and these obtain the best cultivation. In the production of large specimens, a few of which are always on hand, seedling plants are preferred to divided ones, as in the former the fronds come up in a cluster, and do not run out. The firm have a Maidenhair, which, whilst possessing all the admirable qualities of cuneatum, is quite intermediate between that and the somewhat fragile gracillimum. How far it may be distinct from other kinds opportunity will doubtless presently offer for determination. The entire establishment is kept in good order, and whilst every yard of ground is fully utilised, yet all is as tidy as in a private garden. *A. D.*

GIGANTIC TREES. — At Dartington Hall (the seat of A. Champernowne, Esq.), near Totnes, opposite to and within sight from the front of the mansion, are seven Spanish or Sweet Chestnut trees—great monsters.

| | | | | | |
|---|---|---|---|---|---|
| No. 1 has a trunk 14 feet 6 inches in circumference. | | | | | |
| 2 | ,, | 16 | ,, 6 | ,, | ,, |
| 3 | ,, | 13 | ,, 3 | ,, | ,, |
| 4 | ,, | 14 | ,, 5 | ,, | ,, |
| 5 | ,, | 16 | ,, 5 | ,, | ,, |
| 6 | ,, | 10 | ,, 8 | ,, | ,, |
| 7 | ,, | 18 | ,, 8 | ,, | ,, |

The ground covered by these noble specimens is about 23 yards × 60 yards, and they are from 60 to 70 feet in height.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, JULY 8, 1885.

| Month and Day. | Barometer. Mean Reading Reduced to 32° Fahr. | Barometer. Departure from Average of 18 years | Temperature of the Air. Highest. | Lowest. | Range. | Mean for the Day. | Departure of Mean from Average of 50 years. | Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point. | Degree of Humidity. Sat. = 100. | Wind. Average Direction. | Rainfall. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| July | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 2 | 30.00 | +0.18 | 77.0 | 48.0 | 29.0 | 61.3 | + 0.2 | 46.8 | 58 | E. | 0.00 |
| 3 | 29.97 | +0.17 | 79.3 | 55.5 | 23.8 | 65 8 | + 4.6 | 51.2 | 67 | E. | 0.00 |
| 4 | 30.02 | +0.21 | 77.5 | 53 8 | 23.7 | 65.3 | + 4.0 | 51.9 | 61 | E. | 0.03 |
| 5 | 30.04 | +0.23 | 80 | 57.2 | 22.8 | 65.9 | + 5.4 | 54.3 | 64 | W.NW. to N.W. | 0.00 |
| 6 | 30.04 | +0.24 | 83 5 | 56 5 | 27.0 | 68 3 | + 6.7 | 50 6 | 53 | S.W. | 0.03 |
| 7 | 30.00 | +0.19 | 74.5 | 54 5 | 20.0 | 62.7 | +10.9 | 54.5 | 76 | S.W. | 0.00 |
| 8 | 29.92 | +0.11 | 72.0 | 55.5 | 15.5 | 61.3 | − 0.7 | 55 1 | 76 | S.W. | 0.02 |
| Mean | 30.00 | +0.19 | 77.7 | 51.6 | 23.1 | 64.5 | + 3.0 | 52.5 | 65 | S.W. | 0.02 |

July 2.—Very fine morning, dull afternoon.
— 3.—Fine day, dull.
— 4.—Fine dull day.
— 5.—Dull morning, fine bright afternoon.
— 6.—Very fine day.
— 7.—Very fine day.
— 8.—Fine day, slight shower of rain at 1.30 P.M.

LONDON: *Atmospheric Pressure.*—During the week ending July 4, the reading of the barometer at the level of the sea decreased from 30.24 inches at the beginning of the week to 29.94 inches by 5 P.M. on the 29th, increased to 30.01 inches by 9 A.M. on June 30, decreased to 30 inches by 1 P.M. on the same day, increased to 30.17 inches by 9½ A.M., decreased to 30.13 inches by 5 P.M. on July 1, increased to 30.22 inches by 9 A.M. on the 2d, decreased to 30.11 inches by 5 P.M. on the 3d, and was 30.20 inches by the end of the week.

The mean reading of the barometer for the week was 30.10 inches, being 0.01 inch higher than last week, and 0.11 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 79°.3, on the 3d; on July 1 the highest was 68°.5. The mean of the seven high day temperatures was 73°.4.

The lowest temperature was 47°.5, on June 28; on the 3d the lowest temperature was 55°.5. The mean of the seven low night temperatures was 51°.4.

The greatest range of temperature in one day was 24°.6, on June 28; the least range was 16°.7 on the 29th. The mean of the seven daily ranges was 22°.

The mean temperatures were—on the 28th, 57°.2; on the 29th, 57°.5; on the 30th, 59°; on July 1st, 57°.7; on the 2d, 61°.3; on the 3d, 65°.8; and on the 4th, 65°.3; of these the first four were below their averages by 4°.1, 3°.8, 2°.2, and 3°.5 respectively, and the last three were above by 0°.2, 4°.6, and 4°, respectively.

The mean temperature of the week was 60°.5, being 3°.6 higher than last week, and 0°.7 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 157°, on June 28. The mean of the seven readings was 126°.4.

The lowest reading of a minimum thermometer placed on grass was 37°.1, on the 28th. The mean of the seven readings was 41°.8.

*Rain.*—No rain fell during the week.

ENGLAND: *Temperature.*—During the week ending July 4, the highest at Cambridge was 80°.5, at Blackheath 79°.3, at Plymouth 75°.3; the highest at Bradford was 69°.1, at Liverpool 70°.3, at Preston 71°.5. The general mean was 44°.1.

The lowest temperatures were 39° at Cambridge, 40° at Truro, 40°.5 at Bolton; the lowest at Liverpool was 49°.5, at Brighton 48°, at Blackheath 47°.5. The general mean was 44°.1.

The greatest ranges were 41°.5 at Cambridge, 32°.9 at Wolverhampton, 32°.at Truro and Sunderland; the smallest ranges were 20°.8 at Liverpool, 23°.1 at Bradford, 24°.5 at Preston. The general mean was 22°.5.

The mean of the seven high day temperatures was highest at Blackheath and Cambridge, 73°.4, at Leeds 69°.5; and was lowest at Liverpool, 64°.3, at Sunderland 65°.4, at Hull 65°.9. The general mean was 68°.4.

The mean of the seven low night temperatures was highest at Preston, 53°.3, at Liverpool 53°.2, at Leeds 51°.7; and was lowest at Truro, 45°.4, at Wolverhampton 47°.6, at Cambridge and Hull 47°.7. The general mean was 49°.7.

The mean daily range was greatest at Cambridge, 25°.7, at Truro 23°.2, at Blackheath 22°, and was least at Liverpool, 11°.1, at Preston 14°.7, at Sunderland 16°.3. The general mean was 18°.7.

The mean temperature was highest at Blackheath, 60°.5, at Preston 58°.8, at Leeds 58°.7; and was lowest at Hull, 54°.9, at Truro 55°.1, at Sunderland 55°.3. The general mean was 57°.1.

*Rain.*—The largest fall was 0.07 inch at Wolverhampton; and the smallest fall was 0.01 inch at Sunderland. No rain fell at Truro, Plymouth, Brighton, Bristol, Blackheath, Nottingham, Sheffield, Liverpool, Bolton, Hull, Bradford, Leeds, or Preston. The general mean was 0.01 inch.

SCOTLAND: *Temperature.*—During the week ending July 4, the highest temperature was 79°.8, at Paisley; at Leith the highest was 71°.5. The general mean was 75°.2.

The lowest temperature in the week was 41°, at Perth; at Leith the lowest temperature was 45°.1. The general mean was 43°.4.

The mean temperature was highest at Dundee, 59°.6; and lowest at Glasgow, 57°.3. The general mean was 58°.4.

*Rain.*—The largest fall was 0.59 inch, at Aberdeen, and 0.06 inch at Greenock. The general mean fall was 0.21 inch.

JAMES GLAISHER F.R.S.

## Answers to Correspondents.

POPLAR GALL: *T. P. W.* This is the production of an aphis allied to the greenfly of the Rose. Sweep up the leaves, and burn them.

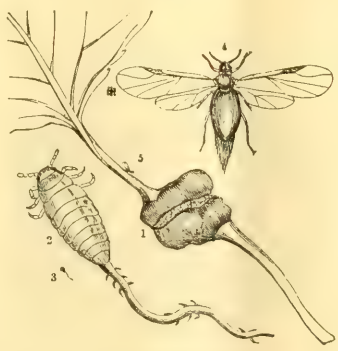


FIG. 13.—POPLAR GALL.

DISEASED PEAR LEAVES: *S. S.* The Pear leaves are infested with Phytoptus Pyri. You can only cut off affected foliage and burn it.

GRAPES DISEASED: *C. J. Wheeler, Houghton.* As the examples forwarded are infected with the common Grape mildew, it is only reasonable to suppose that the injury is due to this parasite. In bad cases like yours the fungus inserts a large number of microscopically small suckers into the skin of the fruit, and the minute orifices thus formed are the beginning of the soft decayed spots. On to these spots often fungi speedily affix themselves, as in your case, and destruction of the fruit is soon complete. We think good ventilation, and the other precautions usually taken against mildew, would prevent a recurrence of the decay. *W. G. S.*

HULL SHOW: *W. Green.* November 19, two days. Mr. MacMahon, Botanic Garden.

NAMES OF PLANTS: *C. M. O.* Allium neapolitanum; Aconitum lycoctonum. The other specimens were unfortunately dried up beyond recognition.—*W. S.* 1, Spiræa ariæfolia; 2, next week; 3, Sedum spurium var. album; 4, Sidalcea malviflora.—*H. H. W., Brighton.* 1, Erigeron speciosus; 2, E. glabellus; 3, one of the numerous forms of Veronica spicata; 4, Ornithogalum narbonense? 5, Lobelia erinus; 6, probably Helichrysum stæchas, but not sufficiently advanced.—*A. C.* 1, Thuia gigantea; 2, T. occidentalis?; 3, Libocedrus decurrens; 4, Abies cephalonica? 5, Cunninghamia sinensis.—*A Reader, McC.* 1, Polystichum angulare proliferum; 2, P. aculeatum; 3, Lastrea Filix-mas cristata; 4, L. dilatata; 5, Scolopendrium vulgare; 6, Lastrea spinulosa.—*Notts.* 1, Potentilla tormentilla; 2, Lycopsis arvensis; 3, Galium Cruciata; 4, Fumaria officinalis; 5, Centaurea nigra; 6, Lychnis dioica.—*P. J.* 1, perhaps Hieracium umbellatum, but specimen insufficient, and converted into ensilage before it reached us; 2, Melica uniflora; 3, Scleranthus annuus; 4, Poa rigida; 5, Lysimachia nemorum; 6, Bromus sterilis.—*E. F.* Trifolium pratense.—*Barr & Sons.* 1, Bromus commutatus; 2 and 6, Agrostis nebulosa; 3, Briza media, stained; 4, Anthoxanthum ovatum; 5, Bromus macrostachys; 7, Bromus brizæformis; 8, Polypogon monspeliensis; 9, Festuca heterophylla (?), no leaves.—*Alpha.* 1, Lathyrus pratensis; 2, Lotus corniculatus major; 3, Trifolium procumbens; 4, Lotus corniculatus; 5, Hieracium piloselia; 6, Chærophyllum sylvestre.—*Young Gardener.* Epidendrum seligerum.—*Q. F.* We cannot name plants from incomplete specimens.

PEACH LEAVES: *R. M.* The holes in your Peach leaves are caused by the rays of the sun shining on drops of water, and turning them into burning-glasses. Probably some of your panes of glass are of bad quality.

POPLAR: *C. M.* The female catkins of the Poplar, with the silky seeds.

TUBERS ON HAULMS: *R. P.* It is clear you do not read your *Gardeners' Chronicle* very attentively, or you would know that the occurrence is not uncommon. It is said that the cause is some injury to the plant, which is very likely. They are adventitious buds, as you suppose, and they would develope, if planted like other sets, into edible tubers.

TULIPS: *G. P.* The formation of bulbs in the axil of the stem-leaves is uncommon, but occurs occasionally.

WIREWORM: *A. Curtis.* Slight dressings of agricultural salt strewn between the crop in showery weather. Give enough to be just visible as a thin coating.

YEW DISEASED: *C. M. O.* The black spots on the Yew leaves are caused by a fungus named Sphæropsis taxi, and quite different from the Sphærella taxi, recently described and illustrated in the *Gardeners' Chronicle.* The Sphæropsis is not, we think, capable of causing serious injury to Yews. Your Yew appears to be infested with an unicellular alga and lichens. We should say it is in a bad situation for growth. *W. G. S.*

COMMUNICATIONS RECEIVED:—J. H. (next week).—S. & M.—W. W.—J. Garland (too late).—J. Veitch & Sons.—Mr. Gilbert—A. D. (next week).—N. E. B.—Daniels Brothers (shortly).—W. N.—J. R. R.—A. M.—J. D—H. E.—J. M. Cameron.—H. W.—Lambert & Reiter.—D. M. Mackay.—P. Barr.—R. D.—M. A. L.—W. O. H.—Miss Hunt.—A. van Geert.—J. L. M., Guernsey.—E. P., Ghent.—C. V. M.—J. M.—H. B.—C. K, Pardublitz, Bohemia.—E. V. B—M. M., Tasmania.—C. D., Boston, U.S.—E. T., Northampton.—R. H. B., Turin.

## Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

SMOOTH CAYENNE PINE-APPLE.—Can any one give the history, and date of introduction of this fruit into Europe?

# Markets.

*COVENT GARDEN, July 9.*

A GENERAL falling off in demand for best goods, the London season being nearly over, and prices are consequently lower. Bush fruit has commenced, and with rain will show a heavy crop. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Cherries, ½-sieve | 4 0 | 10 0 | Lemons, per case | 15 0 | 35 0 |
| Currants, red, ½-siv. | 4 6 | .. | Melons, each | 2 0 | 3 0 |
| — black, ½-sieve | 5 0 | .. | Peaches, per doz. | 2 0 | 8 0 |
| Figs, per dozen | 3 0 | 5 0 | Pine-apples, Eng., lb. | 3 0 | 4 0 |
| Gooseberries, ½-sieve | 2 0 | 2 3 | — St. Michael, each | 2 6 | 5 0 |
| Grapes, per lb. | 1 0 | 3 0 | Strawberries, per lb. | 0 3 | 0 9 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 3 0 | .. | Horse Radish, bun. | 3 0 | 4 0 |
| Asparagus, English, per bundle | 1 6 | 6 0 | Lettuces, Cab., doz. | 1 0 | .. |
| Beans, Eng., per lb. | 0 9 | .. | — English Cos, doz. | 1 6 | .. |
| Beet, per dozen | 1 0 | .. | Mint, green, bunch | 0 4 | .. |
| Cabbages, per dozen | 1 6 | 2 0 | Mushrooms, basket | 1 0 | 1 6 |
| Carrots, per bunch | 0 6 | .. | Onions, per bushel | 6 0 | .. |
| Cauliflowers, Eng. lish, spring, per doz. | 2 0 | 4 0 | — Spring, per bun. | 0 6 | .. |
| Celery, per bundle | 1 6 | 2 6 | Parsley, per bunch | 0 4 | .. |
| Cucumbers, each | 0 6 | 1 0 | Peas, per quart | 1 0 | 1 6 |
| Endive, per dozen | 2 0 | .. | Radishes, per dozen | 1 0 | 2 0 |
| Garlic, per lb. | 0 6 | .. | Small salading, per punnet | 0 4 | .. |
| Herbs, per bunch | 0 2 | 0 4 | Spinach, per bushel | 4 0 | .. |
| | | | Tomatos, per lb. | 1 0 | .. |
| | | | Turnips, new, bunch | 0 6 | .. |

POTATOS.—English, new, 8*s.*; Jerseys, 5*s.* to 8*s.* per cwt. Old Potatos finished.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0–24 0 | Foliage Plants, various, each .. .. | 2 0–10 0 |
| Arbor-vitæ (golden), per dozen .. .. | 6 0–18 0 | Fuchsias, per dozen | 4 0– 9 0 |
| — (common), dozen | 6 0–12 0 | Hydrangeas, dozen | 12 0–18 0 |
| Begonias, per dozen | 4 0–12 0 | Lilium auratum, per dozen .. .. | 30 0–40 0 |
| Bouvardia, dozen .. | 9 0–18 0 | — longifolium, doz. | 18 0–36 0 |
| Calceolarias, doz. .. | 6 0– 9 0 | Lobelia, per doz. .. | 3 0– 6 0 |
| Carnations, 12 pots .. | 6 0–12 0 | Marguerite Daisy, per dozen .. .. | 8 0–15 0 |
| Cyperus, per dozen.. | 4 0–12 0 | Musk, per dozen .. | 2 0– 4 0 |
| Dracæna terminalis, per dozen .. | 30 0–60 0 | Myrtles, per dozen .. | 6 0–12 0 |
| — viridis, per doz. | 12 0–24 0 | Palms in variety, each .. .. | 2 6–21 0 |
| Erica, various, per dozen .. .. | 9 0–18 0 | Pelargoniums, per dozen trusses .. .. | 6 0–18 0 |
| Euonym.in var.,doz. | 6 0–18 0 | — scarlet, per dozen | 3 0– 9 0 |
| Evergreens, in var., per dozen .. .. | 6 0–24 0 | Rhodanthe, per doz. | 6 0– 9 0 |
| Ficus elastica, each.. | 1 6– 7 0 | Spiræa, per dozen .. | 9 0–18 0 |
| Ferns, in var., dozen | 4 0–18 0 | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | Myosotis, 12 bun. .. | 2 0– 4 0 |
| Arum Lilies, 12 blms. | 3 0– 6 0 | Pelargoniums, per 12 trusses .. .. | 0 6– 1 0 |
| Bouvardias, per bun. | 0 9– 1 0 | — scarlet, 12 trusses | 0 4– 0 6 |
| Carnations, 12 bun.. | 2 0– 4 0 | Picotees, 12 bun. .. | 4 0– 6 0 |
| — 12 blooms .. | 1 0– 2 0 | Pinks, var., 12 bun. | 1 0– 4 0 |
| Cornflower, 12 bun. | 2 0– 4 0 | Primula,double, bun. | 0 9– 1 0 |
| Eschscholtzia, 12 bun | 2 0– 4 0 | Rhodanthe, 12 bun. | 6 0– 9 0 |
| Eucharis, per dozen | 3 0– 6 0 | Roses (indoor), doz. | 1 0– 3 0 |
| Gardenias, 12 blooms | 1 6– 4 0 | — coloured, dozen | 2 0– 4 0 |
| Iris, 12 bun... .. | 4 0– 9 0 | — per doz. bunches | 2 0– 6 0 |
| Lapageria, white, 12 blooms .. .. | 2 0– 3 0 | — Moss, 12 bun. .. | 2 0– 5 0 |
| —red, 12 blooms .. | 1 0– 2 0 | Spiræa, 12 bunches.. | 6 0– 9 0 |
| Lilium longiflorum, — candidum, 12 bunches .. | 12 0–18 0 | Stephanotis, 12 spr.. | 2 6– 4 0 |
| Marguerites, 12 bun. | 3 0– 6 0 | Sweet Peas, 12 bun. | 2 0– 4 0 |
| Mignonette, 12 bun. | 3 0– 9 0 | Sweet Sultan, per 12 bunches .. .. | 4 0– 6 0 |
| | | Tropæolum, 12 bun. | 1 0– 1 6 |

## SEEDS.

LONDON: *July* 8.—There is but very little business passing on the seed market. Samples of new French Trifolium are now showing: the reports of damage done to the crops by the recent rains cause higher prices to be asked. More attention is being devoted to white Clover seed, and slightly enhanced rates are obtained. For Mustard seed there is rather more inquiry, but Rape seed is neglected. Hemp seed is still extremely cheap. The trade for Canary seed is steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday the increase1 granary stocks from recent large arrivals, combined with the estimated deficiency of 20 million quarters in the American Wheat crop, and the reported almost entire loss of the crops on the large Wheat-growing districts of Southern Russia, had great weight with holders, and there was no disposition to press sales at anything under current rates. Flour was also dull, and barely so steady in tone as Wheat. The dry weather is not so favourable for spring corn, which, although very quiet, is generally very steady in value.—On Wednesday the quotations for Wheat were nominally unaltered. Flour was flat. There was no movement in spring corn to affect values essentially.—Average prices of corn for the week ending July 4:—Wheat, 33*s.* 3*d.*; Barley, 28*s.*; Oats, 22*s.* 7*d.* For the corresponding period last year:—Wheat, 37*s.* 1*d.*; Barley, 27*s.* 2*d.*; Oats, 23*s.* 5*d.*

## HAY.

Tuesday's Whitechapel Market report states that trade was dull, with short supplies, more especially of straw. Quotations:—Clover, prime, 80*s.* to 107*s.*; prime second cut, 85*s.* to 107*s.*; inferior, 60*s.* to 75*s.*; hay, prime, 70*s.* to 96*s.*; inferior, 40*s.* to 60*s.*; and straw, 26*s.* to 37*s.* per load.—On Thursday there was a moderate supply on sale. Straw was in demand, and best hay somewhat dearer, but common quality very dull.—Cumberland Market quotations:—Clover, best, 85*s.* to 105*s.*; inferior, 60*s.* to 80*s.*; hay, best, 84*s.* to 95*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The latest quotations to hand are as follows:—Magnum Bonum, 50*s.* to 60*s.* per ton; new ditto, Jersey kidneys, 8*s.* 6*d.* to 9*s.* 6*d.* per cwt.; ditto, flukes, 10*s.* per cwt.; ditto, rounds, 7*s.* 6*d.* per cwt.; ditto, St. Malo, 6*s.* 6*d.* to 7*s.* 6*d.* per cwt.; ditto, Cherbourg, 6*s.* to 7*s.* per cwt.; ditto, flukes, 9*s.* to 9*s.* 6*d.* per cwt.—The imports into London last week consisted of 4452 boxes from Cherbourg, and 4549 packages from St. Nazaire.

## COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Ravensworth West Hartley, 14*s.* 9*d.*; Holywell West Hartley, 14*s.* 6*d.*; Walls End—Harton, 13*s.* 6*d.*; Tyne (unscreened), 11*s.* 3*d.*; Hetton, 15*s.*; Hetton Lyons, 13*s.* 6*d.*; Hawthorn, 13*s.* 6*d.*; Lambton, 14*s.* 6*d.*; Wear, 13*s.* 6*d.*; South Hetton, 15*s.*; East Hartlepool, 14*s.* 3*d.*; South Hartlepool, 13*s.* 9*d.*; Tees, 15*s.*; Lambton, 14*s.* 6*d.*; Chilton Tees, 13*s.* 9*d.*

**Government Stock.**—The closing prices of Consols on Monday were 99⅜ to 99⅝ for delivery, and 99⅛ to 99⅜ for the account. Tuesday's figures were 99⅛ to 99⅜ for delivery, and 99 15/16 to 99⅛ for the account. Wednesday's figures were 99 15/16 to 99⅛ for both transactions. Thursday's prices were 99⅛ to 99⅜ for delivery, and 99⅛ to 99⅛ for the account.


# THE COLONIAL MANURE.

*Unequalled for Excellence of Quality and Productive Powers.*

| | s. | d. | |
|---|---|---|---|
| Supplied in Tins, | 1 | 0 | each. |
| " " | 2 | 6 | " |
| " " | 5 | 0 | " |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| " ½ " | 20 | 0 | " |
| " 1 " | 37 | 6 | " |

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The COLONIAL MANURE is to be obtained from all Nurserymen and Seedsmen in the United Kingdom and the Colonies.

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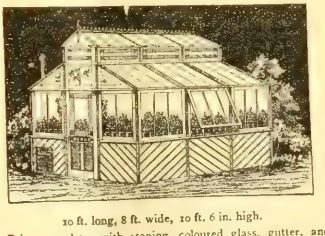
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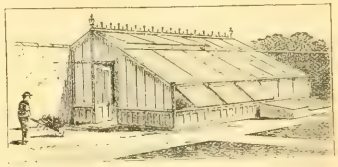
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RUDGEWAY HOUSE, EASTVILLE, BRISTOL.

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THREE-QUARTER GARDEN FRAME, with Registered set-opes, lights, 2 inches thick, glazed with 21-oz. glass, and painted four coats. 4 feet by 6 feet, £2 17*s.*; 8 feet by 6 feet, £4 10*s.* Cases, 6*s.*



**Cheap Cucumber Frames,** 8 ft. × 4 ft. £1 11*s.*; 12 ft. × 4 ft. £2; or fitted with joints and (registered) Set-opes, as shown above, 8 feet by 4 feet, 10*s.* extra; and 12 feet by 4 feet, 15*s.* extra. Cases, 5*s.*



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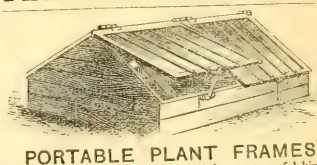
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| | | | |
|---|---|---|---|
| 6 feet long, 4 feet wide, packing cases free | £2 | 15 | 0 |
| 12 feet long, 4 feet wide, " " " | 4 | 15 | 0 |
| 6 feet long, 5 feet wide, " " " | 3 | 15 | 0 |
| 12 feet long, 5 feet wide, " " " | 6 | 10 | 0 |

The glass is nailed and puttied in.

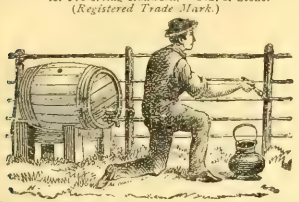
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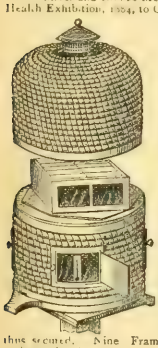
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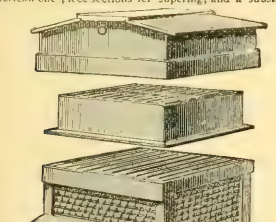


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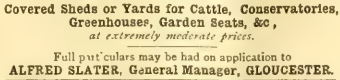
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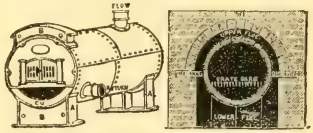
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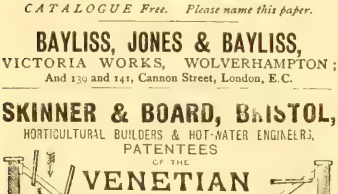
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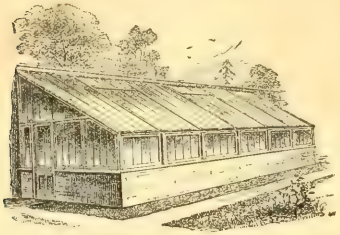
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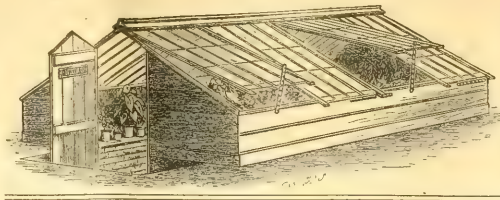
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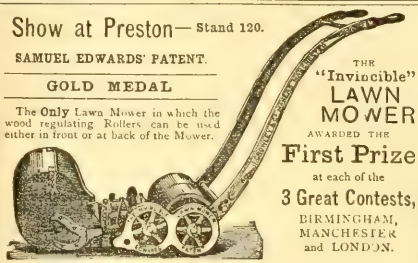
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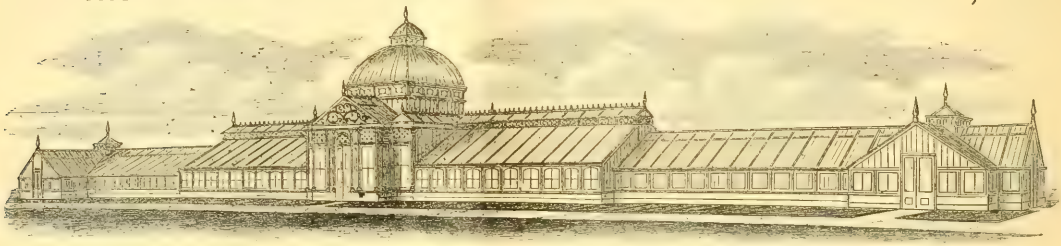
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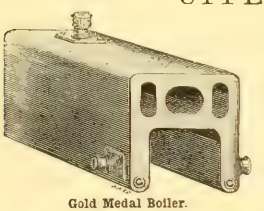
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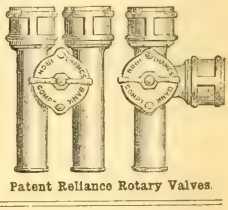
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THE

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WM CLIBRAN AND SON, Oldfield Nursery, Altrincham, and 12, Market Street, Manchester.

PRIMULAS.—PRIMULAS.—PRIMULAS.
Sixteenth year of distribution.
WILLIAMS' SUPERB STRAIN, 1s. 6d. per doz., 10s. per 100.
CINERARIAS same price. Package and carriage free for cash with order. The above are strong, and fit for potting into 3-inch pots.
JOHN STEVENS, The Nurseries, Coventry.

Now in Full Bloom.
BEGONIAS.—Gold Medal Prize Plants, presenting an unrivalled floral display. Visitors are cordially invited. Frequent trains from the City and from the West End to Catford and Forest Hill Stations.
LAING AND CO., Nurseries, Forest Hill, S.E.

KELWAY'S MODEL CINERARIA,
KELWAY'S MODEL PRIMULA,
KELWAY'S MODEL CALCEOLARIA,
2s. 6d. and 5s. per packet.
KELWAY AND SON, Langport, Somerset.

Now Ready.
TEA and NOISETTE ROSES, in pots, of best sorts only, in great quantity, and of best possible quality. Priced LIST gratis. A sample dozen carefully packed for travelling, will be put on Railway on receipt of 13s. 6d.
EWING AND CO., Sea View Nurseries, Havant, Hants (late of Eaton, near Norwich).

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

EUCHARIS AMAZONICA FLOWERS.—Price on application.
TURNER BROS, Nurserymen and Florists, Allerton, Liverpool.

Now Ready, Strong Plants of
F. V. RASPAIL, the best winter-flowering Scarlet Double GERANIUM for Market.
Price, 8s. per 100, £3 10s. per 1000. Packed and put on rail.
JAS. HASLETT, Florist, Bolney, Hayward's Heath, Sussex.

Rape Seed.
ENGLISH-GROWN RAPE SEED FOR SOWING.
CHARLES SHARPE AND CO. have the above to offer, of fine quality. Sample and price on application. AGRICULTURAL MUSTARD.
CHARLES SHARPE AND CO., Seed Merchants, Sleaford.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice FRUIT and FLOWERS.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., REQUIRE a quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.
ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

WANTED, good GERANIUM CUTTINGS of Henry Jacoby, Master Christine, Vesuvius, Gold and Silver Tricolors, and other choice Bedders. Send samples and price per 1000 to
DANIELS BROS., Town Close Nurseries, Norwich.

WANTED, BUDS of ROSES, A. K. Williams, Gloire de Dijon, Lady Mary Fitzwilliam. Quantity and price to
HUGH LOW AND CO., Clapton Nursery, London, E.

Hydrangea Otaksa, in flower.
HUGH LOW AND CO. offer the above, with fine buds, in 48-pots, 50s., 75s., 10os. per 100.
Clapton Nurser, London, E.

To the Trade.
EARLY WHITE ROMAN HYACINTHS.
Our first consignment of these has arrived in splendid condition, and quite up to specified size. We shall be glad to quote lowest special price upon application.
HURST AND SON, Seed Warehouse, 157, Houndsditch, London, E.

NOTICE. — H. COLLYER, 147, Camden Road, Tunbridge Wells (late Propagator to T. Cripps & Son), can now offer CLEMATIS JACKMANNI and LANUGINOSA CANDIDA, strong Plants, in 4-inch pots, at 60s. per 100, £25 per 1000.

Specimen Roses, in pots 7 and 8 inches diameter.
W. JACKSON AND CO., Nurseries, Bedale, have a few PRIZE ROSES, as above, to dispose of, very cheap, at 18s. to 24s. per doz. Particulars on application.

FOR SALE, Cheap, several fine Exhibition Plants—CROTON JOHANNIS, C. FASCIATUS, DIPLADENIAS, IXORAS, EUCHARIS, CLERODENDRONS, &c.—D. BLOODWORTH, Kingswood Hill Nursery, Bristol.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s.
BARR AND SON, King Street, Covent Garden, W.C.

To Nurserymen, Seedsmen, and Florists.
DUTCH BULBS—Season 1885.
WHY pay freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate the same quality and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up the end of Dec. in each year.

SPECIAL OFFER OF GOOD PLANTS.
PALMS, specially hardy grown, Latania borbonica and Seaforthia elegans, 20 inches high, 12s. per dozen, 80s. per 100; Adiantum cuneatum, 5-inch pots, good specimens, 9s. per dozen, 60s. per 100; strong plants, out of thumbs, 3s. per dozen, 18s. per 100. GARDENIA INTERMEDIA, 5-inch pots, good plants, 18s. per dozen; small plants, 4s. per dozen, 30s. per 100. All strong healthy plants.
The GARDENER, Holly Lodge, Stamford Hill, London, N.

WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application.
It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad.
WATKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street, Strand, W.C.

ROMAN HYACINTHS. — Early Single White, for forcing, first size Bulbs, 15s. per 100. Special quotation for large quantities.
EAST LOTHIAN STOCK.—Splendid strain, Purple, White, Scarlet, Crimson, and White Wall-leaved, 1s., 2s. 6d., and 5s. per packet.
IRELAND and THOMSON, 20, Waterloo Place, Edinburgh.

To the Trade.
SINGLE DAFFODILS, Scilla campanulata, Star of Bethlehem, good sound bulbs. Samples and price on application.—THOS. PIPER AND SON, Maresfield, Sussex.

Berlin Lily of the Valley, finest Single Blooming Crowns; HELLEBORUS NIGER, &c., &c.
A. RIEMSCHNEIDER, NURSERYMAN, Brandenburg-on-Havel, by Berlin, Germany, has just published his Wholesale CATALOGUE of the above, which may be obtained post-free from his Agents,
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

East Lothian Intermediate Stocks.
THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., & 5s. each colour. Price to the Trade on application.
By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

Helleborus niger (Christmas Rose).
A. RIEMSCHNEIDER, NURSERYMAN, Brandenburg-on-Havel, by Berlin, having an immense stock of these useful Plants, can offer them at prices, per 100 or 1000, which defy competition. See CATALOGUE, which may be obtained, free of
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

Strawberries for Present Planting.
CHARLES TURNER'S Descriptive and Priced CATALOGUE can be had on application.
The Royal Nurseries, Slough.

LOVEL'S STRAWBERRY RUNNERS.
Strong, healthy, and well-rooted.
Sample of Plants, 3d. Price LIST free.
W. LOVEL AND SON.
Strawberry Growers, Driffield.

## SALES BY AUCTION.

**Tuesday Next.**

IMPORTED ORCHIDS, in splendid condition, from Messrs. Shuttleworth, Cardes & Co., comprising Lælia albida, enormous masses; L. anceps, the very dark form, L. autumnalis atrorubens; Odontoglossum Dominianum, O. madrense; Oncidium tigrinum, O. Kramerianum; Epidendrum vitellinum majus, and others; a few ESTABLISHED ORCHIDS, importation from New Zealand of New Seeds, consisting of Eucalyptus of sorts, Alsophilas, Iris Robinsoniana, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, July 21, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Friday Next.**

CATTLEYA MOSSIÆ, fine masses; PESCATOREI CERINA, ONCIDIUM TRICUSPIDATUM, COMPARETTIA FALCATA, MASDEVALLIAS, DENDRODIUMS, Mexican ORCHIDS and others, and 600 Bulbs EUCHARIS AMAZONICA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, July 24, at half-past 12 o'Clock precisely

On view morning of Sale, and Catalogues had.

**Flowering Orchids—Special Sale**

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS, in Flower and in Bud, will take place on TUESDAY, July 28, for which they will be glad to receive Notice of Entries as early as possible.

**Whetstone, Middlesex—Preliminary Notice.**

The well-known FREEHOLD PROPERTY, distinguished as the Whetstone Nurseries, or New Lodge, Whetstone, carried on so successfully for upwards of thirty years by the present proprietors, comprising about 5 Acres of LAND, Thirty-four superiorly erected GREENHOUSES, with nearly 4 miles' run of HOT-WATER PIPING, a substantially-built Twelve-roomed DETACHED RESIDENCE, and numerous other TRADE BUILDINGS; also 13 Acres of valuable Freehold Building LAND adjoining, opposite Oakleigh Park, and 10 minutes' walk from Totteridge Station.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at The Mart, London, E.C., at an EARLY DATE, the above very VALUABLE PROPERTY, in three lots, by order of Messrs. Davis & Son, in consequence of failing health of Mr. Davis, Jun.

Particulars and Plans will be ready in due course, and can be obtained at the Auctioneers' Office.

**Thursday Next**—(Sale No. 6942.)

VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, July 23, at half-past 12 o'Clock precisely, a fine importation of PESCATOREIA KLABATA, wonderful pieces; immense masses of CATTLEYA SCHILLERIANA, C. DOWIANA, in extra condition; LÆLIA PURPURATA, L. ANCEPS STELLA, and other valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

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WANTED, to RENT, at ONCE, about an Acre of LAND, or a Large GARDEN, with Glass; also a COTTAGE, suitable for a Florist, about 12 miles from London.

FLORIST. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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FOR DISPOSAL, a GARDENER'S, FLORIST'S, and CARTING BUSINESS. Genuine old-established concern, nursing high-class neighbourhood. Ill-health cause of selling. Incoming all at £150, including stock, 2 Horses, Van, and 2 Tip Carts.

Further particulars of HERBERT DRAKE, 3 doors from the "Prince of Wales," Harrow Road, Paddington, W.

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TO BE DISPOSED OF, a small NURSERY, consisting of 4 Greenhouses, of about 2000 feet of Glass, large Garden of about an acre, and good Shop in main thoroughfare. Held as a yearly tenant. Together with the business of a Seedsman, Fruiterer, and Greengrocer, to which might be added that of a Jobbing Gardener, in a rapidly rising neighbourhood, 9 miles north of Covent Garden, with Horse and Carts, and all appliances for carrying on the above. Advertiser removing to larger premises, the reason of disposing of the same.

Apply on the premises, to J. W. WOODHALL, Seedsman, Florist, and Fruiterer, High Road, Whetstone. Nearest Railway Station, Woodside Park, High Barnet Line.

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**Gardening.**

TO BE DISPOSED OF, the Business, Greenhouses, Tools, &c., of a Jobbing Gardener. Death cause of letting.

80, St. John's Wood Terrace, N.W.

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**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. T. THEOBALD AND CO., 419, California Street, San Francisco, California.

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**Capital Old-fashioned Garden.**

TO BE LET, FAMILY RESIDENCE, facing Clapham Common, having advantages of the above nature not to be found in connection with a modern builder's house, and with but few houses within 10 short a drive of the City and West End. Good accommodation for a family. House much improved and modernised of late years. Stabling, Cow-house, Fowl-houses, &c., Vineries, Stove-house, Rose-house, and Melon Grounds. Worthy the attention of any one who can appreciate a good old garden.

Messrs. M'LACHLAN AND SONS, Clapham Common; and Messrs. DEBENHAM, TEWSON, FARMER, AND BRIDGEWATER, 80, Cheapside, E.C.

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TO LET (16 miles from London), a NURSERY of 4 Acres, with 3 Greenhouses, 8-roomed House, Stabling, and Shed accommodation. Rent £50. Price for stock, lease, &c., £400.

Apply, R. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

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JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite.

Swan Place, Old Kent Road, S.E. Established 1854.

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**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared.

115, Listria Park, Stamford Hill, N.

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KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant. CATALOGUES gratis. KELWAY AND SON, Langport, Somerset.

---

CŒLOGYNE CRISTATA.—Six Pans of the above for sale. Average forty growths each. Guaranteed clean and in perfect health. No reasonable offer refused.

J. EASTER, Rathdaire, Monasterevan, Ireland.

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EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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TO BE SOLD, CHEAP, a SMALL COLLECTION of STOVE and GREENHOUSE PLANTS, including a very fine ALLAMANDA in flower, STEPHANOTIS, HOYA CARNOSA, 100 EUCHARIS AMAZONICA CANDIDA, PANCRATIUM FRAGRANS, 100 Maidenhair FERNS, 130 CYCLAMEN, good strain; DRACÆNAS, two dozen GARDENIAS, Pot ROSES, good sorts; AZALEAS, CAMELLIAS, FICUS ELASTICA, from 1 to 6 feet high; four dozen GERANIUMS, double White, Heroine, and several others. For further particulars apply to Mr. W. MAY, Gardener, Vine Cottage, Navarino Road, Hackney, E.

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WHOLESALE BULB CATALOGUE. Contains List of all varieties of English, Dutch, and French grown Bulbs, including the following:—

ANEMONES, all the best varieties.
CHIONODOXA LUCILLIÆ, charming blue spring flower.
CROCUS, all named varieties, and mixed.
FREESIA REFRACTA ALBA, beautiful white sweet-scented
HELLEBORUS NIGER, Christmas Rose. [Cape bulb.
HYACINTHS, all colours, named, for pot, glasses, or bedding.
IRIS, all the best varieties
IXIAS, handsome showy spring flowers.
LILIES, all the 22 best named sorts.
NARCISS, Polyanthus varieties.
NARCISS and DAFFODILS, in forty varieties.
SCILLAS and SNOWDROPS, including the newest varieties
TULIPS, Double and Single, in great variety. [of the latter.
WINTER ACONITES, bright yellow, the first bulb to bloom after Christmas.

May be had on application. Please compare our prices before sending your orders abroad.

WAIKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street, Strand, W.C.

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SOMETHING WORTH HAVING.

## AQUILEGIA GLANDULOSA,

Grigor's Glandular Columbine (true).

"Respecting our variety of Aquilegia or Columbine, Dr. Lindley, in the *Gardeners' Chronicle*, said:—"The plant is perhaps the handsomest hardy perennial in cultivation; its stems rise about 2 feet high, and sometimes carry from 50 to 80 blossoms. We have a plant now before us which, after a journey from Scotland, has expanded flowers, each 3½ inches in diameter, with broad, thin, delicate, spreading sepals, of the deepest ultramarine-blue surrounding 5 short petals, the upper part of which is pure white, resting on an azure ground. The effect is beautiful in the extreme, and no description that we have formerly penned has done justice to its exquisite appearance."

Having sent a specimen of this Columbine to the Editor of the *Gardeners' Magazine*, he says (June 20, 1885) "If we could favour our readers with a sight of a bunch of flowers we have now before us, a few of them would exclaim, 'Prodigious!' 'Wonderful!' 'Glorious!' and so forth. . . . . We are bound to be cautious in the employment of the language of eulogy, but we shall probably be quite safe in saying that there is not in cultivation a finer hardy herbaceous plant than Grigor's variety of A. glandulosa, the Glandular Columbine. The plant is robust, handsome, and hearty; the flowers are produced in great profusion; they average 3½ inches in diameter; the sepals deep ultramarine-blue, the corolla pure white with blue spot at the base of each petal, remarkably elegant, distinct, and refined, at the same time showy almost to a fault. We advise all who appreciate fine hardy plants to secure this Forres edition of an old favourite."

**Now Ready.**

*Price for strong Flowering Plants, carriage paid, 6s. per dozen, or 2 dozen for 10s., likewise carriage paid.*

JOHN GRIGOR & CO.,
THE NURSERIES, FORRES.

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EARLY WHITE ROMAN HYACINTHS.

## B. S. WILLIAMS

Takes the opportunity of announcing that he has received his annual consignments of the above Bulbs, *which are invaluable for early forcing*, and solicits Early Orders, which will have prompt and immediate attention.

*The Bulbs are unexceptionally fine this year.*

VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

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**New Turnip Seed.**

CHARLES SHARPE AND CO. have to offer, of crop 1885, their choice selected stocks of TURNIPS for present sowing.

CHARLES SHARPE AND CO., Seed Merchants, Sleaford.

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H. WATERER, Importer of Plants and Bulbs, 3809, Powelton Avenue, Philadelphia, Pa., U.S.A., offers:

PAMPAS PLUMES, fresh white, for fall 1885, all picked, 18 to 24 inches, $3 per 100, $25 per 1000; 24 to 30 inches, $6 per 100, $50 per 1000; 30 to 36 inches, $10 per 100, $80 per 1000; 36 inches and upwards, $15 per 100, $100 per 1000.

LILIUMS (orders for these must not arrive later than Sept. 1):—columbianum, $10 per 100, $80 per 1000; pardalinum, true, $15 per 100, $110 per 1000; pardalinum var. pubellum, $14 per 100, $100 per 1000; parvum, $25 per 100, $200 per 1000; Humboldtii, $15 per 100, $100 per 1000; Washingtonianum, $25 per 100, $200 per 1000. Very fine picked bulbs.

**Ferns.—Ferns.—Ferns.**

TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECOCUM, A. NITICUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20s. per 100, £9 per 2000.

ADIANTUM LE GRANDE, nice plants, ready for potting on, 35s. per 100.

ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40s. and 50s. per 100.

The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

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**Tecophilæa.**

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland, are now ready to send out good cultivated flowering Bulbs of this splendid and rare beauty for the early spring. Such bulbs are much to be preferred to the freshly introduced ones.

E. H. K. & Son supply such Bulbs free to Great Britain and Ireland. No charge for package when remittance with Orders is sent in Post-bills or Cheques.

TECOPHILÆA CYANOCROCUS, 6s. each, 60s. per doz.
" " LEICHTLINI, 6s. each, 60s. per doz.
" " VIOLACEA, splendid novelty, 12s. 6d. each.

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**Sow Now for Early Flowering in Spring.**

ROEMER'S Superb Prize PANSY SEED. The best Pansy Seed in the World.

FANCY VARIETIES, saved from named flowers, splendid, mixed, 10s. per ounce, 6d. per packet.

SHOW VARIETIES, saved from named flowers, splendid, mixed, 5s. per ounce, 6d. per packet.

FANCY and SHOW VARIETIES, fine, mixed, 3s. per ounce, 3d. per packet.

ASSORTMENT of 18 splendid distinct varieties, containing one packet, 1s.

CAREFULLY SAVED only from named Exhibition Flowers, of all varieties, splendid, mixed, highly recommended, 2s. 6d. per 1000 seeds, 6d. per packet.

GIGANTIC-FLOWERED SHOW VARIETIES, new and distinct, flowers up to 4 inches in diameter, 5s. per 1000 seeds, 2s. per ounce. My Pansy gained the First Prize at the Exhibition at Berlin, 1884.

GIGANTIC FLOWERS, FANCY VARIETIES, very choice collection, 10s. per 1000 seeds, 2s. 6d. per packet. Awarded First Prize Berlin Exhibition, 1884.

For Separate Sorts, see CATALOGUE, forwarded Post-free on application.

FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

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**To the Trade only.**

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale Catalogue (No. 379A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1885-86, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only 884 articles of the collection, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out of this specialty. The prices of Hyacinths in general are considerably lower than before. Prices of Tulips and other Bulbs, too, are in many instances inferior to former quotations. German and French editions as well as a separate English edition for America, are published.

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S. SHEPPERSON, FLORIST, Prospect House, Belper, Derbyshire, begs to offer the following, of which he makes a specialty:—

PRIMULAS! PRIMULAS!! PRIMULAS!!!—Grand premier prize strain of the finest new colours, as White, Carmine, Rose, Salmon, Crimson, Mauve, &c.; fine large trusses and beautifully fringed flowers. Strong plants, to bloom well, 1s. 3d. per dozen; extra strong, 1s. 6d., all free.

CINERARIAS! CINERARIAS!! CINERARIAS!!!—Bull's celebrated prize strain, dwarf compact habit, and most brilliant colours; cannot possibly be excelled. Good plants, 1s. 3d. per dozen; extra strong, 2s. 6d., all free.

CYCLAMEN! CYCLAMEN! CYCLAMEN GIGANTEUM!!!—Grand prize strain, warranted. All the finest new colours. 2s. 6d., free; extra strong, 2s., free.

S. SHEPPERSON, Florist, Prospect House, Belper, Derbyshire.

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**By Special Warrant.**

"Superb SEEDS for PRESENT and Later SOWING."

DICKSON'S CHOICEST strains of PRIMULA, CALCEOLARIA, CINERARIA, CYCLAMEN, BEGONIA, and AURICULA, in packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each. Double German WALLFLOWER, superb strain, 1s. per packet. Extra selected Single Dark Blood-red WALLFLOWER, 6d. and 1s. per packet. Also all other FLOWER SEEDS, for "Spring Gardening," as well as VEGETABLE SEEDS for Present Sowing. Carriage and Post free. Seeds and Plants of every description. Descriptive Priced CATALOGUES Post-free.

JAMES DICKSON AND SONS,
108, EASTGATE STREET, CHESTER.

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HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and for his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same protection and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his free on demand.

**Clapton Nursery, London, E.**
**Bush Hill Park Nursery, Enfield, N.**

At the above-named Nurseries are cultivated, in unusually large quantities, Azaleas, Bouvardias, Camellias, Climbing Plants, Cyclamen, Epacris, Ericas, Ferns, Ficus, Flowering and Decorative Plants in variety; Fruit Trees, Gardenias, Genistas, Grape Vines, Greenhouse Plants in variety; Palms, Pelargoniums, Rhododendrons, Roses, Shrubs, Stove Plants in variety, &c.

ORCHIDS A SPECIALTY.—The stock at the Clapton Nursery is of such magnitude that without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

The glass structures cover an area of upwards of **237,000** feet superficial.

## HUGH LOW & CO.

cordially invite Gentlemen interested in Horticulture to inspect the Nurseries.

## R O S E S

IN POTS; all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per doz.

*Descriptive LIST free on application.*

## RICHARD SMITH & CO.,

WORCESTER.

## FERNS A SPECIALTY.

**Hundreds of Thousands of**

**FERNS AND SELAGINELLAS,**

for Stove and Greenhouse Cultivation, and Outdoor Ferneries.

**ABRIDGED CATALOGUE**

of over 1200 Species and Varieties free on application.

**LARGE CATALOGUE (price 1*s.*),** containing 75 Illustrations of Ferns and Selaginellas, valuable "Hints on Fern Culture," and other useful and interesting information.

## W. & J. BIRKENHEAD,

FERN NURSERY, SALE, MANCHESTER.

## C L E M A T I S

**JACKMANNI ALBA (Noble).**

"The hardy flowering plant of the season." "Certificated unanimously."

See *Gardeners' Chronicle*, July 28, 1883.

*Now being sent out at 7*s.* 6*d.* and 10*s.* 6*d.* each. Cash or reference.*

CHARLES NOBLE, BAGSHOT.

*Come and See.*

## OUR BEGONIAS.

We hold much the largest and finest stock in Europe, which enables us to offer Plants showing flowers at greatly reduced prices. The display both in and ouside our houses is a grand sight. *Send for a Catalogue.*

## IVY-LEAF PELARGONIUM "MADAME THIBAUT."

Much the finest of this class ever seen. First-class Certificate. Double as any Rose. Plants, showing flower, 3*s.* each, post-free.

## H. CANNELL & SONS,

THE HOME FOR FLOWERS

## GARDEN REQUISITES.

**COCOA-NUT FIBRE REFUSE.**

*4d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton in 2-bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

**12-oz. Sample Packets, free by post, 12 Stamps.**

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., 5*s.* 6*d.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 Tons. WALKER AND CO., Farnborough Station, Hants.

## GARDEN REQUISITES.

TWO PRIZE MEDALS.

**Quality, THE BEST in the Market.** (All sacks included.)
PEAT, best brown fibrous .. 4*s.* 6*d.* per sack; 5 sacks for 20*s.*
PEAT, best black fibrous .. 3*s.* 6*d.* ,, 5 sacks for 15*s.*
PEAT, extra selected Orchid 5*s.* 6*d.* ,,
LOAM, best yellow fibrous ..
PREPARED COMPOST, best
LEAF MOULD, best only ..
PEAT MOULD, ,, ,, } 1*s.* per bush. (sacks included).
SILVER SAND, coarse, 1*s.* 3*d.* per bush., 12*s.* half ton, 22*s.* ton.
RAFFIA FIBRE, best only .. .. .. 1*s.* per lb.
TOBACCO CLOTH, finest imported .. 8*d.* lb., 28 lb. 18*s.*
TOBACCO PAPER, ,, (Specialité) 8*d.* lb., 28 lb. 18*s.*
MUSHROOM SPAWN, finest Multrack .. 5*s.* per bushel.
SPHAGNUM MOSS, all selected, 2*s.* per bush., 6*s.* per sack.
**COCOA-NUT FIBRE REFUSE** (by Chubb's Special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

## CHUBB, ROUND & CO.,

**WEST FERRY ROAD, MILWALL, LONDON, E.**

Notice

COCOA-NUT FIBRE REFUSE: newly made.—Truck-load of 2 tons, 21*s.*; twenty sacks of same, 14*s.*; forty, 25*s.*, sacks included. All Free on to Rail. Cash with orders.—J. STEVENS AND CO., Cocoa-nut Fibre Merchants, "Greyhound Yard," and 153, High Street, Battersea, S.W.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.—Fresh Cocoa-Nut Fibre Refuse, 4 bushel bags, 1*s.* each; 30 for 25*s.*—bags included. Two-Ton Truck, free on Rail, 30*s.* Best Brown Fibrous Kent Peat, 5*s.* per sack; 5 for 22*s.* 6*d.*; 10 for 35*s.*; 20 for 60*s.* Best Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; 10 for 35*s.*; 20 for 60*s.* Best Coarse Bedford Sand, 1*s.* 6*d.* per bushel; 14*s.* per ½ ton; 25*s.* per ton. SPECIALITÉ TOBACCO PAPER, 10*d.* per lb.; 28 lb., 21*s.*; cwt., 70*s.* Second quality, 7*d.* per lb.; 28 lb., 16*s.* Finest Tobacco Cloth, 8*d.* per lb.; 28 lb. for 18*s.* Leaf-mould, 5*s.* per sack. Peat Mould, 4*s.* per sack. Yellow Fibrous Loam, 3*s.* per sack. Charcoal, 2*s.* 6*d.* per bushel. Bones, Guano, Sphagnum, &c. LIST free. Special prices to the Trade for cash.
W. HERBERT AND CO.,
HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, S.E.
(near London Bridge).

**A GREAT SUCCESS.**

## JEYES' "GARDENER'S FRIEND."

One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can,

**Effectually Removes all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.**

Price, 3*s.* 6*d.* per Gallon, including drum; 40-gallon Casks, £4 10*s.* Carriage paid.

**JEYES' SANITARY COMPOUNDS CO. (Limited),**
43, Cannon Street, London, E.C.

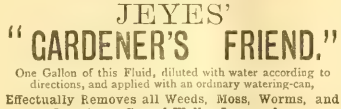
GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and as lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

**Rosher's Garden Edging Tiles.**



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.



GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

## THOMAS GREEN & SON

(LIMITED),

**Smithfield Ironworks, Leeds,**

**And Surrey Works, Blackfriars Road, London, S.E.**

Horticultural Engineers to Her Majesty the Queen,

*CALL SPECIAL ATTENTION TO THEIR*

PATENT

**WROUGHT-IRON TUBULAR**

## HOT-WATER BOILERS,

And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;

**SADDLE BOILERS,**

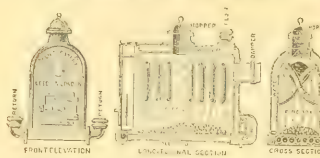
With WATERWAY BACKS, and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.

*They are the neatest, cheapest, most effective, and durable of any extant.*

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

**Had the First and Highest Prize, a Silver Medal,**

*Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3, 1881.*




The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."

Descriptive Illustrated Price List may be had free on application.

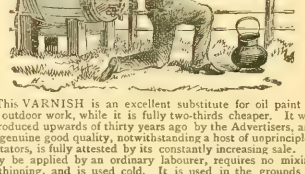
Estimates given for all kinds of Heating Apparatus, and Hot-water Fittings of every variety supplied on the shortest notice.

Galvanised Iron Cisterns, from 4*d.* to 12*s.* 6*d.* per gallon.

**Oil Paint no Longer Necessary.**

HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone.

*(Registered Trade Mark.)*



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June 21, 1876.*—Sir, I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

*CAUTION.*—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

Large Illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to

HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 196, St. Vincent Street, Glasgow.

*Appointed by Royal Warrant Makers to*
**Her Majesty the Queen and His Royal Highness the Prince of Wales.**

# GREEN'S
**PATENT**
**"Silens Messor" and "Multum in Parvo"**
# LAWN MOWERS

Have been proved to be the best, and they have carried off every Prize in all cases of competition

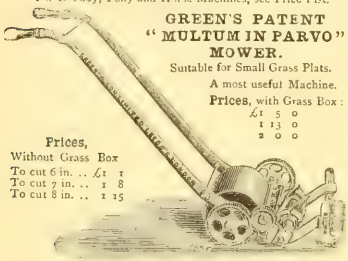
Every Lawn Mower is guaranteed to give entire satisfaction, otherwise they may be returned AT ONCE, free of cost to the Purchaser.



**HAND MACHINES,**
**"Silens Messor" Pattern.**

| | | | |
|---|---|---|---|
| To cut 8 in. wide .. | £2 10 0 | To cut 16 in. wide .. | £6 10 0 |
| To cut 10 in. wide .. | 3 10 0 | To cut 18 in. wide .. | 7 10 0 |
| To cut 12 in. wide .. | 4 10 0 | To cut 20 in. wide .. | 8 0 0 |
| To cut 14 in. wide .. | 5 10 0 | To cut 22 in. wide .. | 8 10 0 |
| To cut 24 in. wide .. | £9 0 0 | | |

For Donkey, Pony and Horse Machines, see Price List.



**GREEN'S PATENT**
**"MULTUM IN PARVO" MOWER.**
Suitable for Small Grass Plats.
A most useful Machine.
**Prices,** with Grass Box:
£1 5 0
1 13 0
2 0 0

**Prices,**
Without Grass Box
To cut 6 in. .. £1 1
To cut 7 in. .. 1 8
To cut 8 in. .. 1 15

It is simple in construction, easily adjusted, is well adapted for mowing small plats, cutting borders, verges, round flower beds, the edges of walks, &c. It is a most handy, serviceable machine, and very easy to work.



**GREEN'S PATENT**
**GRASS EDGE CLIPPER.**
With Chain and Wheel Motion.
A most useful Machine.
**Price, £1 16s.**
Packing Case, 2s.

SIZE,
inches wide by
7 inches diameter.



**GREEN'S PATENT**
(No. 2412)
**LAWN TENNIS COURT MARKER.**
**Price 20s.**
Small Bag of Marking Composition, Mat, and Packing, 1s. 6d.

**Price List free on application.**

The above Machines can be had of all respectable Ironmongers and Seedsmen in the United Kingdom, or direct from the Manufacturers,

THOMAS GREEN & SON
(LIMITED),
SMITHFIELD IRONWORKS, LEEDS; and
SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.
Carriage paid to all the Principal Railway Stations in the United Kingdom.

# PRIMULAS—PRIMULAS—PRIMULAS.

**PRINCESS LOUISE,** fine fleshy white, of great substance, the finest white Primula extant. 20 Seeds, 2s. 6d.; 50 Seeds, 5s.

**MARQUIS of LORNE,** fine purple-crimson, immense size and substance. The finest Primula of this colour, 30 Seeds, 2s. 6d.

The above Primulas have been carefully selected, and much finer than when originally introduced.

**CARTER'S BLUE,** novel colour. 20 Seeds, 2s. 6d.

We have just harvested a fine lot of the above Primulas, the seed was selected and gathered by Mr. Rose, who raised (during the time he was with the late Mr. Tomkins) Marquis of Lorne, Princess Louise, Emperor, and the Queen, which may fairly claim to be the four best Primulas in cultivation.

One remarkable characteristic of these Primulas is that while most Primulas degenerate after the first few spikes of bloom, the sorts raised by Mr. Rose invariably improve on 2-year or 3-year old plants, whilst the other kinds are generally useless after the first year.

POPE & SONS,
KING'S NORTON; 120, 121, and 122, MARKET HALL, and 3, GREAT WESTERN ARCADE, BIRMINGHAM.

**PRINCE'S**
## IMPROVED EARLY NONPAREIL CABBAGE.



*6d. per Packet, or free by Post, 7 stamps.*

Sow, for earliest Spring Crops, from middle to end of July, and transplant first week in October; also, sow again from March till June for successions during Summer and Autumn.

This is generally admitted to be the quickest and best flavoured kind; in its early formation dwarf and compact in habit; and, if left, will form a large handsome Cabbage in June; at the same time it is a variety less liable to run to seed than any other grown.

**GEORGE PRINCE, Seedsman and Rose Grower,**
**14, Market Street, OXFORD.**

**To Orchid Amateurs, Herbarists, Collectors of Natural History Specimens, &c.**

# MR. F. C. LEHMANN,
## OF POPAYAN (CAUCA), U.S. OF COLOMBIA,

Who has travelled for over 9 years in Central and South America, has established himself in the above place to continue his labours.

*Gentlemen desirous to complete or enlarge their Collections from that part of South America may direct their Letters to POPAYAN.*

# SPECIAL CULTURE OF FRUIT TREES AND ROSES.

# THOMAS RIVERS & SON

INVITE those interested in the above to visit their establishment. The Fruit Houses for the growth of PEACHES, NECTARINES, GRAPES, CHERRIES, FIGS, ORANGES, &c., are now full of Fruit in various stages, and will continue to be of great interest until the end of September.

Many thousands of PYRAMID, BUSH, and CORDON TREES are Grown and Fruited out-of-doors. A large stock of the best ROSES will be in flower. Full information will be given of our various methods of cultivation.

*The Nurseries are situate between the Harlow and Sawbridgeworth Stations, Great Eastern Railway, each 1 mile distant, and conveyances may be secured.*

SAWBRIDGEWORTH, HERTS.

# WEBBS'

## EMPEROR CABBAGE,

The Best Variety in Cultivation,

6d. and 1s. per packet.

7s. per Pound, Post-free.

Mr. J. MUIR, in the "Journal of Horticulture" of May 24, says:—

"Our largest piece of Spring Cabbage measures 70 feet by 50 feet, and here we have many sorts growing. The best of all these at the present time is WEBBS' EMPEROR."

| | | |
|---|---|---|
| EARLY NONPAREIL CABBAGE | Per oz., post-free | 6d. |
| ENFIELD MARKET | „ | 6d. |
| EARLY RAINHAM | „ | 6d. |
| EARLY DWARF YORK | „ | 6d. |
| LARGE RED DUTCH | „ 6d pkt. | 9d. |

## ONION.

| | Packet. | Ounce. |
|---|---|---|
| Webbs' New Red Globe Tripoli | 6d. | 1s. |
| White Italian Tripoli | 6d. | 9d. |
| Large Flat Red Tripoli | 6d. | 9d. |
| Giant Rocca | 6d. | 1s. |
| White Lisbon | — | 6d. |
| White Spanish or Reading | — | 6d. |

All Garden Seeds Free by Post or Rail.
*Five per Cent. Discount for Cash.*

## WEBB & SONS,

THE QUEEN'S SEEDSMEN,
WORDSLEY, STOURBRIDGE.



The Livepool
Horticultural Co.
(John Cowan), Limited,

**GRAPE VINES.** Have this season a stock of GRAPE VINES which have never been surpassed, if indeed equalled. Intending purchasers are requested to come and see them during the growing season. The Black Hamburghs for fruiting in Pots are especially fine, and the entire stock are from eyes this season. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. and 12s 6d. each.

**TEA ROSES.** The Company have a very large stock of TEA and NOISETTE ROSES, comprising all the leading varieties. The plants are healthy and in good condition for sending out. 12s., 18s., and 24s. per dozen.

**MANURE.** COWAN'S VINE and PLANT MANURE. This is too well known to need recommendation. 18s. per cwt.

**ORCHIDS.** The Company have a large stock of established and Imported ORCHIDS, all in fine condition, and they are constantly receiving fresh importations from various parts of the world.

CIRCULARS WITH FULL PARTICULARS ON APPLICATION.
*Special Prices to the Trade.*

THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.



# ROSES.

The Largest Rose Nurseries in the World.

A visit is respectfully invited. No description can convey the slightest idea of the magnificent stock now in flower. They will continue in their beauty until October.

*Descriptive Catalogue sent post-free on application.*

CRANSTON'S NURSERY and SEED CO.
(LIMITED),
KING'S ACRE, HEREFORD.



# SUTTON'S SEEDS

FOR

*PRESENT SOWING.*

POST-FREE.

## CABBAGE.

| | s. | d. |
|---|---|---|
| Sutton's Flower of Spring .. .. per packet | 2 | 6 |
| Wheeler's Imperial .. .. per ounce | 0 | 8 |
| Ellam's Early Dwarf .. .. „ | 1 | 0 |

## ONION.

| | s. | d. |
|---|---|---|
| Giant Rocca .. .. .. per ounce | 1 | 0 |
| Sutton's Giant Blood-Red Rocca .. „ | 1 | 6 |
| The Queen .. .. .. per packet | 1 | 0 |
| Globe Tripoli .. .. .. per ounce | 1 | 0 |

## LETTUCE.

| | s. | d. |
|---|---|---|
| Sutton's Improved Black-seeded Bath Cos, per oz. | 1 | 6 |
| London Hardy White Cos. .. .. .. „ | 1 | 6 |
| Stanstead Park Cabbage .. .. .. „ | 1 | 6 |
| Hammersmith Hardy Green Cabbage .. „ | 1 | 0 |

*Prices and full particulars of other Seeds for present sowing may be had, gratis and post-free, on application.*

Sutton & Sons

Seedsmen by Royal Warrants to H.M the Queen and H.R.H. the Prince of Wales,
READING.





CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by Parcel Post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.



# DANIELS'



## DEFIANCE CABBAGE.

GIANT EARLY MARROW.

*The Best Early Cabbage for General Use.*

1s. per Packet, POST-FREE;
7s. 6d. per pound; 4s. per half-pound.

*Testimonial from* Mr. J. M. CLEMMENS, *East End, New Quay.*—"We have grown your 'Defiance' Cabbage for EIGHT YEARS with various other sorts, as a test, and always find your 'Defiance' beats all, being earlier, heavier, and of better shape and flavour."

## ONIONS FOR AUTUMN SOWING.

DANIELS' GOLDEN ROCCA, per packet, 1s. 6d.
DANIELS' GIANT ROCCA, 1s. per ounce, 6s. per pound.

*Priced Descriptive LIST of all kinds of Seeds for present sowing, gratis and post-free to all applicants.*

DANIELS BROS.,
SEED GROWERS AND MERCHANTS,
NORWICH.





THE

# Gardeners' Chronicle.

*SATURDAY, JULY* 18, 1885.


## BROUGHAM HALL.

HENRY BROUGHAM, owner of this ancient Hall, the home of his ancestors before the Conquest, died at Cannes in 1868, when the title he had won as Lord Chancellor of England, and earned by his services in politics and literature, passed to his brother, the present owner. According to Debrett's *Peerage* the venerable lord was born in 1795. The old house occupies a steep ledge, easy of access in the rear, precipitous and exceedingly picturesque in front. The Saxon Broughams chose this site for their manor-house hundreds of years before the building of Brougham Castle, whose ruins, a few fields distant, may remind us that Westmoreland now needs no fortresses, and the lord of the manor no embattled gateways nor deep ditches before his door.

The scenery is magnificent, embracing distant views of the Lake Country and its several heights, and the Valley of the Lowther, while the pretty village of Eamond lies immediately below the windows, and not far distant are the castle, town, and beacon of Penrith, and the British mound known as King Arthur's Round Table, which all tourists visit. The entrance to the park and grounds of Lowther Castle is on the high road, near the Brougham gates. Occupying, as the Hall does, high ground amongst trees, its occasional name of Bird's Nest would seem to be appropriate, even if the property had not been owned during two generations by a family named Bird.

The Hall is an extensive building surrounded by high walls, venerable from age and Ivy. Two courts are enclosed within these walls, the doors of the outer one opening on the approach road, which reaches the house by an avenue of fine Oaks. One-third of a mile from the door, across the path, the rapacious Vipont, the Norman, erected Brougham Castle, and here the ruins of that ambitious building are now seen. Under these circumstances the Hall doors were made of solid Oak, 6 inches thick. The original doors of the thirteenth century, studded with nails, still remain, and no one could pass them without observing their strength, the enormous armorial knocker in front, and the round arch of the embattled gateway which they close. Within is the outer court, with its range of buildings. The house itself has been in great part rebuilt and renovated, but it is still remarkable for Oak carvings, tapestry, stamped leather and ancient decorations, and for a fine collection of armour. Some years since the Crusader, Udard de Broham, resting in peace in the chancel of Brougham Church, cross-legged in the usual attitude of a Crusader, with his cross-handled sword, and the talisman which he had brought home from the Holy Land, by his side (*Archæological Journal*, 1847), was disinterred, and the "prick spur" taken from his heel. It is now here in the armoury. The incident is mentioned as affording a glimpse of history such as adds to the interest of the place.

To have held an estate at the Conquest and

to own it still is an honourable distinction—the reward of much virtue and persistency. But the twenty-four Lords of Brougham—for that is the exact number according to Sir B. Burke—have done more than rule the roost at home, since they have served their country in war or peace, according to the needs of each passing century. Nor have they escaped the vicissitudes which are frequent in great families. After submitting to the Conqueror they held their land by the tenure of drengage, a military service. But King William gave Robert de Vipont, one of his barons, such oppressive rights of reigning over the manor of Brougham that Gilbert de Brougham, in the reign of John, relinquished one-third of his estate to Vipont on condition of holding the remainder free. The Castle was built by this great Westmoreland Lord Vipont, on land which he had thus acquired, the older family having long resided in the ancient manor-house now called Brougham Hall.

The Castle stands close to the Roman station of Brocavam, which can still be traced by its fosse, and which Agricola founded, A.D. 79, by the side of the military road to Carlisle. Here he fixed one of his camps, and here, after a thousand years, Vipont built his Castle, and here, five or six hundred years later, King James, on one of his journeys from Scotland to London, slept in the Castle, which had been at that time much improved; and here, in the adjoining Hall, in 1860, Lord Brougham wrote his *British Constitution*, and its sonorous dedication to the Queen. It is a book, he says, which "professes to record facts, institute comparisons, draw conclusions, and expound principles, often too little considered in this country by those who enjoy the inestimable blessings of our political system."

One of the lessons to be read in connection with the history of Brougham Hall is, that England has grown like her Oaks, slowly, and that social progress, like the growth of trees, is always comparatively slow. But, to complete the narrative, about the year 1659 the Castle fell into neglect till at length its materials were sold, including stone, timber, lead, and wainscoting. Reverting to the manor-house, it only just escaped permanent alienation, when, in 1607, Thomas Brougham sold it to a Mr. Bird. In 1680, however, John Brougham, of Scales Hall, Cumberland, repurchased the estate, and entailed it for his nephew, from whom it passed in direct succession to the great man for whose sake it has now become an object of interest to his country, much visited by tourists. *H.*

# New Garden Plants.

### GOVENIA SULPHUREA, *n. sp.**

THIS is a curious Govenia. The bulbs appear to be of the shape of Onions, according to a sketch kindly sent me by Mr. Harry Veitch. Leaves unusually narrow, the narrowest in the genus as it would appear, since they scarcely attain 2 inches in breadth. The median rib is of the colour of the juice of the fruits of Sambucus nigra. Flowers rather large, equalling those of Govenia Andrieuxii. Sepals light sulphur-coloured. Petals white on the disc, sulphur on the margin, with numerous transverse broken purple lines. The lip is white, with some dark brown spots at the apex. Column white, with numerous brown spots on the fovea. I had this plant from Messrs. Veitch. It is believed to come from Paraguay, being one of Mr. Saint Leger's discoveries. *H. G. Rchb. f.*

### ZYGOPETALUM LAMINATUM, *n. sp.**

A small-flowered Kefersteinia. Leaves rather narrow. Sepals and petals light yellow. Lip white, quite new in its affinity for its exceedingly large nearly totally free laminæ at the base, white with numerous purple spots. Column very plump, three-lobed on each side, apiculate at the top, the last inferior lobe much angled in middle of the column, yellowish with green spots. I have, however, not much belief in the constancy of this lobing. I had this botanical curiosity last and this year from my excellent correspondent, Mr. J. Day, who informs me he saw it named as Zygopetalum forcipatum in a celebrated emporium. As to myself, I had this [latter?] plant only from Messrs. Shuttleworth & Carder, and it is widely distinct in its lip, column, and colour. *H. G. Rchb. f.*

### ODONTOGLOSSUM MACROSPILUM, *hybr.* (?) *nat.*

This has a broad triangular, cordate apiculate or acute denticulate lip with numerous lateral keels, a central one looking forward, the lateral ones terminating in one or several bristles. Sepals and petals cuneate, lanceolate-acute in the way of those of Odontoglossum odoratum, with deep blotches of dark cinnamon; light sulphur in the original from Mr. Vuylsteke's—white, with light mauve, in Mr. Day's plant, which we may call C. albidum. The wings of the column are denticulate, entire or lacerate. I learn some Orchidists are of opinion that I regard all those doubtful plants as hybrids, but we know just nothing about it, and I quite agree with those who think them partly varieties. Here would be a fine area where the gardeners might really help science. Help us for thousands of seedlings. *H. G. Rchb. f.*

### EPIDENDRUM PUNCTULATUM, *n. sp.*†

This is very near Epidendrum amabile, Rchb. f. It is distinct in the presence of a sessile ovate acute midlacinia, and in the side laciniæ of the lip being square. There is a slender panicle with stellate flowers. Sepals and tepals lanceolate acute, brown, green outside. Lip trifid, sulphur-coloured, with minute brown point-like spots. Mid-nerves incrassate. Column brown and green; border of anther-bed white, with brown spots. Plant nearlyas in Epidendrum vitellinum. Of Mexican origin, according to Messrs. J. Veitch & Sons, who kindly forwarded it. *H. G. Rchb. f.*

### MILTONIA SPECTABILIS (*Lindl.*) VAR. ASPERSA, *n. var.*

A very interesting variety. Sepals and petals cream coloured, partly washed with white mauve-lilac. Keel of lip unusually developed, colour of lip light mauve-lilac. Wings of column lobed, and projecting in an angular way, which looks very uncommon.

I have deliberated in vain as to whether it could be conjectured a mule. There is no species whose features it partly has.

Major Lendy, Sunbury House, Sunbury-on-Thames, kindly sent me three flowers, all of which proved identical. *H. G. Rchb. f.*

### THUNIA MARSHALLIANA IONOPHLEBIA, *n. var.*

Mr. W. Bull kindly sends me a variety with sulphur-coloured disc and crest of lip, and in erose veins to the apex, when the disc is more orange, and there are only such veins at base in the original plant. *H. G. Rchb. f.*

### CYPRIPEDIUM GODEFROYÆ (*Godif. Leb.*) VAR. HEMIXANTHINA.

A curious variety with sulphur-ochroleucous sepals; kindly sent by J. Day. *H. G. Rchb. f.*

PINCE'S BLACK MUSCAT GRAPE.—Few gardeners grow and finish this rather difficult variety better than Mr. Foot, at Clowance, Camborne. Last year the bunches were nigh perfection, and this season the crop promises well. *W. N.*

* *Govenia sulphurea*, n. sp.—"Pseudobulbosæ phaffornæ," foliis cuneato lanceolatis acuminatis angustis duos pollices latis; racemo pluriflore; bracteis amplis, ovaria pedicellata non æquantibus; sepalo unguis cuneato-lanceolato acuto; sepalis lateralibus paulo latioribus, deflexis; tepalis latioribus cuneato obtusis acutis, labello cordato oblongo obtuso acuto, basi bipli-cato; columna basi producta, trigona, curva, apice utrinque antrorsum obtusangula; antheræ mucrone subulato. *H. G. Rchb. f.*

* *Zygopetalum Kefersteinia*) *laminatum*, n. sp.—Foliis lineari-lanceolatis; pedunculo umbroso; sepalis tepalisque ligulatis apiculatis; labello oblongo antice crispulo-denticulato; lamella baseos pro maxima parte liberas prope dimidium labelli æquante, antice paulo medio fissa; columna medio obtusangula carina sub fovea obtusata. *H. G. Rchb. f.*

† *Epidendrum punctulatum*, n. sp.—Affinis Epidendro amabili, Rchb. f. Labelli laciniis lateralibus quadratis, lacinia mediana sessile ovata acuta, venis medianis incrassatis; androclinii margine integro. Panicula "Planta Epidendri vitellini." Mexico. *H. G. Rchb. f.*

## CUCURBITS IN THE WATER-LILY HOUSE AT KEW.

LAST year, after the new arrangements for heating and other improvements were effected, convenience was made for an extensive collection of climbers all round the house. This was composed chiefly of members of the Convolvulus order, but this season the experiment has been made with Cucurbits on rather a different principle, that at present gives ample promise of success. This is the more encouraging, seeing that collections not merely of Gourds but of Cucurbits in general, the public at large have very little opportunity of seeing.

They are planted out on a bank of turves occupying the narrow shelf surrounding the house—a shelf too narrow in itself to allow of a proper arrangement of pot plants of any sort. This bank of soil is covered with a variety of trailing fine-foliage plants, and occasions no unsightliness. Prominent amongst these may be noticed Pellionia Daveuana, Zebrina pendula, and Panicum variegatum, dotted about with such plants as Cuphea Commersoni, Impatiens episcopi, Hemigraphis colorata, Episcia chontalensis, and Chirita Moonii, with its enormous pale violet flowers.

The Cucurbits themselves are trained up the side and along the roof, and afford endless variation for combinations to give effect, or for the purposes of study, not only in the size, shape, and colour of the fruit, but the size or conspicuousness of the flowers, together with the remarkable diversity in the leaves.

Prominent among those in fruit is an East Indian species, Cucumis utillissimus, seedlings of which have produced green and almost white fruits. These are cylindrical, and notwithstanding their similarity to those of Cucumis sativus, prove of immense interest to visitors, especially the white fruit, which is over 2 feet in length. Lagenaria gigantea is doubtless a variety of the common Bottle Gourd, L. vulgaris, a variable form, like other long-cultivated species. Fruit hangs in a prominent position over the pathway, measuring about 1 foot long and 9 inches across the bottom of the bottle, which corresponds to the apex of the fruit. The enormous size of the cordate leaves is another striking feature of this Gourd. Various species of the Snake Gourd are making rapid progress, and the slender twisted fruits are more or less variegated and striped with deep green and grey.

The finely fringed white flower is a character common to the thirty known species, but the value or economic importance of this common inheritance in the life history of the plant it would be difficult to conjecture. The lower leaves of Trichosanthes palmata are reniform, the upper also small, deep green, palmately five to seven lobed, and very effective for variety. About five species are represented in the collection. Considering it as a mere variety of the common Cucumber, Cucumis sativus sikkimensis is a most remarkable and interesting form. The fruits are cylindrical, deep bronzy green, slightly tuberculated, and when mature become brownish-orange, most attractively reticulated with yellow. There is an excellent figure of it in the *Botanical Magazine*, t. 6026. A small, as yet unnamed Gourd from Natal is interesting on account of its small Ivy-like leaves. They are deep green and shallowly five-lobed or angled, constituting a remarkable counterfeit for Ivy. The fruit is said to be small and beautifully coloured. Another unnamed Gourd now finely in fruit proves to be Citrullus vulgaris. The spherical fruits are deep green and most attractively blotched and scrolled in regular lines, with a pale green almost white colour. This highly attractive and ornamental Gourd is readily distinguishable from its congener, C. colocynthis, by the larger size both of its fruit and foliage. The former is edible, and the latter is extensively cultivated for medicinal purposes. Several species of Luffa are rapidly passing into fruit, and amongst these L. cylindrica is the most forward. The fruit is cylindrical, deep green, and variegated with small grey tubercles and short ridges in regular lines, corresponding to the midribs and lines of union of the carpels. They are known as Towel Gourds, from the fact that the vascular network of the fruits when removed from the pulp is of a spongy character and used for towels, for straining Palm wine and other economical purposes. Luffa sphærica of Harvey and Sonder's *Flora Capensis*, vol. ii., 490, is a Sphærosicyos. The authors had not seen the female plant at the publication of that volume.

On the other hand a plant under the name of Sphærosicyos sp. from West Africa is evidently a

Luffa from the monœcious flowers, cylindrical fruit, strikingly striped with dark green along its whole length and variegated with oblong grey markings. Luffa velans is conspicuous for its large shallowly five-lobed leaves and the enormous size of its bright yellow flowers. An unnamed species alongside of it has equally large flowers and a long slender fruit. A species of Sicana with deep green five to nine lobed leaves is no doubt S. odorifera, a plant well meriting a place amongst the finer leaved sorts. The fruit will be anxiously waited for and noted. It is figured by Naudin in the *Annales des Sciences*, ser. 4, xvii., 180, t. 8. An unnamed Cucurbit from New Guinea is notable on account of its small shortly oblong greenish-white fruit, which changes on arriving at maturity to a golden yellow. Alongside of this is a large rambling plant of Momordica involucrata, a South African species with five-lobed leaves resembling a deeply cut Vine. The flowers are creamy-white, with a large central dark blotch, abundantly produced and forcibly reminding one of Hibiscus trionum or Turnera trioniflora. More interesting is M. Charantia, an East Indian species with equally fine leaves and yellow flowers. The fruit is spindle-shaped, deep green, and densely covered with irregular sized projecting tubercles, that give it a highly curious and characteristic appearance. On arriving at maturity the green changes to an orange-yellow, and the fruit ultimately bursts into valves, exposing the seeds covered with a fleshy red aril. The small deeply five to seven lobed, almost digitate leaves of Cephalandra palmata are noteworthy. The plant is grown under the name of Coccinia palmata, also synonymous with Momordica palmata, and is a native of South Africa, near Port Natal. Benincasa hispida, figured in Rheede's *Hortus Malabaricus*, viii., t. 3, bears large hispidly hairy, edible fruit, but is not yet in flower. Several varieties of Cucumis Melo are making rapid progress, amongst which may be noticed C. M. odoratissima with ellipsoid pale green fruit, maculated with darker spots, and another form named C. M. flexuosa, the fruit of which is long, slender, twisted, and striate with wavy lines, rendering it extremely curious and interesting.

Probably the most remarkable Cucurbit in Kew is Acanthosicyos horrida. It is to be regretted that the conditions of its successful cultivation have not yet been exactly hit upon, so that it might be placed with the collection. The leaves are reduced to small bract-like organs, with two formidable looking spines at the base, one on each side. It is a native of the arid regions of Dammara Land and Angola, and is a fit companion for Welwitschia mirabilis. With this exception, all the above, besides some as yet unnamed species, are making rapid progress in the Lily-house interspersed with Ipomœa paniculata, I. velutina, I. rubro-cœrulea, Argyreia Hookerii, Allamanda Schottii var. Hendersoni, Dipladenia amabilis, and other twiners in full flower. *F.*

## ORCHIDS AT HOME.

THE natural order of Orchidaceæ, the handsome and grotesque flowers of which are so fascinating to the gardener and botanist, comprises over 4000 species, of which about two hundred are native to British Guiana.

They are found everywhere, except in the dense forests and on the coasts; a moderate amount of light, plenty of moisture, and protection from strong winds being necessary to their good condition, and free flowering. They vary in size, from the Pleurothallis of 1 inch to the climbing Vanilla, which mounts above the forest trees to open its flowers in the bright sunlight. The greater number are epiphytes. These epiphytes flourish on the banks of rivers and creeks, inside the fringe of bushes which usually lines them to the water's edge. The ordinary passenger sees but few, but the collector pushes his bateau through the bushes, often finding some tree covered with Orchids. Zygopetalum rostratum generally grows in such a position, its large white flowers opening freely in the diffused light.

About 15 miles up the Hobaboe creek is a fringe of trees, bordered on one side by the creek, and on the other by a park-like savannah, the bushes on either side being almost impenetrable. Here, in looking for a wounded parrot, I came upon quite a family of Zygopetalum in full flower, decorating the rather thin tree trunks very prettily. In the same creek, above the lock, when the savannah is covered with water, and the people in the canals complain of floods, the trees are decorated with hundreds of Brassavola angustata, and Epidendrum nocturnum, their pretty flowers making up in numbers what they want in individual beauty. Below the lock grows the Oncidium altissimum, one of our largest epiphytes, perfuming the air with hundreds of flowers, which grow on long stems, often 12 feet high. A large plant is a magnificent object; 4 or 5 feet through, with leaves 1 yard long, and six or more flowering stems: it can scarcely be equalled among Orchids. The savannahs are bordered with belts of Eta Palms; and below the parasol of leaves, among the old leaf-sheaths, is seen something waving in the wind like tassels of broad-leaved grass. If it is the wet season the bateau is brought as near as possible by poling, or the men get out and haul it through the dense razor-grass, at the risk of cutting their fingers and legs. Nearing the Palm you see that the grassy leaves belong to Catasetum longifolium, and the next business is to get it. One of the boatmen climbs up and attempts to pull out a plant, perhaps breaking a few bulbs; or coming down with a run, covered with ants; or frightened at a lizard or hairy spider. There is nothing left but to cut down the tree, which you must do standing in water up to your knees. Presently you hear a crack, and with splash, splash, you get out of the way of the falling giant, which comes down with a great crash, throwing the splashes in every direction. All round the Palms you see the water covered with ants; large brown fellows which nip pretty hard, and perhaps a dozen hairy spiders and a wood slave. After a good deal of trouble and a few bites you get the Orchid, and find a bunch of beautiful flowers, the colour almost unique, being a bright orange.

On the tree branches overhanging the Hyama creek the Stanhopea eburnea hangs its magnificent waxy flowers, together with Brassias, Gongoras, and thousands of small species.

At the front of the sand hills, on the low bushes, may be seen plenty of Epidendrums, Maxillarias, and other inconspicuous Orchids, but two or three miles aback, where visitors rarely go, a very good collection may be made. One of the best is Scuticaria Steelii, with long pendulous, whip-like leaves and fine flowers richly perfumed. Near the ground, and sometimes on the sand, Sobralia sessilis opens its rosy flowers in the morning, but unfortunately they last but a few hours. Its stems, like small Bamboos, with leaves at the top, may cause it to be often overlooked. If fortunate, the collector may find Paphinia cristata, with crimson barred, pendulous flowers; and the little gem, Burlingtonia candida, with delicate white and yellow flowers perfumed like Violets. Here I have found what is perhaps the smallest native Orchid, a species of Aëranthus, without leaves, the whole plant consisting of a few aërial roots, and a spike of flowers 1 inch high.

In sand, or on rocks in the interior, various species come to perfection, in fact many epiphytes grow well in either situation, but Cyrtopodium Andersoni, our finest sand Orchid, appears never to grow on trees. It has very long bulbs lined with Palm-like leaves, and a large panicle of bright yellow flowers, on a flower-stem 6 feet high. Where charcoal has been burnt, the banks of the pits, which look like newly opened graves, are covered with Catasetum discolor flowers, like green or yellow Quaker bonnets.

Under a silk-cotton tree at Soesdyk grows a terrestrial species with white spots on the leaves (Spiranthes); its flowers are, however, not very conspicuous. Among the cake of decomposing leaves in the forest, among Voyrias, I have found the singular Wullschlegelia aphylla, a leafless root parasite with a few almost colourless flowers.

On the savannahs, where the razor-grass is not too thick, may be found the Habenaria macrocera (something like the English butterfly Orchis), its whitish flowers having spurs 6 inches long. But the queen of ground Orchids is Cleistes rosea. It is about 3 feet high, with a leafy stem, and two or three rosy lipped flowers on the top. The park-like savannah in which they grow reminded me of an English meadow as the thin wiry grass allowed myriads of Utricularias, Sauvagesias, Droseras, Burmannias, and other pretty low flowering plants to grow to perfection.

Some of the epiphytal Orchids are common on the Calabash trees surrounding the huts on the banks of rivers, and even the canals, near town. The crimson-flowered Rodriguezia secunda, Notylia albida with pendulous spikes of greenish-white flowers, and Ornithocephalus gladiatus, a pretty fan-like plant, 2 or 3 inches high, with little bird-like white flowers, are found almost everywhere. Even the Moca-Moca (Montrichardia arborescens) has its especial epiphyte in the graceful Ionopsis utricularioides. *J. R., Demerara.*

## DOUBLE AURICULAS.

WHEN and with whom the earliest of our double-flowered Auriculas originated it would be perhaps difficult to say. For years past I have grown the old double black and the old double yellow, known also under the names of Othello and Yellow Prince respectively, but I am unable to determine how long they have been in cultivation. Report states there are two double black varieties, which is not improbable, but I am acquainted with but one only. The old double black is not a robust-growing form, and it requires good culture, but when well done throwing up from its healthy leaves a strong flower-stem, and a good truss of flowers: it is very pretty. The old double yellow is of a much stronger constitution, and throws up (in the case of a good plant) several flower-stems. The most vigorous produce several flowers of a clear golden colour, and a white centre, but they are never so fully double as the double black form. It is very sweet and attractive, and well worth growing for cutting from. During the spring I received from the North of Ireland a double yellow of a different character, the flowers about the same size as the other, paler in colour, and with the petals rounded at the edges instead of being serrated, as in the case of the older type. I like it very much, and hope to bloom it well next spring.

Occasionally a double variety will come among the seedlings raised from the seed of ordinary alpine Auriculas. A few years ago Mr. Thomas Hewitt, then of Solihul, exhibited at one of the spring shows at Birmingham a seedling double dark, of fine colour and proportions, but I fear he lost it. A correspondent in Scotland was equally fortunate in raising a dark purple double variety of great beauty, which I hope has not suffered the same fate as Mr. Hewitt's flower.

My own collection of double Auriculas comprises some dozen and a half varieties. They have been collected in various parts of the Continent. They vary in character, colour and size of the flowers, but they are full of interest, and when in good condition, unusual, novel, and attractive, and find plenty of admirers. I do not for a moment presume to put them on a level with our finest green, grey, white-edged, and self varieties; but there is plenty of room in this world for them, and a large number of persons who see much that is beautiful in them. They are later in flowering than the ordinary show Auricula, and that is why I have been unable to produce any in good conditiou at our annual Auricula show in London. They are all in pots, but I find it necessary to give them a very generous soil; in all other respects they are treated just as the show Auriculas.

One that finds most favour is a large primrose-coloured variety, named Delicata; it is a strong grower, and produces fine large full flowers of great size, on strong flower-stems; it is the largest flowered sort I have. Purpurea is large, full, handsome, of a charming tint of pale purple, the flowers produced in fine trusses, and highly attractive. Both the foregoing have received First-class Certificates of Merit. Violacea I was able to show at the last Auricula meeting at South Kensington; it is of a very pleasing shade of violet, suffused with deeper tints. It is very pretty, and some one at South Kensington, as I thought, happily described it as representing a large double Violet. Cleopatra is a very distinct sort, the flowers maroon, dashed with purple, large, full, and very double; a strong grower, producing a fine truss. One named Hercules is the *beau ideal* of a double Auricula; the flowers are so full that it appears difficult to add another petal without spoiling their symmetry. It is difficult to describe it, for there is a mixture of purple, lilac, salmon, and buff in the blossom. It is a good grower, and I am very proud of it. Hercules, purpurea, and delicata have Balsam-like flowers, so large and full are they. Pandora and Juno are smaller, fully double, and have flowers that are tinted with shades of brown and yellow. They are of close and compact growth, and very free.

The foregoing are all I have named. I have others that require another season's growth, and each season I raise a few from seed. I must mention the double white, which I obtained from the late M. Louis van

Houtte, of Ghent. It is a misnomer to term it double, for the flowers come with two or perhaps three rows of petals, but not more; the flowers are delicate creamy-white, very chaste and large. It is a good grower, and however strongly I may grow it I cannot get it of a more fully double character. But it is always admired.

There are doubtless other double Auriculas about the country: will those who possess them make known the fact through the *Chronicle*. *R. Dean.*

# Florists' Flowers.

## CARNATIONS AND PICOTEES.

THE question is frequently asked, "What are the best flowers for town gardens?" The florist would exclaim at once, and that truthfully, "The Carnation and Picotee." Those who would like to see this verified in a practical way would do well to visit the nurseries of Messrs. James Veitch & Son's, King's Road, Chelsea, where every class and section of these beautiful plants are now fully represented in bloom, planted out in beds in the open air, and treated as any other hardy plants—not in isolated specimens merely, or in clumps of a dozen or so, but large beds containing a hundred or more plants of one variety. All the best flakes and bizarres in Carnations, and the most refined delicate Picotees are cultivated to perfection, but the demand for these is not nearly so large as that for the selfs, border Carnations as they are sometimes termed; but why one class or section should be termed border kinds to the exclusion of others, it is difficult to say. Many varieties of Picotees are possessed of the most vigorous constitutions, and few things are more beautiful in the floral world than the glistening purity of the Picotee, and the rich purple or delicate rose edges. It would be tedious to enumerate even the best varieties of the florist's type, as they will be found in the reports of the exhibitions in subsequent numbers. I was careful to note the best varieties in the various colours, adapted for beds or to plant in groups in the borders. What can be more beautiful at this season than a group of a dozen or more Carnations of one variety—rose, pink, purple, scarlet, crimson, white, or yellow, planted in a herbaceous border? Pure white forms are now very numerous, but I question if any of them surpass The Bride (Hodges); the flowers are pure white, of good form, and last longer than any of the others, it has also a good pod which does not burst.

There is a very large bed of W. P. Milner, a well-known hardy and handsome variety. Virgo is a beautiful white, very pure, of medium size. Ossian blush-white, large fringed petals, very beautiful and distinct. Exquisite flowers later than any of the others, very free, and of good habit; the petals broad, forming symmetrical blooms. The best of the scarlet coloured varieties are Magnum Bonum; this has the largest and most handsome flowers, with a dwarf habit. Vivid very bright. Field Marshal also a very bright, full scarlet. Delviensis, a late blooming variety, dwarf, compact plant and bright scarlet.

Pink colours are very attractive, and this section is well represented by Celia, the best of the whole group, which forms a charming bed; the colour is rosy-pink, the flowers large, full, and well formed, Clove-scented. Corsair, pale rosy-pink, distinct and good. Gertrude Teigner, small or medium, flowers pale pink, excellent to cut for small bouquets. Ouida, bright crimson, dwarf, and abundant flowering habit.

Purple selfs were well represented by Improvement and Lady Manners. The old crimson Clove formed a very effective bed; the plants strong and vigorous although they were not planted out until March.

Yellow self, and yellow-edged Picotees form a large part, and also the most interesting part, of this fine collection. They were well described at p. 43 of vol. xxii. for last year, and still maintain their first promise of high-class quality, and the profusion of flowers produced is very remarkable. Lord Tennyson is one of the best yellow varieties this year. Duchess of Teck is a handsome yellow Picotee, well marked with crimson. Goldfinder is a vigorous and distinct yellow Picotee edged with rose. Janira grows with remarkable vigour out-of-doors and is very distinct. Emperor is very large bright yellow, with flowers freely produced. Aurea floribunda, Miss Mary Anderson, and Knaptin are all high-class yellow varieties. Belle Halliday is a distinct and handsome yellow, the form of the flower reminding one of Hodges' Bride; this is a Scotch production. John Barnet must not be omitted from the bright pink varieties; it is one of the best of them.

The season has not been particularly favourable for healthy growth. Cold days and colder nights checked their development early in the year. It has also caused the bloom to be late, although nearly all the varieties have pushed rapidly into bloom during the last few warm days. In looking over Messrs. Veitch's collection it was interesting to notice that some varieties were even more vigorous and healthy this season than they were last, amongst them being the old Clove, The Bride, W. P. Milner, Exquisite, Florence, and a few others.

## THE CAMELLIA.

At this season of the year these gorgeous plants are often exposed to neglect, owing to carelessness in watering, or, if the weather is hot, red-spider attacking the leaves. It is a good plan, if the plants are large, to place them out-of-doors, not in full exposure to sun and wind, but, on the other hand, they must not be over-shaded, else the growths will be weak. The plants would be greatly benefited by having a surface-dressing of turfy loam and peat, pressed firmly down upon the roots with the fingers—that is, if the larger roots are exposed on the surface. This is a good time, now the growth is formed and the buds set, to repot, but a hint must be given about the careful treatment of the roots; the young fibres are very brittle, and a wholesale destruction of them means a serious check to the further development of leaf and bud. I may allude to some very old plants we are now potting in our own garden. They have been placed out-of-doors, and the pots they had been growing in have become choked in the drainage. The plants were turned out, the drainage removed, a little of the spent useless soil carefully picked from amongst the roots, and the plants replaced in the pots in which they were previously growing. If the ball of roots was thickly matted, and the roots perfectly healthy, larger pots would have been necessary. Do not water at the roots for a few days after repotting, but lightly syringe the leaves twice a day. *J. Douglas.*

# NEW FLOWER MARKET, COVENT GARDEN.

ANY one acquainted with the London flower trade of twenty years ago will recognise the enormous increase that has taken place within that comparatively short period. This is not exclusively to be attributed to the increase in the number of the buyers, but is the result of the aggregation which has taken place in the ranks of the cultivators for the markets in London itself and other large towns. The supply of flowers in greater abundance, their variety, and the cheapness of their production, aided by the great skill shown by the growers in preparing plants and cut blooms for the public supply, have helped to create a trade in these beautiful productions of the garden, which it may confidently be said would have been unattainable under the old conditions of the trade. That being so the Duke of Bedford's agent saw that Covent Garden Market, at least, must be so enlarged that the accommodation afforded there should be proportionate to the trade done or likely to be done. It will doubtless supply the long-felt want for a short time, but London is far too vast a place to get nearly all its supply of plants and cut flowers from one market, be that market never so centrally placed.

The congestion of traffic, with all its attendant evils, must eventually, when broader views are entertained on this subject, give way to tyrannical necessity; and although Covent Garden will remain the head market, whence the choicest articles will be obtainable, district markets of convenient size will have to be built in many other districts of London. By that means the grower in the country will be brought into contact with the actual consumers, who will be enabled, to a greater extent than now, to do their own marketing, as in Continental towns, instead of being heavily mulcted by every species of middlemen; and the former will obtain better prices for his productions.

The handsome addition to the existing Flower Market, with its chief entrance in Wellington Street—views of which we give in this issue (figs. 14, 15, 16), is built on the site of houses formerly standing on the north side of Tavistock Street. The buildings are most substantially built with red brick, of excellent quality, with quoins, arches, and copings of white stone; and while being mainly constructed of strong materials, have a sufficiency of light admitted by lantern roofs, and windows of a large size at the sides. A main pathway divides the building longitudinally into two main divisions, these being again subdivided by paths of lesser width. Alongside these stand the wrought-iron staging, in three tiers, on which the growers display their wares, and that are indicated on the ground plan of the building, fig. 15.

Underneath the market is ample cellarage for the storing of fruit, &c., which is approached by means of an inclined path, by the side of the building on the Tavistock Street front, and by stairs in Wellington Street, and in the general market. Further westwards an open flower market will be held on a considerable piece of ground that will be specially reserved for that purpose. Altogether this additional accommodation in Covent Garden Market will prove a great boon to the frequenters, be they buyers or sellers, and the new structure will rank among the most handsome of our public markets.

We understand that the Duke proposes to effect other improvements in the market, so as to increase the facilities for business in all branches of the trade.

The works are being carried out by Messrs. Cubitt & Co., under the direction of Mr. John R. Bourne, the Duke's steward; and for the plans whence our figures were taken we are indebted to the courtesy of Mr. Rogers, the architect.

# REMARKS ON THE FRUIT CROP, 1885.

[*For Tabular Summary, see p. 43.*]

## SCOTLAND.

ABERDEEN.—Fruit trees and bushes of all sorts had an extra abundant blossom, but owing to the cold weather in the end of April and beginning of May Plums, Pears, and Cherries set very thinly, and are, with one or two exceptions, a poor crop. Apples are in general a very abundant crop, but very late; small fruits also suffered from the cold weather: in low-lying places they are a very poor crop, while in others they are a good crop. Strawberries promise to be a heavy crop. *John Forrest, Haddo.*

BANFF.—All kinds of hardy fruit, with the exception of Plums, bear an abundant crop here. On walls Plums are the lightest crop we have had for a number of years. Standards are better, still numbers of them have gone back since setting. Apricots and Peaches are both good. Fruit clean. Trees healthy and vigorous. Cherries are plentiful and clear of insects. All kinds of bush fruit are in great abundance, especially Currants. *J. Webster, Gordon Castle.*

FORFAR.—At the present time (July 1) the fruit prospects in the Carse are not so great as at one time anticipated. On account of the late severe and continued frosts and hailstorms a good deal of the early bloom of all kinds has been blasted. Apricots, Peaches, and Nectarines, outside, suffered severely, as well as early Pears and Cherries, but the later kinds of Pears give better promise, and Morello Cherries will be a fair crop. The earlier kinds of Gooseberries have also suffered severely, especially those in exposed situations, but later kinds are not so bad, and what they want in numbers will be partly made up by increase of size. Most of the red and black Currants we have examined give promise of an abundant crop, and what with a few refreshing showers, the first instalment of which we have had. Strawberries will be good. We think Apples will be the most prolific crop of the fruit kind this season in the Carse. We have been privileged to examine a number of the best orchards, and in most cases find them well laden with young Apples. We have also examined a number of good gardens, which give equally good promise. Through the kindness of A. Lacaille, Esq., Gourdiehill—whose orchard is the largest in the Carse, if not in Scotland—we have had opportunities of examining for ourselves, and from what we have seen feel sure that Apples will be abundant if the summer be warm, and good ripening weather occur in the autumn. Mr. Lacaille has been making great improvements in his orchard since he came into possession of it—an

improvement which waa greatly needed, as it had been allowed to run almost to waste for several years before. What with draining, planting, pruning, and manuring, he has had his hands full of it, but now Nature promises to recompense him for all his labour in her behalf. In addition to his extensive orchard of over 40 acres he has lately planted about 12 acres more, partly of small fruit, such as Gooseberries, red and black Currants, Strawberries, Raspberries, and a large number of the newer kinds of Apples not formerly grown on the estate, such as Eclinville Seedling, Lord Suffield, and the like. Of Lord Suffield he has planted 700, all looking well; and 200 Victoria Plums, which were in full bloom about the first and second week of May, when we had such heavy hailstorms, and which, nevertheless, are setting well. This Plum seems to be the best for outdoor cultivation in our northern climate, as it stands the cold well, is a free setter, and great bearer. We wish the Laird of Gourdiehill every success in his most laudable enterprise—an enterprise which greatly beautifies the world, for what is finer in spring than the Apple bloom? and which adds greatly to the food down at 32°, and blackened the Potatos a good deal near the seaside, up here they were not so far advanced, and being mostly dry weather the frost did not trouble us much although it was down at 36° on the 25th in the garden. *J. Mitchell, Carnoustie.*

Midlothian.—The season is a fortnight later than the average at this date, but crops are making good progress, and if the remainder of the season prove favourable the fruit crop promises to be the heaviest and finest we have had for the last ten years at least. Fruit trees are generally in fine health, and free from insects. All the best sorts of Apples are bearing abundantly, and there is scarcely any sort but has a fair crop upon it. Pears are a heavy crop on some trees, and light on others of the same kind, but fully an average on the whole. Plums and Cherries are similar to the Pears. Apricots have not been so fine for many years, both for crop and quality. Peaches and Nectarines are also fully an average crop, and fine clean fruit. Strawberries and all small fruits are abundant, and very fine, if the next month will only be favourable to ripen them. *M. Dunn, Dalkeith.*

## ENGLAND.—NORTHERN COUNTIES.

Durham.—Fruit crops gave indications of being heavy. Pear trees were covered with clean and healthy blooms, but the repeated late frosts caused most to drop, so there is only a scanty crop left. Apple trees fared better by being later in blooming, and have set a good crop. Gooseberries, black and red Currants all suffered, and although a fair crop remains, a great many dropped. *J. Hunter, Lambton Castle Fence Houses.*

Westmoreland.—A very promising show of bloom was completely ruined by cold weather in May. From May 7 to 19 an aggregate of 29° of frost was registered, 8° on the 8th being most. Gooseberries are a failure; Currants lost the top berries on strings; Apples seem to have been frosted when in bud. *W. A. Miller, Underley, Kirby-Lonsdale.*

Yorkshire.—Apricots are very good in some places, in other places they were partly destroyed by frost; on the whole they are good. Plums, too, suffered very much from the same cause. Currants suffered very much from frost when in bloom, but there will be a fair crop. Apples and Pears will be

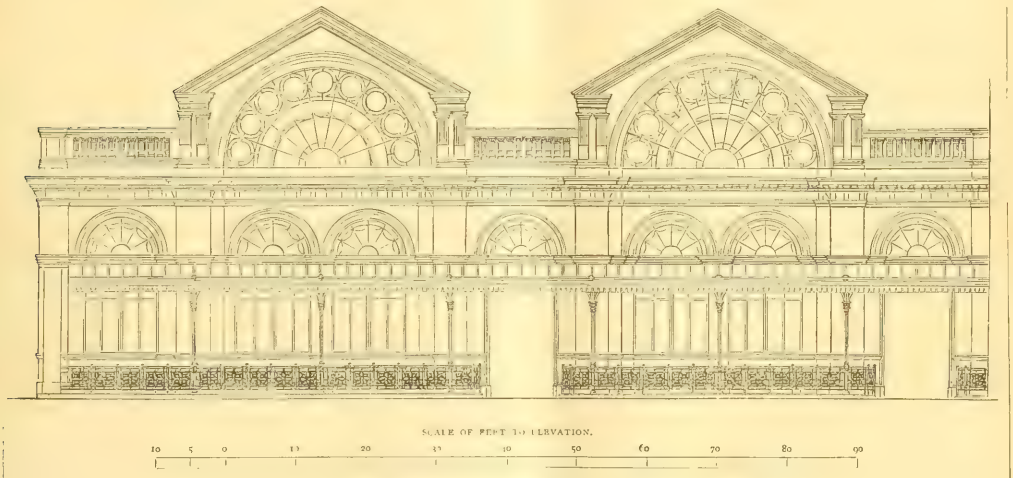



Fig. 14.—New Flower Market, Covent Garden: Elevation next Tavistock Street.

supplies of our country. We are glad, however, to be able to say that others in the Carse are "going in" heartily for the same sort of work, notably Mr. Jackson, farmer, Port Allen, and lessee of the orchard there, who has been pruning on a very extensive scale, and has had one of the most scientific men in the horticultural profession assisting him. We learn with pleasure he is likely to be rewarded for his labour, as the orchard this year is looking uncommonly well. There are others in the district who are "going in" for orchard improving, some on a larger and some on a small scale, and all are hopeful of being amply rewarded for their labour notwithstanding the fearful forebodings of some unsuccessful pomologists, who foolishly declare that fruit will not now pay the grower unless the prices are raised by legislative protection—a dream which is not likely to be realised. *A Correspondent in the Carse o' Gowrie.*

—— Apples have set a most abundant crop. Pears planted in or about 1855 did not recover from the effects of 1880-81, a few young trees we have now set well, but all late. Currants of all sorts are most abundant. Rasps only in flower and not set yet, but will be good. The same may be said of Strawberries. We had frost every now and again up to June 8, when it was

—— Apricots are really a good crop, and if the season is in their favour there will be a good return. Plums, none, through rough weather when in bloom; ditto Cherries; rough weather made them set thinly. Peaches and Nectarines none outside. Apples seem to have set splendidly, but I am afraid they are very late. Pears a meagre crop. Small fruits and Strawberries seem about the usual weight. Nuts, none. *C. Johnstone, Dalhousie Castle Gardens, Lasswade.*

Wigton.—Plums flowered abundantly but set irregularly, and on the whole the crop will be light. Cherries are a full crop. Peaches and Nectarines are not much grown out-of-doors, but where grown the leaves are much blistered; a fair amount of fruit has set. Of Apples I do not remember ever to have seen a more abundant set than there is this year. The foliage is unusually fine. Pears flowered freely. The crop is irregular, in some places moderate, but generally thinly set. Small fruits, generally a large crop. Gooseberries in some places indifferent, in others loaded with fruit. The fine summer and autumn of last year ripened the wood of all sorts of fruit trees thoroughly, consequently the fine bloom. *A. Fowler, Castle Kennedy, Stranraer.*

a large crop; the trees are in fine foliage, and the fruit look healthy. *W. Culverwell, Thorpe Perrow.*

—— With the exception of the Currant bushes all the fruit trees here are remarkably clean. Peaches, Nectarines, and Apricots are promising well for a good crop of fine fruit. Plums and Gooseberries are the worst crops; both suffered by the 7° of frost we had on May 7. *Thomas Jones, Ribston Hall, Wetherby.*

Lancashire.—We had an extraordinary promise of fruit in the spring, bloom was abundant and good. The protracted cold and sharp frost, however, proved too much for the Pears and Plums, only a sprinkling escaping. Black Currants and early Strawberries were much injured also. I expected an extraordinary crop of Apples, but so many have dropped after apparently setting that I do not now anticipate anything over an average crop. The trees were attacked with Aphis during the dry weather of last month, which undoubtedly caused much injury. *W. B. Upjohn, Worsley Hall, Manchester.*

—— On the whole this is a fruitful year, but things are backward. It was the 26th of this month before I could see colour in a single Strawberry on a south border. There are not many Apricots grown,

but I have seen more fruit of these and Plums than for four years. Damsons none. Peaches and Nectarines set well, and where timely attention has been given to arrest the progress of the fly there are good crops. In a neighbouring garden I have seen several varieties of Pears on south wall so well furnished with fruit that a dozen could be covered with the hand. Many of our large orchard trees are almost destitute of fruit, a circumstance we attribute to the north-west wind which blew with force and bitterness during nearly the whole of May. At present there is a good crop of Apples on all trees, but many may drop. Small fruits, excepting perhaps black Currants, are as good crops as any one could wish. Gooseberries in these gardens have a tremendous crop. *W. Roberts, Cuerden Hall, Preston.*

## MIDLAND COUNTIES.

Bucks.—Peaches and Nectarines look remarkably well, very clean and healthy. Pears are a very fine crop, trees look well; we have thinned once and shall have to thin again. Apples bloomed beautifully, but set badly, and a good many have dropped off. Strawberries are a wonderful crop. Morello Cherries are very fine and much cleaner than usual. In orchards about here a good crop generally of sweet Cherries. *T. Bailey, Shardiloes, Amersham.*

—— This is a very fruitful season hereabouts. Apricots, Peaches, Nectarines, and Plums are very plentiful and good; Apples, Pears, and Cherries very abundant; Raspberries and Strawberries likewise. The Gooseberry, black Currant, and Walnut crops in certain places sustained considerable damage by frost, are therefore less abundant. I fear insect pests will be very troublesome, they are already very abundant, and will, under the influence of real summer weather, such as we are now having, so rapidly increase and spread that it will take up much time to keep the number within reasonable bounds. *G. T. Miles, Wycombe Abbey.*

Hertfordshire.—The fruit crops in this and surrounding neighbourhood are generally good, Apples being the exception; owing to the severe frosts from May 8 to 12, much of the Apple blossom was killed, consequently the crop is a very partial one, and trees much infested with aphis and American blight. Pears and Cherries are generally good crops, also Plums and Damsons; Green Gages thin, except in sheltered situations; Gooseberries, Currants, and Raspberries abundant crops, and good; Filberts appear very plentiful everywhere. *R. Ruffett, Panshanger*

Berks.—Our fruit crops on the whole are very good. Some of the Apple trees are very much blistered, with very little young wood on them, which, no doubt, is owing to the spring frosts and cold east winds. I may add, we still have most unfavourable weather for both trees and fruit, as the temperature for some nights past has been down to 37° and 38°, with a very cold north-east wind. *T. Jones, Frogmore.*

Wilts.—Although the Apricot and Plum crops are light the fruit crop of 1885, taking it altogether, may be pronounced a plentiful one. The Apple crop is an abundant one, though some of the trees in our orchard, which are exposed to the north and east winds, have suffered from the effects of May frosts. Trees of the following varieties of Pears are bearing heavy crops, viz.:—Marie Louise, Glou Morceau, Chaumontel, Josephine de Malines, Beurré Rance, Ne Plus Meuris, Louise Bonne of Jersey, Passe Colmar, Van Mons Leon le Clerc, Althorp Crasanne, Bon Chrétien, Fondante, Duchesse de Mars, Easter Beurré, Jargonelle. Plums of the following varieties are fairly well cropped:—Magnum Bonum, Mitchelson's Orleans, Denyer's Victoria, Pond's Seedling, Kirke's, and a sprinkling of Green Gages. Cherries:—May Duke, Bigarreau, Cleveland, Empress Eugenie, and Governor Wood, are bearing well. *H. W. Ward, Longford Castle, Salisbury.*

Stafford.—I never saw the Apple trees so full of bloom as they were this season; however, some varieties have not set well, and are only a thin crop. The most prolific here are Cellini, Lord Suffield, Keswick, Small's Admirable, and Hawthornden. Pears were very full of bloom, but are only just an average crop. With a fine autumn they should be good in quality. Gooseberries, Raspberries, Strawberries, and black and red Currants I never saw so full of fruit as they are this season. *J. Wallis, Keele Hall Gardens, Newcastle-under-Lyne.*

Notts.—Apples, Plums, and Pears flowered in the greatest profusion. Pears generally were very conspicuous by the unusual size of the flowers, and, had the weather been favourable, fruit would have been plentiful instead of, as it now is, only partial. *Richard Carr, Welbeck Gardens, Worksop.*

Leicestershire.—A profuse display of blossom on fruit trees generally was followed by an abundant setting of fruit. Although the weather was cold in April and May no frost of sufficient severity occurred in this district to affect the fruit crops. Owing to the deficient rainfall of the preceding seventeen months, the subsoil is very dry, and it has been necessary to apply copious waterings to Apricots and Peach trees on outer walls. Morello Cherries have suffered from black-fly. *W. Ingram, Belvoir.*

## EASTERN COUNTIES.

Suffolk.—The show of blossom and the set of fruit on nearly all trees gave promise of a more than usually heavy crop, but the effects of the frosts in May are now showing themselves, as the ground is quite covered with Appples, Pears, and Cherries, more than half of which have fallen; but as regards the two first-named this is rather an advantage, as there would have been much labour and time taken up in thinning. Plums are almost a total failure, and the trees are much affected with aphis. Bush fruit is abundant; but Strawberries are deformed through the cold when the plants were in bloom. *J. Sheppard, Ipswich.*

—— Never were prospects more brilliant, but the produce will prove disappointing. Plums, Apples, and Pears, will be thin, while Peaches, Nectarines, Apricots, and Cherries, will be fairly plentiful, Gooseberries and Currants, unless where frost-bitten and bird-picked in bud, will be plentiful. Raspberries very fine, Strawberries also full crop. The Apple fruits are not only falling fast, but the trees are considerably blighted and mildewed. *D. T. Fish, Hardwicke, Bury St. Edmunds.*

Norfolk.—Crops in general very backward. Apples a wonderful show of bloom, but crops apparently thin. Strawberries, good show, but many blind; at present time a few only changing colour. The late spring frosts spoiled the crops of Currants and Gooseberries, except in a few districts; also Plums and Pears got well set before the late frosts, but a good crop left after a severe thinning. Nuts only beginning to form—apparently a good crop. Raspberries a heavy crop. *J. Forder, Hillington Hall, King's Lynn.*

Lincolnshire.—The fruit crops in this neighbourhood, as a whole, are very promising, Plums and Cherries excepted; Morello Cherries a good crop. I have never witnessed such a show of blossom on fruit trees of all kinds as we have had this spring. Apple and Pear trees were quite pictures to look upon, and in most cases have set fairly well, and we anticipate a better fruit season than we have had for several years back. *D. Lumsden, Blankney Hall, Sleaford.*

## WESTERN COUNTIES.

Cheshire.—Apricots, there is an average crop in this district. Plums are under; scarcely any Damsons. Cherries are good; Morellos plentiful. Peaches and Nectarines are bad, scarcely worth the growing. Apples will be, I think, about an average crop, but like all other fruits are very late. Pears will be a poor crop. Of small fruits, except Raspberries, there is scarcely any; Strawberries promise a fine crop, but are very late. *J. Grant, Withington Hall, Crewe.*

Worcestershire.—The garden crops generally are more satisfactory than for the past two seasons. Pears on the walls are clean, and uniformly well-coloured, even at this early date. In the case of Apples, although such a profusion of blossom, in many places only a part of the crop remains, so many have fallen, due in a great measure to the excessive heat and drought of last summer. Gooseberries are an exceedingly heavy crop, and the berries of very large size, in fact all bush fruits are a heavy and excellent crop. *W. Child.*

—— The Apple crop is not so abundant as was expected—so many fruit have dropped off, probably from weakness, resulting from an extra profusion of bloom. Pears are growing kindly, and good generally. Apricots fairly good crops, accompanied by the usual tantalising dying off of branches. Peaches and Nectarines a thin crop; much blistering of leaves, but trees are now growing out of it. Plums an indifferent crop, Pershores, Victorias, and the Shropshire Damson excepted. Cherries are a good crop; trees of both Cherries and Plums affected with aphides. Strawberry crops are enormous, consequently small in size. Bush fruits very good, although in places birds have reduced the crops by their mischievous attacks upon the buds in winter. Walnuts in abundance. *W. Crump, Madresfield Court.*

Hereford.—The fruit crop in this district is partial, low-lying gardens having suffered from the effects of the sharp frosts in May. Peaches and Nectarines are abundant and fine, and the trees are in fine condition. Some kinds of Pears will require much thinning, while many trees growing under similar conditions are fruitless or carrying very thin crops. Apricots in some places are abundant, in others the trees lost nearly all their flower-buds when the size of swan-shot. Cherries of all kinds are plentiful on walls. Orchard trees are generally thin, and the fruit is still dropping. Apples, our sheet-anchor, do not quite realise many people's expectations, and although there will, no doubt, be a good harvest, many trees being laden, there is not the all-round crop of the choicer kinds which the abundant blossom led us to anticipate. Heavy crops last year, a premature check during the intense heat last August, followed by a tardy, sluggish spring, may account for a partial set of fruit. Frost cannot be the cause, as we have not had any since the first flowers opened. Grub, as might be expected after a mild winter, is rather troublesome in some orchards. Black Currants are badly blighted. All other bush fruits, also Strawberries, are clean, plentiful, and fine. *W. Coleman, Eastnor Castle.*

Somersetshire.—Abundance of bloom on all kinds of fruit trees, but where exposed to cold winds the greater portion of the apparently well-set fruit failed to swell. Apples and Pears over plentiful on some trees, and very thin on others, a good deal evidently depending upon the time of blooming of the respective sorts. Peach trees blistered badly, but they are recovering rapidly. Strawberries suffered both from cold winds and drought, and the fruits are unusually small in consequence. Raspberries very promising. *W. Iegulden, Marston House, Frome.*

Devonshire.—There is every prospect of a good fruit season. We have had scarcely any rain for a long time to get down to the roots of fruit trees, and unless it comes very soon the drought will seriously affect the crop. Strawberries are suffering much now on our light soil, I looked through the Apple orchards to-day: both table and cider fruit are full crops. In market gardens in the neighbourhood early Plums (Rivers' Early, which is extensively grown) are very prolific and good. *D. C. Powell, Powderham Castle Gardens, Kenton.*

—— Apple and all other fruit trees were remarkable for the density and quantity of bloom on young and old trees alike, and also for the generally healthy vigorous growth they have since made. The Apple crop now promises abundantly, but Pears and Plums are decidedly deficient in fruit bearing, though they still retain their vigour of growth. Apricots, Peaches and Nectarines, too, are remarkable for vigorous, clean, healthy growth, and the fruit upon them decidedly beyond average, more especially Apricots. Other fruits are a fair crop, but likely to suffer from the dry state of the ground, the rainfall being much below average during the winter months, and up to this time. *J. Enstone, Wear, Exeter.*

## WALES.

Pembroke.—The Apple trees bloomed wonderfully well this season; but wet and stormy weather prevailing at the time, all but destroyed the crop. The varieties which withstood the weather best, and of which we have fair crops, are Royal Russet, Hawthornden, Keswick Codlin, Hanwell Souring, Rymer, Eclinville, King of Pippins, Wyken Pippin, Perry Pippin, Red Autumn Calville, Reinette du Canada, and sheltered trees of other sorts are fair, especially Cox's Orange and Blenheim Pippins. The trees on the walls are also good. Pears are bad with the exception of Josephine de Malines, which is very good. *Geo. Griffin, Slebech Park.*

## CHANNEL ISLANDS.

Jersey.—Fruit trees, as a rule, are looking healthy and well, making vigorous growth. The bloom of Apricots, Nectarines, Peaches, and Plums, suffered much during the hot weather in May, much of the

setting fruit falling off. Morello Cherries promised to be an abundant crop, but quantities of the fruit turned yellow and fell off. Strawberries are a low average, but Currants and Raspberries will be abundant. Nuts are not grown here. Medlars and Quinces will be a full crop. *C. B. Sanders, St. Saviour's.*

### SOUTHERN COUNTIES.

MIDDLESEX.—The Pear crop is especially good, nearly every variety and nearly every tree bearing a full crop. The trees are healthy and the fruit swelling freely. By far the finest crop that has been noted for many years. Apples, especially on young dwarf trees, are very abundant and good. Plums, a few leading varieties such as Victoria, Wood's Seedling, Goliath are very abundant; others a complete failure. *A. F. Barron, Royal Horticultural Society's Garden, Chiswick.*

—— Generally throughout this market orchard district the fruit prospects give the greatest satisfaction; still, there can be no doubt but that in many cases the superb bloom prospects have not been fully borne out. This is specially the case with Cherries, which, though marked in the tabulated return from here as "average," must not be assumed to be good. Really, an average Cherry crop is a very moderate one, and that is the state of the crop this year. In some gardens Gooseberries are thin, having fallen in swelling; but in many other gardens the crop is an abundant one. Currants are moderate, the bloom bunches having been thinned by frost; but no doubt the fruit sample will be good. On the whole it may be said that the present season's fruit crop will prove to be one of the best known for several years in this locality. *A. D., Bedfont.*

SURREY. — The spring of 1885 will be looked upon as the most promising one for fruit crops for many years. Owing, I think, to the late hot summer, which ripened the wood so well, every variety of fruit, and nearly every plant or bush was clothed with blooming buds and crowns, and to a great extent our hopes and prospects are realised. The frosty nights which we had the second week in May did little or no damage to the bulk of fruit trees. Gooseberries were clothed with foliage; Apples were not forward enough; Pears and Cherries were in full bloom, but, being dry, they did not suffer to the extent that was expected; but in the third week we were visited by heavy and continuous hailstorms, which cut off the Pears from the tops and exposed sides, and the leaves were riddled with the stones. The varieties that carry the best crops are, of Pears, Jersey Gratioli, Louise Bonne of Jersey, Bergamo, d'Esperen, Williams' Bon Chrétien, Huyshe's Prince of Wales, Winter Nelis, Seckle, Ne Plus Meuris, Dr. Trousseau, and Swan's Egg. Apples are good all round: the first on my list of heavy bearers are:—Duchess of Oldenberg, Lord Suffield, Dumelow's Seedling, Forge Apple, King of the Pippins, Blenheim Orange, and Yorkshire Greening. Strawberries are excellent, but quite three weeks late. Gooseberries and Currants, red and black, are even crops. Plums are scarce, except on walls, where they are plentiful and clean. Peaches, Nectarines, and Apricots are good crops, clean and free from blister. Cherries also are above the average *A. Evans, Lythe Hill, Haslemere.*

KENT.—Our whole crop in this district, with hardly a single exception, is most abundant; a few varieties of Apples, Pears, and Plums, which bore heavily last year, are thin; other varieties are carrying immense crops, and strenuous endeavours are made to secure the yield, but in my opinion, half must be left unpicked or otherwise spoiled. The foliage of everything is remarkably clear of insects and blight, particularly the Apples, which have for some years past been infested with caterpillar. *H. Cannell.*

—— The blossoming was the most abundant seen for many years, but the low temperature prevented a perfect set, and the frost in many places entirely destroyed the crop of black Currants and Plums; but, generally speaking, the crops may be described as good, and that of Pears as the most abundant for many years. The Kent Damsons are very partial, but Cob Nuts are unusually abundant. *G. Bunyard, Maidstone.*

SUSSEX.—Apple crops excellent. Apricots, Peaches, Nectarines abundant, all looking well. Pears good on the walls but thin on standards. All kinds of Currants plentiful. Gooseberries thin, principally owing to birds destroying the buds, which is becoming very general about this locality. Filberts are the heaviest crop I have seen for years. *F. Rutland, Goodwood, Sussex.*

HANTS.—Until May 8 fruit trees of all kinds looked unusually promising for abundant crops of fruit; Pears and Plums setting freely, but the 8° of frost on May 7 and 8 caused the fruit to drop, and Cherries are very much blighted and much affected with blackfly, and a poor crop with the exception of Morellos, which are good. Peaches and Nectarines where protected are carrying a good crop and trees look well. Apples a good crop but many kinds much blighted. Small fruits a good and abundant crop. *W. Smythe, Basing Park, Alton.*

—— With the exception of Plums, all fruit crops in this district are much above the average. Plums flowered profusely, but when in full blossom we had from 4° to 8° of frost every morning for a fortnight, and though they did at first seem to set well they dropped as soon as warmer weather set in. Pears have an extra heavy crop. Peaches, Nectarines, and Apricots the same, and the trees are clean and vigorous. Apples, like Plums, suffered from frost, but still there is a good crop and the trees are clean. *W. Wildsmith, Heckfield.*

## MARKET GARDENING.

(*Continued from p. 7*, vol. xxiii.)

I HAVE referred more than once in past remarks to "thick cropping;" indeed, the very fact that "foot crops" exist in market gardens by the hundreds of acres is proof of their desirability. Such crops besides are as often short of the mark as up to or over it; thus, not infrequently, stiff, stocky seedlings are planted at 10 inches apart. Practical tests have shown me that wide planting has little in itself to recommend it.

Autumn-planted Cabbage plants at 7 inches apart hearted up in the following spring splendidly, fitting tightly together, so that a dense row of hearts was the result. Cabbages, as all know, are not needed to be very large, as good medium-sized, well-hearted heads are preferred. I wish to show how economically the ground can be employed. Plants protect each other, when thickly planted, during winter, and, above all, the great advantages accruing to the ground being covered, both as regards the retention of moisture in it during dry weather, and the prevention of growth. These considerations are important, but that of thick cropping, so as to retain moisture, is during the late spring and early autumn months all-important. Besides these advantages, the practice lessens the work of hoeing immensely. Nor should it be at variance with the best system of culture, for surely to cover the ground with a green garb should be the aim of good gardening, not to permit bare places between rows like "drives" in a wood. The adage "Whoever can make two ears of corn or two blades of grass grow upon a spot of ground where only one grew before, deserves well of mankind," has more in it than appears in confirmation of my statement, supported as it is by market garden farm practices around.

As regards Cabbages, reasonably thick cropping means earlier maturity and more weight from a given piece of ground. Whilst upon this subject a contrast may well be drawn between open-air in the fields, and the more confined limits of most gardens. Full free air means "stocky" plants, early maturity, and excellence.

Here I may turn aside to refer to the ground-line conformation of kitchen gardens generally. In a far too common way "quarters" are much lower between paths and the bush or espalier fruits, which all but invariably surround them, than is needful. When forming gardens of this kind there can be no reason why walks may not be lowered for the benefit of the crops upon the quarters—the soil removed being applied to raising the latter, and levelled down at the sides of the walks whereon such fruits are grown so as to, in a word, elevate the actual vegetable ground. Again, the old system of forming alleys between crops has a similar advantage, giving crops by elevation a far more favourable aspect. Moreover it is beneficial to root-crops, such as Beet, Carrots, &c., so to grow them, as even during dry weather they benefit by being forced to push their tap-roots downward in search of moisture.

If, however, one kind of vegetable more than another will succeed well thickly planted, or upon what I may call mound-beds, it is the Cabbage. The plants like exposure and firm roothold. To the latter I can testify from a fact which has come to my knowledge of a perfect Cabbage having been grown near the apex of a wall, in precisely the same manner as Wallflowers often grow. After all the mound-shaped bed is but an imitation of beds formed in the process of ploughing upon all plough-cultivated lands. It is the usual intention of growers to have as abundant a crop of each as is possible from a given space of ground. I maintain emphatically that the old rule of thumb practice, of setting out Cabbage plants wide apart, letting them struggle on upon a bare surrounding throughout the winter, only to give an ordinary heart and superabundance of gross useless outer leaves, and when cut to still continue the stumps for the purpose of a meagre supply of offshoots, is not one likely to satisfy such wishes—this, even apart from the incidental work of hoeing ground, impoverishment, &c., before referred to.

Clubbing is as great, or greater, an enemy to the market garden grower's crops than to those of private growers. Many expedients are tried for its cure, but with little result. Gas-lime seems to have greatest value. Large quantities are annually carted from gas companies' works for this purpose. Slight surfacings are given before ploughing up the ground, and some growers even give surfacings immediately before planting. Artificial manures are often applied to these particular crops with great advantage. Fish manures in any form give marked results, and are known to give more lasting effect than any others. Soot is used very generally. It is applied just at the time the plants are in active growth; and whilst it may have the power of limiting injury by clubbing, it certainly invariably gives the crop when applied a fillip in the matter of growth, and causes it to become of a deep green colour. This is a kind of manure easily obtainable and applied, and one likely to prove beneficial to all enclosed gardens, and should be generally used, more especially where only a limited supply of farmyard manures is obtainable. When it is considered how much good this simple aid does to the soil, even within the limits of what may be called the soot showers upon land around the metropolis, is it not reasonable to say that its influence is likely to be far more marked or beneficial in country districts, far removed from smoky atmospheres? *William Earley, Ilford.*

## WATER RAM.

I THINK it will be some time before the experiences of the drought of last summer and autumn are forgotten by any of us. In common with many other places we suffered the inconvenience of a short supply of water; horses and water-carts were daily at work to keep up the supply, but in vain—for the tanks got empty, and all this with a cloudless sky, and for weeks and weeks the temperature at 80° or 90° in the shade. It became quite serious, for what is a garden without water? At last Mr. Blake, the well-known hydraulic engineer, was consulted. "Nothing simpler," said he; "you have a plentiful supply of water a quarter of a mile distant. I can supply a ram which will give you a supply of 6000 gallons per day easily." Leave was granted, and in a wonderfully short time it was at work, and the aspect of everything was changed, for on the topmost tower of the Castle there was water, in the garden, stables, laundry, mechanics' yard, and the farm, upwards of a mile distant there was, as Coleridge said, "Water, water everywhere."

When our Ram was first set to work the sound travelled up the naked pipe in a remarkable manner. "I'll see," said a visitor to me one morning, "that that fine ram of yours is stopped at night, for I do believe I heard it all night," but this noise ceased directly the pipes were covered. A new difficulty arose, for the chemical properties of the water corroded the iron valves, as barnacles do an uncoppered ship. These were soon replaced with valves made of gun-metal, and now all goes as "merry as a marriage bell"—every tank is brimful of soft-water, and already its temperature is 65°, and I doubt not in a month it will have risen to 70°, and this from an open lake of 20 acres. "But why all this yarn about your water supply?" asks some one. Why just this: that our case represents thousands throughout the country, and although I am "neither a prophet nor a prophet's son," yet many do predict another dry season, and for the encouragement of those who contemplate supplying their estates with plenty of water I have written

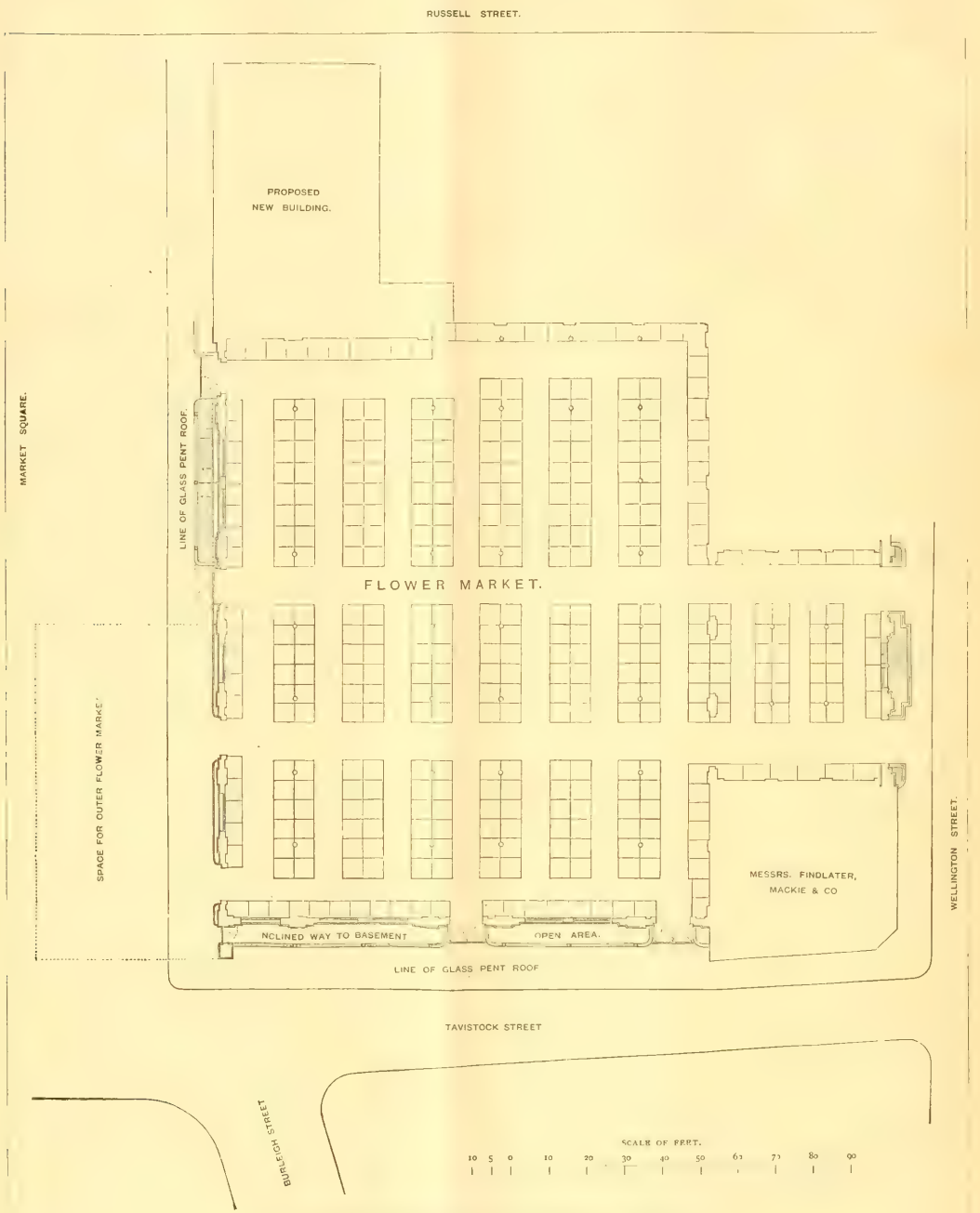



FIG. 15.—NEW FLOWER MARKET, COVENT GARDEN: GROUND PLAN.

this, for nearly everywhere it is practicable and nowhere expensive, compared with the comfort.

Before I leave this subject I would also ask a question. Why is it that from Land's End to John o' Groat's one sees every brook and river polluted by the drainage of dwellings being turned into them? On the sea coast and in our very large cities there is some excuse, but surely in the open country, where millions of acres are starving for want of something to encourage vegetation, surely the case is otherwise. So fashionable has this become that it behoves those of us who live in the country at all times to raise our voices against this twofold folly. Why poison the stream when the land all around is crying, "Give, give, give?" *J. Rust, Eridge Castle, Sussex.*

## THE AFGHAN DELIMITATION COMMISSION.

WE (*Nature*) are indebted to the courtesy of the Kew authorities for the opportunity of publishing the accompanying letter from Surgeon-Major Aitchison, C.I.E., F.R.S., which gives the most recent account of his work as naturalist to the expedition :—

"Camp Tir-Phul, Northern Afghanistan,
6 miles from Khusan.

"Dear Sir Joseph Hooker,—

"I am now able to write to you with some pleasure, as I have been able to put together this year some 300 species in all. The last 100 I obtained on a ten days' trip that I made from this camp. I left this on April 25 under very bad auspices, as it had blown all night and was blowing a terrible gale with every chance of a heavy fall of rain from the north. But I started and got as far as Khusan, in the vicinity of which, beside the ruins of an old 'serai,' I halted. I picked up a few odds and ends, the chief attraction was the Rosa Margarita (if a new sp.) mihi. It covers the whole country in localised patches, and being very dwarf in habit, not above 2 feet, the flowers are seen to perfection ; they open out expanding almost flat, when the brilliant eyes, formed by the claret colour of the bases of the petals, gives it quite a character. Amongst my Rose hips sent to you last year this was one of the species. I hope to be able to supply you with a lot more of it. It would make a lovely flower border.

"I marched next to a place on the right bank of the Heri-Rúd River opposite Tomán-ághá, 15 miles. Our route lay over a plain that had once been the bed of a river where the river had made a great bend ; the river, after silting up this bend, had left it. The most characteristic plant here was a Rhubarb, usually with three root leaves of immense proportion for the size of the flowering stem ; these leaves are so pressed flat to the ground that it reminds one more of the Victoria regia leaves (without the margin), and this is the habit of the plant. The plant was fruiting, having large winged fruit of the most brilliant scarlet ; it will make a grand thing in gardens. The beautiful colour of the fruit is much helped out by the splendid green of the leaf background. There are, one may almost say, no leaves on the flowering stem—one or two most minute. I measured one of the largest on the ground : it was 4 feet from the base to apex and 5 feet across ; the other two with this one were a little smaller: the three together gave it a very curious look. I hope soon to get the seeds home. I have collected a good deal of the root ; it is called 'Fool's Rhubarb' owing to its purgative qualities, and curiously enough the fruit is employed in preference to the root as a purgative, given as a decoction. With the exception of an occasional woody shrub that may rise to 5 feet, the place was covered with a species of Artemisia (probably several) about 2 feet high, and occasional Umbelliferæ. There were no trees of any sort : these are only to be found in the river bed —viz., Populus euphratica, and two species of Tamarisk, and a Lycium. At Tomán-ághá, in the bed of the river, was a woody Salsolaceous shrub, which I do not know. I got good specimens of the wood and flowering branches.

"I left Tomán-ághá on the 28th, passing the remains of some old ruins 2 miles from my encampment, and turned east by north towards 'Galicha' (a carpet). As we marched along, fancy crossing the markings of two pairs of carriage wheels ! These had been made some months ago by the carriage of a Persian prince who had come to our camp at Gulran to be doctored. The route lay now across towards the base of the Paropamissus range over a most extensive plain on which the attraction was a miniature forest of a species of Umbelliferæ, excessively like, but not the Assafœtida. This was in full bloom, the stem and flowers being at first all of a light orange-yellow ; as the fruit ripens the whole colour changes to a russet-brown. Each flowering stem is from 3 to 5 feet high, and there are usually fifty plants to 100 yards square, the interspaces being altogether filled up by grass of a foot in height. On the 29th, left Galicha for the Kambao Pass to enable me to cross through the range. Our march lay over a plain the continuation of that of yesterday, and which from its extent is lost to the sight. This is celebrated as the plain of the wild donkey, and here I counted sixteen herds of at least 10,000 in each. The nearest was a mile off, and their presence was recognised by a cloud of dust rising in a swirl on their galloping—like the smoke from the chimney of a steamer. It was a most extraordinary sight, watching these clumps moving from place to place. They are occasionally shot and eaten. I forgot to tell you that, except my own party, there was probably not a human being within 30 miles of us. The country has *no* inhabitants, and until the nomads turn up with their flocks from the lower regions it is a desolation. The last part of our march was for 6 miles within the ridges of the base of the hills, and here in the stream-beds Tamarisk was the only (woody) shrub. I halted some 5 miles to the west of the pass, hoping to make a great haul on the 30th. From the moment of entering these valleys they seem a mass of colour—one from Buttercups (one species only), another from a Poppy ; the bed of the stream purple with a tall Onion, and the interstices green with one grass. I had previously got most of the things so promising here, but saw signs of getting into a very fine new lot. On the morning of the 30th a regular hurricane of wind blew from the north, so that I thought the best plan would be to move my camp across the pass, and get a better and more sheltered locality. I just managed to get to the north-east side, when it *did* come down—such a torrent ! but as all preparations had been made we were comfortable ; had I remained on we must have been swept out of our old camp.

"May 1 proved a most superb morning, so I was up and out at 6 A.M., went straight back to my old encampment on the west side, and from there collected back. I got some thirty-five species—a second Arum, a Prunus, an Elæagnus, of which I sent you the fruit last year ; one Pistachia bush, a large number of Astragali, which I feel sure will puzzle Baker ; a curious Rubiaceous shrub, a fine Orobanche, only five grasses, and a most lovely Everlasting Pea, like the ordinary English cultivated one, only dwarf. I believe everything here is dwarfed by exposure to the winds. You cannot understand the difficulty I have with it in collecting. To save my plants at all I have to put them at once into paper. It takes three of us to do this, and not allow paper or plants to blow away. I must say it does not improve one's temper.

"I got one or two species of a very nice Gentian like Gentiana Kurroo of Royle, the altitude of Hari-rúd River, 2000 feet ; Kambao Pass, west side, 2900 feet ; pass itself, 3550 feet ; Kambao on north-east, 3250 feet. Not a Fern of any sort, not even Ophioglossum, which I looked upon as a certain find. I spent my second day—viz., May 2—at the camp on the north-east side of pass ; here there is a fine Hawthorn, from which I collected flowers in bud on the 1st. Along the whole of this range, well within it, where the water is sweet and the air cool, the Hawthorn, a common Plum, and Amygdalus eburnea, are more or less plentiful. I picked up an Oxygraphis, and a very pretty Geranium with a most curious Potato-like root, only the tubers are heaped up on each other when there is more than one to a plant. You know they made me naturalist, so, in addition to collecting plants, I have to shoot poor little birds, and I hate it. I got two bee-eaters, the one more lovely than the other, and a nightingale.

"On the 3d I marched to a place 8 miles nearer our first Gulran encampment. I had picked up most of the cream, and there was not much, except additions in the way of fruiting species, to be made. This I did, and got a venomous snake which may be a cobra—all but walked on to him—5 feet long and 6 inches at his thickest, fangs three-quarters of an inch ; a most unpleasant fellow to meet. I shot him, and after fancying I had killed him, cut off his head and neck to keep (I could not keep his whole body), when lo ! his body, minus his head, walked off searching for escape, the head trying to fang its own neck.

"On the 4th I moved still east by north some 12 miles to our first encampment at Gulran. I got some nice things *en route*, and had just ticketed and arranged them preparatory to great work for the morrow, when in came a letter from Sir Peter Lumsden telling me to return at once. Alas for my great expectations ! I packed up, and we moved camp at 2 A.M. on the 5th, marched up the valley, passing our second Gulran encampment, and on south to the east by north side of the Chashma-sabz Pass, I had no time to halt and collect. I passed a Gladiolus and an immense number of things. On the pass I collected the 'Siah-chot,' which is to me in all probability Cotoneaster nummularia. I had collected its fruit and sent it to you from these very bushes. I got it in this pass last year. It is from this shrub that 'Shir-Khist,' the manna of these parts, is collected. I have sent you a bottle of it packed amongst some other things.

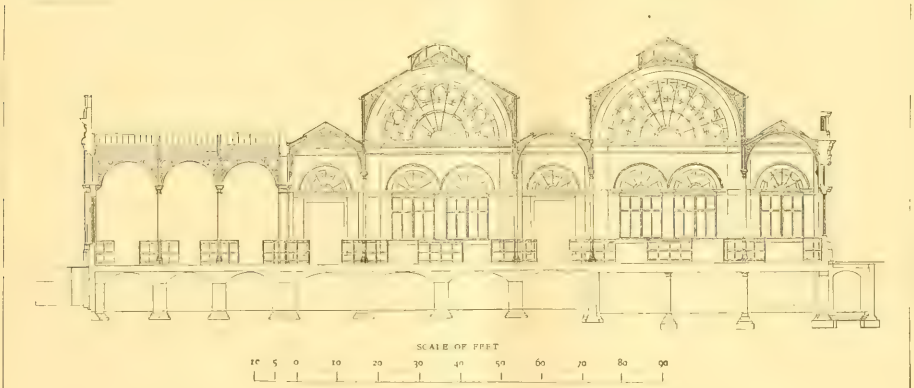



FIG. 16.—NEW FLOWER MARKET, COVENT GARDEN : SECTION FROM EAST TO WEST, LOOKING SOUTH.

They have two other kinds—one from a Tamarisk and the other from Alhagi. I myself collected it from a Salsola. I got across the pass by 2 P.M.; halted until 8 P.M. and got into Tir-Phul at 8 A.M., the camels at 10 A.M. of the 6th; did 60 miles in thirty-four hours—good going for camels, and men more or less on foot.

"I am glad I am in, because my plants had to be looked to. I got, as I said before, 100 species in this tour, not less than 1200 specimens. It is much harder work than Kurram; the fact is, I am not younger, and my back wants a good deal of oiling.

"J. L. T. AITCHISON."

# Orchid Notes and Gleanings.

## ORCHIDS AT BRETTARGH HOLT, MILNTHORPE.

AMONGST the many grand examples of cultivation at this garden the following are well worth noting:—Cattleya Sanderiana, a superb specimen, with four dozen of its fine gigantic flowers expanded, a good variety, is well worth seeing. Oncidium macranthum, several flowering well, one specimen alone five spikes, in all over 150 flowers, is very attractive. There are also several fine Vandas in flower—suavis and tricolor—a plant of the former had a dozen spikes. Odontoglossum vexillarium, several fine forms; also others. A sight worth going to see is the Masdevallia-house, which is about 24 feet long, span-roof staging round the sides full of grand varieties now is perfection. There are between 2000 and 3000 expanded flowers of all the best varieties in cultivation. Mr. Walker has for some time past been selecting these when in flower, and of all I have seen have never yet met with its equal. Gigantic forms of Veitchii, ignea Harryana, Lindeni, Denisoni, Chelsoni in many varieties, are here to be seen growing like weeds, and flowering magnificently under the care of Mr. Macgrigor, his intelligent gardener. *A. O.*

### CALANTHE NATALENSIS, *Rchb. f.**

This exceedingly handsome species is now flowering at Kew, and probably for the first time in Europe. It is a native of Natal, and the district of King William's Town, and doubtless occurs in the region between; the Kew plant was received from King William's Town, and is probably from the same locality (viz., Perie Bush, near King William's Town), as plants of it have been cultivated in the Cape Botanic Gardens. It is the only South African species of Calanthe; and according to the species on dried specimens only grows in swampy places in woods and forests; one label stating that it is "found only in very wet places in bush"—"bush" being the term for forest. The following is a brief description of the plant:—

Leaves elliptic, lanceolate acute, growing up to a foot in length, and 2½—4 inches broad, plaited, and a little crisped at the edges, bright green, with a slight tendency to variegation. Flower-stem, present with the leaves, 12—18 inches high, green, pubescent in the upper part. Bracts lanceolate acute, ¾ inch long, spreading. Flowers numerous, about an inch in diameter; sepals and petals oblong-elliptic acute, bright lilac on the outside and edges, the inner surface whitish-lilac; lips flattish, 3 lobed, at first bright lilac, afterwards changing to salmon colour; lateral lobes triangular oblong, spreading; middle lobe somewhat truncately obcordate, with an apiculus in the notch, and three contiguous rows of small roundish calli towards the base, the middle row longest. Spur ¾ inch long, curved, whitish-lilac. *N. E. Brown.*

* C. natalensis, Rchb. f., in *Bonplandia*, 1856, p. 322.

### ORCHIDS IN BRITISH GUIANA.

A correspondent of the Demerara *Argus* is publishing in that journal a series of articles on the Orchids of that colony, and the most appropriate methods of cultivation in that country. The following extract will show the practical nature of the advice given. We shall watch the continuance of this series of articles with much interest:—

"In the cultivation of epiphytal Orchids it is necessary to take into consideration that they live on gases and moisture derived from the air; comparative stillness is requisite, and strong winds very injurious. The east and north winds which prevail at certain seasons, if allowed free access to the plants, dry and ultimately kill them. When the air is still, and the garden below well watered, a current of moist air is continually ascending from the earth, creating a genial atmosphere in which to grow epiphytes on low trees. Some species require very little shade if well protected by a leafy screen to windward; others must have a canopy above, which only allows broken sunlight to penetrate.

"Two of the hardiest and best (Oncidium Lanceanum and Cattleya superba) are rather common in Georgetown, and often represent the survival of a number of species. These flourish in a drier atmosphere than many others, and do not flower if too much shaded.

"A well grown Orchid has plump bulbs, and firm, stiff leaves. If too much shaded the leaves are limp, and hang over; and if too dry they shrivel and fall off. Epiphytes should be fastened on the under parts of a branch, or on the trunk below a fork, to get some moisture from dew and rain trickling down the small channels in the bark. Until they have roots they should be fastened with wire, but when they are established the wire should be removed, being no longer necessary, but a hindrance to the growth.

"Several kinds of pots and baskets are used in growing epiphytes. Nothing stagnant or sour must remain near the roots. Rotten wood is a poison. Hardy plants will do well on blocks or shingles, but open baskets made of wood bars are better for the majority. Many grow best in pots, especially in the glass-house. Pots and baskets must be filled with some material which is porous and retentive of moisture. Crocks, burnt earth, and charcoal are suitable for outdoors, but in the greenhouse fibrous peat and sphagnum moss are best. All mounted plants should be dipped in water occasionally, to drive out woodlice and cockroaches.

"Watering will depend so much on weather, position, &c., that no general rule can be given, except that during the flowering season less is required. In an airy situation it is scarcely possible to water too much, but in close damp places much water causes rotting."

### CATASETUM MACROCARPUM.

A species with elliptical pseudobulbs, deciduous lanceolate leaves, and few flowered racemes of flowers proceeding from the base of the pseudobulbs. The individual flowers measure 5 inches across. The sepals and petals lanceolate-acuminate with purplish spots on a green ground. The two side petals are directed vertically upwards behind the column parallel to it and to the dorsal sepal; the lip is an inch across, funnel-shaped, yellow, with a 3-lobed reflected border, column erect with three awns. *Orchid Album*, t. 189.

### LÆLIA ANCEPS WILLIAMSI.

A lovely variety with star-like flowers, with five white spreading segments, the three-lobed lip projecting, the side lobes erect, yellow, with red veins, the central lobe flattish, tongue-shaped, with a yellow blotch at the base. It is figured in the *Orchid Album*, t. 190.

# ALPINE PLANTS.

VERONICA LYALLI has proved itself perfectly hardy, having withstood our past four winters without the shadow of harm. It is a neat little plant, dense and compact, the stems closely furnished with small leaves, and at present suffused with tiny mauve-coloured blossoms. Hailing from New Zealand this pretty Veronica was at first branded with the reputation of tenderness, but, like many another of the so-called tender foreigners, it has proved itself not only well suited for our climate, but a valuable addition as a neat, free-flowering rock or border plant. As regards soil it is by no means particular, light or stiff, dry or damp coming alike. It is readily propagated from cuttings inserted in the open towards the end of summer.

### MERTENSIA SIBIRICA,

although similar in growth to the old Virginian Lungwort (M. virginica), is yet distinct in both foliage and flowers, and, in my opinion, a more desirable plant in every way. The leaves are large, of a beautiful glaucous blue, not unlike those of Eucalyptus globulus, and, being freely produced, give to the plant a decided characteristic of its own. This elegant plant is very attractive, the drooping panicles of sky-blue bell-shaped flowers still further enhancing its beauty, and at once rivetting the attention of the passer-by. As a genus Mertensia is distinguished from Pulmonaria, which is the old name of the plant, by the stamens exceeding the corolla tube, and also by the nuts being fleshy when in a young state. A white-flowered variety of sibirica has crept into circulation, but it is still somewhat rare, and a worthy companion to the normal form. Peaty loam suits this genus best.

Amongst the Cinquefoils, of which we have many worthless and troublesome forms, few can perhaps equal either for richness of bloom or for ornamental foliage, the Cashmerian variety Potentella dubia. The flowers, which are bright yellow, and the size of a shilling, rise but a short distance from the intense green and remarkably dwarf foliage. In rather damp ground it succeeds well, and during early June and July the foliage is almost hidden with the innumerable bright yellow flowers. This is a fitting ornament for borders or rockwork, and easily increased by division.

### LEONTOPODIUM ALPINUM.

The Edelweiss, or Bridal Everlasting, is now grandly in flower, and evidently as much at home in the lowland garden as on the great Continental mountains ranges. The white dwarf flowers we need not describe, for who has not seen these as dried specimens brought in quantity from its Swiss home year by year until the plant is now threatened with total extinction? The Bohemian Government are, however, trying to acclimatise it on their mountains, and, should the experiment succeed, the flora of Northern Bohemia will have received a valuable addition. In this country it is a perfectly hardy perennial, but methinks I see in home-raised plants a step onwards in the way of acclimatisation. As a rock plant it is very ornamental, but should be planted in rather poor, stony soil, that of a heavy strong nature causing too luxuriant growth, and doing away, to a great extent, with the white colour of the flower, which is so marked a characteristic of Continental over home-grown specimens. Seeds are easily procured and as easily raised, so there is no excuse for this distinct and beautiful everlasting being any longer a stranger in our gardens. *Emergo.*

### LINUM CAMPANULATUM.

Can any reader of the *Gardeners' Chronicle* tell me whether this plant is in cultivation in England? It is in many catalogues, but the plant sent for it is either L. flavum or a blue Flax of the class of L. perenne. L. campanulatum is a native of the South of France and North of Spain, and is figured in Loddiges' *Cabinet*, tab. 1254. It is, I think, much earlier in flower than L. flavum, a native of Austria, which is correctly figured and described in the *Botanical Magazine*, tab. 312, and more herbaceous and prostrate than L. arboreum, a native of Crete, figured in tab. 234 of the same work. All three species have yellow flowers, bearing much resemblance to one another; but I cannot meet with L. campanulatum true, though I have long had abundance of the other two species, which are often confused with it and with one another. *C. Wolley Dod.*

### ARMERIA CEPHALOTES.

This variety is now a thing of great beauty on our rockery. It is one of the best perennials we have. Its pink flower-heads, 2½ feet high, are very effective. It is a variety that should be in every collection, and certainly no selection of perennials should be made without it. It is easily raised from seed; we have had no success by division. *W. Kettlewell, The Gardens, Bath ath Burry.*

# Plants and their Culture.

## PLANTING OUT IN THE OPEN BORDER.

THIS system I have consistently recommended in many previous Calendars as being more congenial to the wellbeing of the subjects under notice as well as a material saving in labour with the water-pot during the summer months. It will be well to look over the stock of winter and spring blooming plants once more, and see if there are any remaining in pots that can be so treated for the remainder of the summer and early autumn. We are just preparing a piece of ground that will be well suited to the old corms of the Cyclamen, which will at once be planted therein fresh root-action will then soon commence, although no leaf develop-

ment will be apparent for some time to come. We have worked both soot and lime into the soil, and also added some leaf-mould that was rotted down in the forcing-pits. The soot and lime will prevent the wireworm and slugs from troubling us for some time to come. My latest batch of Spiræa (Hoteia) japonica are only just being removed from the conservatory—a proof of the great value of this plant for late as well as early work. This late lot of plants were stood in the open as soon as any danger of spring frosts was over, and taken to the conservatory when expanding their flower-spikes. Retarding their too rapid advancement was effected by a shading (somewhat heavy) during the day-time; this also accomplished another end that must not be lost sight off, viz., in causing the flower-spikes to be of a purer white than when the plants are fully exposed to the light, as under the latter condition they are disposed to assume a creamy tint. This late lot of plants will be turned out at once on a border where they can remain for one season, and be liberally supplied with water when needed. Dielytra spectabilis is another subject that succeeds when treated in a similar manner as regards planting out. If a few vacant spaces exist in the herbaceous border advantage could be taken of the same to plant the Dielytras therein, and in such a case, leave them, if possible, for two seasons.

### Early Forced Pot Roses.

These should receive attention in regard to repotting and other minor details as soon as possible. It may seem rather early to reduce the balls and place them into fresh soil, but they will soon make up for what little check they receive by rooting freely into the same, thoroughly establishing themselves before the late autumn rains come on. Pot Eupatoriums and keep them pinched to obtain dwarf bushy plants; exception must be taken, however, to the latter operation being performed in the case of the autumn-flowering variety. *James Hudson, Gunnersbury House, Acton.*

## The Hardy Fruit Garden.

### WALL TREES.

Fruit trees on walls and in the garden borders will require much attention during the present month. The weather being very hot and dry, watering and syringing will be required daily. Young growths will require nailing-in and some cutting-out, or pinching back as the case requires. All weakly growths are best cut out as much as possible, for it is impossible to expect good results from small unhealthy shoots; therefore it is most essential to obtain as far as possible a strong healthy well matured growth on all kinds of fruit trees, whether on walls, the open garden, or orchard.

### Orchard.

Pear and Apple trees growing vigorously, but not bearing fruit freely, should now be marked for root-pruning early in the autumn. Varieties that are most fruitful in certain districts should also be noted with the object of increasing the stock at the proper season, either by grafting old-established trees with the most prolific varieties, or planting young ones. Cherries and Plums may still be budded, much in the same manner as Roses, or by inserting buds on any healthy shoots of established trees. Peaches and Nectarines may be treated in the same manner, with every prospect of success. Mildew and green-fly must be kept under, the former, by using sulphur freely whenever it appears, the latter, by a free use of tobacco-powder.

### Figs and Vines.

Figs and Vines on walls will require constant watering and the syringe to be used freely, or the fruit of both will be small. One of the best varieties of Fig for the open wall is Brown Turkey, which is very hardy and prolific. Old trees are apt to produce a thicket of young shoots, which should be timely removed and the strong shoots left stopped five or six joints above the fruit. A good variety of Vine for the open wall, if not the best, is Royal Muscadine, which rarely fails to ripen its fruit, and if well thinned and not over-cropped will be of good size and average quality.

### Raspberries.

Raspberry canes should be gone over again, and all shoots not required for next year's fruiting pulled up or cut away. Any one looking out for a good free-fruiting vigorous growing variety with fine large fruit, will not be disappointed by ordering Bamforth's Seedling. *J. Smith, Mentmore, Bucks.*

## The Orchid House.

### SUMMER WORK.

July, August, and September, are the months during which we expect the largest proportion of the plants to make their growth, and if they are neglected at this season the results are sure to be unsatisfactory. In our own collection we make a point of getting a good growth on everything at this season, and to that end we give each genus as far as possible the treatment best suited to it. Take, for instance, the Dendrobiums, the advocates of the pruning system say that the growth must be made in a high temperature, and that this is necessary to make up in part for the lack of nourishment obtained from the back bulbs; but what is good for pruned Dendrobiums is equally good for those that have not been so treated. We have placed most of the Dendrobiums into the warmest house we have, where they have a temperature when the house is shut up in the afternoon ranging to 90° and 100°, the night temperature not falling below 70° or 75°, and with plenty of moisture in the atmosphere the growth is sure to be satisfactory. Those that luxuriate in this high temperature and moist atmosphere are D. nobile, D. Farmeri, E. thyrsiflorum, D. Dalhousieanum, D. Paxtoni, D. crysotoxum, &c. In three months the growths are made and matured, and when the winter season arrives they are prepared to pass through it in a low temperature and rather dry atmosphere. While growth is being made plentiful supplies of rain-water, at least as warm as the atmosphere of the house, is necessary.

In the warmest house Odontoglossum Roezlii is also making good growth at this season. We repot these and O. vexillarium once in two years. They also like plenty of moisture, and to be freely watered at the roots. Angræcum sesquipedale is also pushing from the stem above the moss its thick succulent roots. Has any one noticed that when the moss in which the plants are growing is fresh, green, and healthy, the roots descend close to the stem, so as to reach it as speedily as possible, but when the potting material is in bad condition they grow out in a horizontal position, and thus avoid it? The attraction which suitable soil or potting compost of any kind has for the roots of different plants is worthy of investigation, not only to the scientific man but to every one having to deal with practical gardening. I ought to state that Vanda teres should be placed in the lightest part of the warm house, the growths trained close to the glass roof, and very lightly shaded from the sun's rays during the warmest part of the day. We treat V. Hookerii in the same way, but cannot get anything like such strong growth upon it as we do on the other species. In the warm house the temperature will range from 65° as a minimum to 100° when the house is shut up in the afternoon.

The treatment given to the occupants of the Cattleya-house is very similar to that of the warmest department. All the plants not repotted during the last six months have had some fresh material placed on the surface, and this has caused the roots to grow freely from the base of the last formed pseudobulbs, or from those in course of formation. They are doing this in any garden where the plants are cared for; but in some gardens, either from want of knowledge or some other cause, Cattleyas do not get the right treatment. I visited a garden during the present week, and found a number of plants of Cattleya Mossiæ, but not one of them was making roots on the surface; the moss, which ought to have been in a living state, was dead, and the peat powdery and not in a condition to form a healthy field for the roots to run into. Slugs and wood-lice are very fond of the fresh young roots, and if they eat them off the plants are sure to suffer. The destruction of these pests should constantly be going on, late at night and early in the morning. Lælia purpurata, L. elegans, and others of this type, are also rooting freely; they like a warmer temperature than some of the Cattleyas, hence it is better to place these with the Cattleyas that require most heat in the warmest end of the house, or at the cool end of the warm-house. Odontoglossum citrosmum is also growing freely with the Cattleyas and Lælias on the sunniest side of the house. They have recently been potted, and are now rooting freely into the fresh sphagnum and turfy peat. On the shady side of the house, all the Cypripediums requiring an intermediate temperature are growing freely; most of them have passed out of flower and are making their growth. They are all the better to be syringed overhead on the afternoon of hot days. Nearly the whole of them were potted in May. I fancy all the Ladies' Slippers succeed best when repotted in summer; the young roots can be seen in a week or ten days after pushing freely near the surface, and the plants speedily recover. Most of the exhibitors of Cypripediums grow the plants in 5 and 6-inch pots, and a day or two before the exhibition they are turned out of the pots and placed together in a large mass. From ten to thirty pots may be required to make up one plant. When the exhibitions are over they are repotted again in the small pots, and the operation does no material injury to them. Vandas and Aërides Fieldingi we place on the shady side, during the summer months at least. It is best to repot them if they require it early in the year. The Fox-brush Aërides are yet in flower, and are rooting freely into the potting material, which is live sphagnum intermixed with some drainage and charcoal. They are making leaf-growth, and will continue to do this for some time. The Vandas are a puzzle to me. I have been trying for many years to grow them, and at the same time save the lower leaves, but somehow they will die off. If a plant flowers well, and the spikes are allowed to remain on the plants for six weeks or thereabouts, one or two pairs of leaves will become yellow and die off. Some growers have plenty of bloom on their Vandas, and save all the leaves from the base upwards, but I must confess this is a feat we cannot accomplish. The plants are in an intermediate temperature, they have been placed in every position in the house, they have been watered freely at times, and at other times sparingly, but we do not yet master their culture. The Cymbidiums have received numerous and important additions during the last few years; C. Lowianum is a noble plant, producing long spikes of flowers which remain in good condition for three or four months: it is one of the very best plants for exhibition owing to the character of the flowers, which do not readily suffer injury during packing or transit. C. devonianum, though introduced and described by Lindley in the *Gardeners' Chronicle* more than forty years ago, is yet a very rare and beautiful species. The flowers are very distinct in their yellowish-green sepals and petals marked with lines of brown spots, the lip is red with two large spots or blotches of maroon-purple. Most of the Cypripediums seem to be ditch plants, and require loam in their potting soil; they also require a good supply of water during the period of growth—that is, when they are rooting freely, as they are doing at present. They do not require so much potting soil as is sometimes given to them. The healthiest plants and the most vigorous are those that have the pots packed full of roots; and as long as they continue to do well it is not necessary to repot them. The most useful of Orchids is the brilliant orange-scarlet Epidendrum vitellinum majus. Not many years ago ordinary plants of it were eagerly purchased at the Orchid sales for as many pounds as they now cost shillings, but a plant is none the less valuable because it is cheap. There is no need now to pay high prices in order to have a goodly display of magnificent Orchids. *J. Douglas.*

## The Kitchen Garden.

### SEED SOWING, PLANTING, &c.

The end of July is a good time to make sowings of Queen and Early Naples Onions, selecting a piece of ground where sufficient space will remain to make the main sowing (autumn) the second or third week in August. Amongst later varieties for the last-mentioned sowing, should size be a consideration, White Elephant (Daniels') and Giant Rocca should be sown in conjunction with the ordinary white and red Tripoli. In the beginning of August a sowing of Early Nantes Carrot should be made on a well drained piece of ground. Short-horn Carrots of various sizes are always esteemed at table.

### Cabbage.

The last week in the month Ellam's Early Dwarf should be sown for early spring cutting, and a fortnight later them ain autumn sowing should be made. To save labour of transplanting the seedlings into nursery beds, a sufficiently large bed should be sown, not only to provide plants enough for the autumn planting, but also to leave some hundreds in the seed beds to fill up probable blanks, and to make a similar plantation in the following spring if necessary. As soon as suitable weather occurs, the Savoys and Kale, and late sown Broccoli should be got out into permanent quarters. Tomatos on walls, &c., will now require constant attention in pinching and nailing, or tying to stakes. Of herbs a selection of the various kinds should now be cut and dried for winter use. They are best dried in a shed where there is a good current of air. *G. H. Richards, Somerley Gardens, Ringwood, Hants.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| TUESDAY, | July 21 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| WEDNESDAY, | July 22 | West of Scotland Pansy Society's Show, Glasgow.<br>Newcastle-on-Tyne Flower Show (three days)<br>Peterborough Flower Show<br>Salterhebble and District Rose Society's Annual Rose Show |
| THURSDAY, | July 23 | Sale of Valuable Imported Orchids, in variety, from Messrs F. Sander & Co., at Stevens' Rooms |
| FRIDAY, | July 24 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | July 25 | New Brighton Rose Show<br>Darlington Rose Show. |

THE question as to the origin of the cultivated Potato is not fully settled, even after the elaborate researches of Mr. BAKER, on which we commented at the time of their publication. Practical men, so called, are inclined to undervalue such researches, because they do not appreciate their importance. They do not, say they, help them to cultivate better or to secure larger crops, and so all this hair-splitting about wild species and the localities where they grow, is in their eyes but trifling. This sort of feeling was more common once than it is now. The progress of scientific discoveries has been so vast, and the practical results so obvious, that scientific research meets with much more respectful attention now-a-days than once it did. But, curiously enough, the same feeling crops up now in a somewhat different form, and in a quarter where it was least looked for, and where there is the least excuse for it. The physiological side of botany, up till within a few years, was sadly neglected in this country—the country, nevertheless, of GREW, of HALES, of ROBERT BROWN. From the time of BROWN to that of DARWIN there was, roughly speaking—disregarding exceptions—a period when structural and systematic botany was taught and pursued in this country to the almost entire exclusion of vegetable physiology. In former years we had repeatedly to lament in these columns this one-sided tendency as a serious impediment in the way of horticultural progress.

The pendulum has swayed in the opposite direction, and now we have to regret the relatively little attention paid to structural and systematic botany on the part of the coming generation. We have frequent opportunities of observing this, and examiners are making it a subject of complaint. The modern system of selecting a few types as illustrations of the whole plant-world is in its way excellent, still more so is the practical teaching occasionally associated with the didactic instruction of the lecturer. Practical teaching, such as may be had in a few, still a very few, of our institutions, is an admirable preparation for an introduction to further research; but, limited in scope as it is, the results are not much more satisfactory than they were on the old system, and students are found profoundly versed in the structure and physiology of Chara or Torula, but unable to recognise the difference between a Poppy and a Buttercup. Not only is this the case, but the professors of the new *régime*, especially in Germany, are apt to ridicule and make light of the work of the morphologist and systematic botanist, and to treat the departments of science to which they are addicted much in the same way as the old-fashioned self-styled practical men did science of any description.

One remedy for this state of things is to be found in the demonstration of the practical utility of such studies. Such a demonstration is the only telling one with a practical man; but that such a method should be needed for the enlightenment of those whose boast it is to follow knowledge for knowledge' sake is passing strange. When it is pointed out, for instance, that a knowledge of the distinctions between various species of Solanum, and of the conditions under which they grow naturally, is likely to be productive of good results in the way of preventing or evading the Potato disease, the practical man is ready to pay attention. When it is shown that the same sort of information affords valuable evidence as to the formation of tubers, the origin and history of the Potato, and the action of the forces which have made it what it is, then perhaps the physiologists and the histologists of the present day may come to see that morphology and systematic botany are not the mere pastimes they consider them to be.

We have been led to make these remarks by a request we have recently received for information as to the form of the calyx-lobes in various Potato blooms. In most cases the lobes of the calyx or sepals are lance-shaped or acutely pointed. Whether this is universal, or whether there are varieties with blunt sepals, is the point it is wished to clear up. The work of the cultivator has been principally directed to the improvement of the tuber, and so we find an amount of variation in the tuber much greater than in the flower. Potatos have never been grown for their flowers exclusively, and hence if we find variations in them the evidence so afforded will be the more valuable in that it is, so to speak, less artificial, and consequently more useful in affording a clue as to the real origin of the cultivated plant. The matter may seem trifling, but as it is one which has a direct bearing on the history of the Potato, and indirectly on the prevention or circumvention of the disease, we venture to ask those of our readers who may have the opportunity, to tell us the names of any variety in which the calyx-lobes are blunt or rounded at the tips.

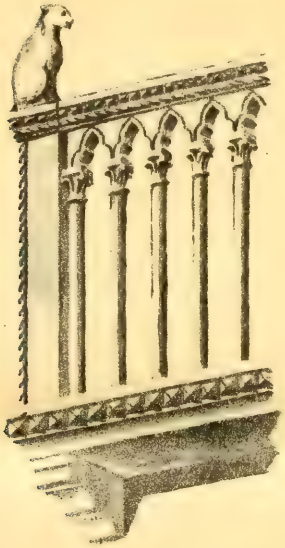


FIG. 17.—FLOWER AND FRUIT OF AERANTHUS LEONIS.

—— AERANTHUS LEONIS.—This singular and beautiful Orchid (figs. 17 and 18), which was described by Professor REICHENBACH in our columns at p. 726, vol. xxiii., and which was mentioned by us in a recent issue when calling attention to the peculiar arrangement of its spur, may be regarded as one of the most interesting of recent introductions. In habit of growth it is unlike any other Orchid, its thick flat 4—8 inches long, sword-like, sickle-shaped leaves being uncleft, except at the point of juncture with the stems from which they gracefully curve on each side of the stem. The flowers, which are profusely produced on stout spikes, are white, the dark green leaves forming an effective background; the spur, which ranges from 5—7 inches in length, is curved in a most curious manner, as will be seen by reference to our illustration (fig. 17). The lip occupies its original or normal position, for the customary position of the lip on the lower half of the flower is due only to the twisting of the ovary after the first formation of the flower. The seed-vessels, or fruits, too, which vary in form in the different specimens, are interesting in structure. Aëranthus (Angræcum) Leonis was discovered and collected by M. LEON HUMBLOT in the Comoro Islands, growing at a height of 5000 feet, and it is therefore said to be an intermediate, if not a cool-house plant—a statement which its whole aspect fully bears out, the leathery texture of its leaves, and the wiry nature of its roots seeming to assert that the plant is anything but delicate. It will, no doubt, succeed admirably in the Cattleya-house, either in baskets or pots, in sphagnum moss, if kept tolerably moist when at rest, and copiously watered when growing. None need fear to acquire this lovely stranger, for it is one of those plants which take kindly to a new home, and it will, under cultivation, even surpass in beauty the flowers gathered when the plants were collected. The question arises, What can be the moth which ensures the fertilisation of such a plant? The proboscis must needs be long and flexible to penetrate the curiously curved nectary of such a plant.

—— APROPOS OF THE ANTWERP EXHIBITION.—A new express day service between London and Antwerp will commence on the 25th inst., when the Great Eastern Railway Company will run a special Continental train from Liverpool Steet Station at 9 A.M. In connection with this train their fast steel paddle steamer *Adelaide* will leave Harwich (Parkeston Quay) at 11 A.M., arriving at Antwerp the same evening. The service will be run every Wednesday and Saturday, and there will be a corresponding morning service from Antwerp on Tuesdays and Fridays, reaching London the same night. The ordinary week-day service leaving Liverpool Street Station at 8 P.M. every evening, reaching Antwerp

# GOTHIC.



BALCONY VENICE.



EARLY ENG.
SALISBURY CATH.L



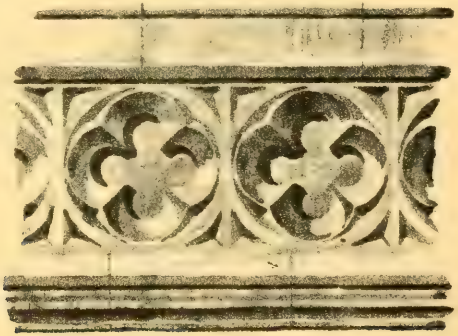
DECORATED
ST MARY'S OXFORD



BALUSTRADE
THE LAW COURTS



FLAMBOYANT
S. TRINITÉ, FALAISE.



PERPENDICULAR
ST PETER'S OXFORD.





FIG. 18.—AËRANTHUS LEONIS: MUCH REDUCED: FLOWERS WHITE. (SEE P. 80)

and Rotterdam early the following morning, will be run in addition to the new day service.

—— BRODIÆAS.—By accident we happen to have three so-called species of this genus before us, in the form of specimens kindly forwarded by the Rev. H. EWBANK and Mr. WARE. In the *Genera Plantarum* Mr. BENTHAM combines some of the Millas, the Triteleias, and the Calliproras into one genus, Brodiæa; and although we would not presume to question the propriety of so doing on purely botanical grounds, yet the structural differences are so great, and general appearances are so different, that it is a question whether for purely garden purposes it would not be well to retain the original appellations. In the case of Brodiæa coccinea the form of the perianth is so different that it seems better to retain the original name, Brevoortia.

*Brodiæa flava.*—The funnel-shaped flowers of this species are borne on long spreading slender stalks, arranged in simple umbels; each flower is about three-quarters of an inch long, tubular below, the limb divided into six oblong segments, coloured brownish-red outside, clear yellow within. The six stamens are of equal length, inseparate from the tube of the perianth. Each filament is two-lobed at the apex, the lobes membranous, oblong, with the anther sessile between them. The ovary is stalked. This is the Calliprora flava of some.

*Brodiæa laxa.*—On the top of a long wiry stalk is placed a simple umbel of erect or spreading very slender flower-stalks, each supporting a funnel-shaped flower about 1½ inch long, of a purplish-lilac colour, with six oblong segments and as many perfect stamens inseparate from the tube of the flower. The pistil is raised upon a long stalk like that of a Passion-flower—an unusual circumstance in Liliaceæ. The variety Murrayana is every way superior as a garden plant—its larger much more richly coloured deep violet flowers give it a special claim. Mr. BENTHAM who originally described the plant, called it Triteleia laxa; KUNTH called it Seubertia laxa; BAKER ranged it under Milla laxa; and finally Mr. BENTHAM in the *Genera Plantarum* reduces it to Brodiæa. In Triteleia in addition to the characters mentioned by BAKER and BENTHAM, the flowers are distinctly articulate at the top of the flower-stalk.

*Brevoortia coccinea.*—From the apex of a tall stalk hang in clusters long cylindrical bells of deep crimson colour, the segments turned back like the cuff of a coat, and of a pale green colour. Within the six segments stands up a white frill of three oblong segments which on cutting the flower open are found to be abortive stamens alternating with the perfect ones. Mr. BAKER refers this to Brodiæa, but the tubular form of the perianth distinguishes it from that genus.

—— SCHOOL CHILDREN AT A FLOWER SHOW.—The Council of the Caledonian Horticultural Society have followed out the course originated at the spring show this year of inviting the school children to see their exhibition in the Waverley Market. On the morning of the 9th inst. 711 of the boys and girls attending New Street School, and belonging to the poorest district of the city; 250 boys from the Original Ragged School, Ramsay Lane, and a similar number of girls from the corresponding institution in Leith Walk, with between 300 and 400 from the United Industrial School, Blackfriars Street, assembled in the Market, and under the guidance of their teachers were shown the various exhibits. The teachers proposed that the children be kept in sections in order that there might be no danger of the flowers being injured, but the officials of the Society gave them liberty to walk about freely, and it is satisfactory to learn that no injury was done to any of the flowers. Mr. MIDDLEMAS, of the Edinburgh Hotel, very generously provided each of the children with a bun and sweetmeats, which they seemed thoroughly to enjoy, and a similar present was made by the same gentleman to the children at the Institution who were unable to attend. The show was visited on the second day by 5000 persons, exclusive of the children. The Ramsay Lane boys had their band and pipers, and played selections of music while the children sang at intervals.

—— ONCIDIUM LEUCOCHILUM.—The majority of the species of Oncidium are of some shade of yellow, blotched with brown—a fact which greatly enhances the value of those that depart from the type. We have an instance of this in O. incurvum, with violet and white flowers, a plant that sometimes passes muster for Odontoglossum albo-violaceum. The flowers of the plant under notice present another happy combination of colours. The flowers are of medium size, and produced on lateral racemes along nearly the whole length of a branched peduncle some 5 or 6 feet high. The sepals and petals are pale yellow, heavily blotched with chocolate-brown. The labellum is white, suffused with clear purple about the distinct and conspicuous crest. The column is white, with large clear purple wings, a yellow callus in front, and a maroon anther-cap. This attractive combination constitutes the plant a valuable one for ordinary cultivation, and although the flower-stem is tall, the leaves and pseudobulbs are compact, occupying little space, and well deserving of more extended cultivation. A vigorous well-flowered specimen may be seen in the Orchid-house at Kew, and this species forms the first plate in Bateman's *Orchids of Mexico*.

—— CALOCHORTUS.—Mr. WARE sends us a handful of several varieties of these most exquisite flowers. Of Calochortus venustus he sends us several varieties of surpassing loveliness, but which it would be vain to attempt to pourtray in words. To those who are seeking some mark by which to recognise them we draw attention to the fringe of hairs placed below the blotch of colour above the base of the petals, on their inner side; sometimes this is a tuft of short dense tawny hairs, occupying the centre only of the petals—at other times it stretches across from edge to edge in a crescentic or horse-shoe form, as in a form called purpureus.

*Calochortus citrinus* has smaller flowers than some of its congeners, measuring about 2 inches in diameter. The petals are brilliant canary-yellow, with a half-moon-shaped fringe of short, thickset orange hairs above the base.

*Calochortus splendens.*—A not very appropriate name for a flower which owes its chief beauty to the lavender-grey colour of its flowers—just one of those colours which Quaker ladies used to affect before their taste had become vulgarised. The inside of the petals is lined with long hairs, and just above the base is a small patch of much denser, shorter hairs, looking like a mass of white powdered sugar. The anthers discharge their pollen before the stigmas are ripe, and sometimes the anthers, which are placed in front of the sepals, open before those which are placed opposite the petals. The structure, therefore, as in the allied genus, Cyclobothra, is clearly in relation to cross-fertilisation by insect agency. What insects can they be that require the allurements of such special beauty as these flowers present?

—— ROSE SHOW, ANTWERP.—We are informed that Messrs. LAMBERT & REITER, Rose growers at Trier, Rhenish Prussia, were awarded the 1st and highest prize at the Antwerp Exhibition for a collection of cut Roses in 200 varieties of all classes. For their collections of new Roses, sent out since 1880, 100 varieties; and for Tea and Noisettes, in fifty varieties, they gained as well the 1st prizes. Messrs. LAMBERT & REITER were the only German competitors.

—— EMBOTHRIUM COCCINEUM.—We understood that the specimen at Combe Royal, Kingsbridge, was the largest of this ornamental South American shrub, but we have just learned of another which is yet finer. This one is flourishing in Mr. BOLITHO's garden at Trewidden, Penzance, and has been a blaze of scarlet recently, even now its flowers may be counted by hundreds. The trunk, at 3 feet from the ground, is 44 inches in girth, and its entire height is certainly not less than 25 feet; moreover it is a good all round plant, being quite 20 feet through.

—— LILIUM BROWNI.—Mr. WARE sends us blooms of this sturdy-looking Lily, with its long, trumpet-like flowers speckled with purplish-brown on the outer side, white within. The anthers are orange, and open before the stigma is ripe. It was formerly known as L. japonicum.

*Lilium pardalinum californicum*, with six flowers on one stem, the segments recurved, orange-red spotted like the pard at the base. The peduncles spring from the axil of a leafy bract, and each bears at its base on one side a lesser bract or bracteole so close to the proper bract that there appear to be two leaves in juxtaposition; where the leaves become crowded by the non-development of the internodes, an appearance of a whorl is presented, but the constituent leaves are not all of the same order or age as they would be in a true whorl.

*Lilium pardalinum Bourgæi* is very similar, but has broader flower-segments of a deeper orange colour.

*Lilium elegans.*—Various forms of this are sent us by Mr. WARE, some rich enough in their blood-red colour to be worth calling atrosanguineum. We quite subscribe, however, to Mr. ELWES' opinion, that it is not possible to frame sufficiently constant distinctions between these forms. It is worth mentioning that this is the Lily formerly but erroneously called L. Thunbergii. L. philippinense was also exhibited by Mr. WARE, in his wonderful collections, daily renewed, at the "Inventories."

—— THE PERIODICAL CICADA.—Dr. RILEY obligingly sends us a report on this remarkable insect (Cicada septemdecim), which after a period of something like hibernation lasting for seventeen or for thirteen years, suddenly assumes a winged state. The insects are very destructive to the roots of fruit trees in some parts of the United States. Dr. RILEY is enabled to predict the occurrence of broods of these insects almost each year from 1885 to 1901, the brood which appears in any one year being that hatched from the egg seventeen or thirteen years previously. The history of the insect is most remarkable, as may be judged from the following extract, with which Dr. RILEY commences his paper:—

"Few species can claim such a singular history as can our Periodical Cicada. We are moved to admiration in contemplating the fact that an insect, after living for nearly seventeen years in the bowels of the earth, should at last ascend from its earthy retreat, change its sluggish, creeping, and wingless form, and, endowed with the power of flight, become a denizen of the air, and enjoy the full glory of the sun. But our wonder increases when we reflect that this same insect has appeared in some part or other of the United States at regular intervals of seventeen years for centuries—ay, for ages, in the past! Long ere Columbus trod American soil this lowly insect must have appeared regularly at its appointed time. It must have filled the woods with its rattling song, when none but wild beasts and savages were present to hear it. To me there is something pleasant in the idea that through its periodicity we are enabled with tolerable certainty to go back in thought, for centuries in the past, to a particular month of a particular year, or even to a given day, when the woods resounded with its song in the same manner as they did in 1868, or will the present year.

"It was my good fortune to discover that besides the 17-year broods the appearance of one of which was recorded as long ago as 1633—there are also 13-year broods; and that, though both sometimes occur in the same States, yet in general terms the 17-year broods may be said to belong to the Northern, and the 13-year broods to the Southern States, the dividing line being about lat. 38°, though in some places the 17-year broods extend below this line, while in Illinois the 13-year broods runs up considerably beyond it.

"It so happened that one of the largest 17-year broods, together with one of the largest 13-year broods, appeared simultaneously in the summer of 1868. Such an event, so far as regards these two particular broods, had not taken place since the year 1647, nor will it take place again till the year 2089.

"There are absolutely no perceptible specific differences between the 17-year and the 13-year broods, other than in the time of maturing; but while the insects forming these two classes of broods are not specifically distinct, they are good and distinct races which do not cross, and I have, therefore, for convenience sake, named the 13-year broods Cicada tredecim."

—— HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.—If we may anticipate success for the autumn show of this Society from any data, it is that contained in its last-issued schedule, which has just reached us. The money prizes offered for cut bloom—in the premier classes say £25—is more than the corresponding class of any other Society, not even excepting the National; besides which, the 1st prize of £10 carries with it the Chairman's Silver Challenge Vase of still more value. The prizes in the second class for cut bloom is also large. A silver challenge cup of the value of 5 guineas is offered in the amateurs' classes, open to those residing within six miles of Hull.

—— MUSHROOMS DANGEROUS UNLESS FRESH.—We learn from the *Farmers' Gazette* that, at the last meeting of the French Academy of Science the question of poisons in edible Mushrooms was discussed, and MM. ROUX and HOUDE presented a report upon some poisonous products which they had

obtained from Mushrooms purchased in the market. Half the Mushrooms were eaten fresh without any bad result, the other half was allowed to putrefy to a slight extent, and were then submitted to treatment with a view to extract the alkaloids. Four were separated, and these, when injected into the animal tissues of guinea-pigs, brought about death with symptoms of intoxication. Those rather numerous persons who prefer Mushrooms in an incipient stage of decomposition, on account of their stronger flavour in that state, should take warning.

—— A FINE COLLECTION OF TULIPS.—Among the numerous fine collections of late Tulips cultivated once by amateurs at Lille, France, one of the best was that of Mons. TRIPIER. This collection lately became the property of Mons. JULES LENGLART, son-in-law of M. TRIPIER, who united it with his own fine collection in 1851. M. LENGLART is a passionate Tulip amateur, and has preserved his collection till now, adding to it everything fine and good to be found in his neighbourhood in France, or Belgium. While all the collections of some importance at Lille have been sold at public auction and dispersed, M. LENGLART kept a standard collection of the best broken varieties, as well as a very splendid collection of bearers, among which are many of his own seedlings. The whole collection has been lately sold to Messrs. E. H. KRELAGE & SON, Haarlem, Holland, and arrived in good condition in their nursery. It will be exhibited next May separately in a flower-bed close to the two large parade beds which, formed this spring, already make a fine show in that nursery.

—— PERIPLOCA GRÆCA.—It is close upon 300 years since this useful Asclepiad was first introduced to British gardens, yet notwithstanding its hardiness and other rare qualities, its occurrence in gardens is exceptional, especially where the modern system of flower and carpet-bedding is carried out to any great extent. This is to be regretted since it could be put to a variety of purposes, such as covering walls or trellis-work. For the latter purpose its rapidity of growth is a great recommendation, enabling it to cover large spaces in a short time. The leaves are a deep shining green, but deciduous, and the flowers, of a rich velvety-purple, are produced in great profusion on extra-axillary cymes. The segments of the corolla are bearded on the inner face, and together with the tail-like appendages of the corona, present on close examination a curious and complicated appearance. A good specimen has been flowering for weeks on the wall of the herbaceous ground at Kew, and is likely to do so for some time. This species is figured in the *Botanical Register*, t. 803, and in the *Flora Græca*, t. 249. We can speak well of it as a hardy climber in the smokiest of town gardens.

—— SOUVENIR DE LA MALMAISON CARNATION.—The splendid lot of this Carnation from Mr. LEOPOLD DE ROTHSCHILD'S garden at Ascott, Bucks, which appeared at the National Society's Rose Show at the Royal Horticultural Society's Garden on the 7th inst., and which for size and variety have never been excelled, have been, we are informed, awarded a Silver Banksian Medal by the latter Society.

—— BROMELIADS.—Herr ANTOINE continues the publication of his magnificent series of plates of Bromeliads. The fifth part now before us contains descriptions and elephant folio illustrations of the following species :—

*Karatas Plumieri*, t. 21, 22.—Leaves tufted, very long, strap-shaped, pointed, remotely spine-toothed at the margins. Inflorescence contracted; floral leaves and bracts minium-red; corolla red.

*Karatas humilis*, t. 23.—Similar in habit to the foregoing but with narrower leaves (1 inch in width at the base). Bracts leaf-like, reddish; corolla lobes red at the tip.

*Karatas fulgens*, t. 24.—Leaves tufted, each a span long, 2—3 inches wide, linear oblong, obtuse, finely spinous, dentate. Inflorescence contracted; bracts scarlet at the base. Calyx scarlet, less than half the length of the corolla, the lobes of which are purplish.

*Karatas purpurea*, t. 25.—Leaves tufted, oblong acute, finely spine-toothed. Inflorescence contracted; bracts purple at the base. Calyx-lobes reddish, oblong, acuminate, half the length of the scarlet corolla.

—— PROTECTION OF THE ALPINE FLORA.—In consequence of the articles which have appeared in the *Times*, and in our own columns, on this subject, we have received a subscription of £2 2s. from Mr. Justice WILLS for the benefit of the "Association pour la Protection des Plantes." We have sundry publications, detailing the objects and procedures of the Society, which will be sent on application.

## SARRACENIA DRUMMONDI.

### THE RIGHT TIME TO POT.

THE varieties of Sarracenia Drummondi, when well managed, are alike remarkable for their singular formation and the beautiful colouring of their long horn-shaped pitchers. The light coloured variety, S. Drummondi alba, is the largest grower, and is a most desirable plant, but the markings on the upper part of the pitchers are not so distinct and clearly defined as they are in S. Drummondi rubra, in which the red spotting on the white ground is so decided as to give it a brighter appearance.

There is a miniature form of the red kind, like it in every way both in shape and colour, only that it does not grow to more than a fourth of the size that the larger form attains. Both the red and the white varieties of S. Drummondi have been long known to cultivators, but from the fact of their not producing their horn-shaped leaves so freely under the treatment usually given them as the other species and varieties do, they are oftener met with destitute of leaves that show the true character of the plants than otherwise. All the kinds of Sarracenias produce one crop of pitchers a year, in spring, except the Drummondi varieties, which differ from the others that they come with two distinct crops each year—in spring, and again in autumn. The natural habit of the plants is that a portion of the leaves which rise from each crown should come plain, or strap-shaped, the remainder, the strongest—usually one or two to each crown—hollow, and furnished with the lid appendage. But, as ordinarily treated, it usually happens that all the spring crop of leaves of the Drummondi varieties come strap-shaped, in which condition, it is needless to say, there is little beauty or interest attached to them. For a good many years after I began to grow Sarracenias this was the way that the Drummondis, both red and white, served me.

Being otherways successful in getting the various kinds unusually strong, I felt dissatisfied at the behaviour of the sorts particularly under notice; as, with their old autumn-formed pitchers in a dingy discoloured state through the summer, when the other sorts were in their best condition, in place of adding to the appearance of the collection, they detracted from it.

To grow Sarracenias with any degree of certainty as to their doing as they ought, they require to be taken wholly out of the old potting soil once a year; for, however lasting in texture it may be, the saturated condition the plants like it to be kept in endangers its becoming sodden and pasty before the end of a second season, in which state the roots die; and it takes years to bring the plants round again.

My practice up to the time named had been to repot the whole stock early in the year, about the end of February. The Drummondi varieties begin to grow considerably earlier than the others. [They come from more southerly latitudes. ED.] The roots of all the kinds are in active motion before top growth begins; consequently at the time I had hitherto potted them the Drummondis were moving. It then occurred to me that the disturbance consequent on shaking out after the roots had commenced growing might be the cause of their failing to make leaves of the right character in spring. To prove whether this was so or not, I again shook out the Drummondis the following summer, about July, when they were wholly at rest, both tops and roots. The result was that in the autumn they made their full complement of horn-shaped leaves, and in spring another crop, individually bigger than ever the autumn set had been. The largest produced by the white variety, which is a stronger grower than the red sort, were over a yard long, stout in proportion, with more than an ordinary amount of white ground colour and spotting. After this the Drummondi section were always potted in summer, and continued to give two crops of leaves of the desired shape each year.

Where Sarracenias do well I know of no more interesting or desirable plants; their singular formation of leaf, and equally singular and beautifully shaped flowers, differing wholly, as they do, from all other things, never fail to make them attractive. In addition to the curious shape of the flowers, common to all the species and varieties, those of S. purpurea, and the seedling varieties that have sprung from it, are of a beautiful deep crimson colour, glossy and smooth in texture, whilst those of S. rubra, which are proportionately smaller than those of S. purpurea, besides their leaf colouring, are as sweet and highly perfumed as Violets. Most of the other kinds produce pale yellow or sulphur-coloured flowers. Whilst Sarracenias are small, and have not acquired enough strength, it is well to remove the flowers as soon as they appear, as this naturally helps to strengthen them. Little account has hitherto been taken of the bloom of Sarracenias; but when the plants get strong the flowers are by no means the least attractive feature they present, as the fine series of illustrations in this journal some year or two since may testify.

The condition in which these plants are often met with is not such as is likely to induce those who have not seen them when fairly managed to commence to grow them. Many suppose their cultivation is difficult, but su is not the case. I cannot admit that any plant is difficult to grow that, like the Sarracenias, requires nothing more than continuous routine treatment, with little more variation than the difference between the summer and the winter season necessitates.

There need be no hesitation about the degree of dryness the soil must be allowed to get to at different seasons of the year, such as requires to be studied with a good many plants. The soil wants to be kept sopping wet from the time the roots begin to stir until late in autumn; in the winter less moist, but never dry. To be repotted in wholly new soil once a year at the times stated; the plants to be kept close to the glass, with no more shade than will keep the sun from burning the leaves. A temperature of 48° to 50° in the night in winter, about 60° at night during summer, and a proportionate rise in the day, according to the time of the year and state of the weather, and keeping perfectly free from aphides and thrips, is all they want. So treated they will go on increasing in size and vigour, with an absence of the uncertainty attached to many kinds of plants.

The fact of their only requiring to be kept in an intermediate temperature at all seasons commends Sarracenias to many who have not command of heat enough to grow Nepenthes, to which they are little, if any inferior, when all their merits are taken into account. *T. B.*

## MANURIAL USES OF TAN.

HAS spent tan any manurial value? Applied to grass land, either in a fresh or rotten state, it gives no good result at all—its presence seems, if anything, detrimental. Does it contain any essential plant food? and if so, do certain deleterious properties counteract any benefit that might otherwise accrue from that plant food? At many leather-tanning establishments throughout the country vast accumulations of spent tan exist, for which there seems to be difficulty in finding suitable use; yet I am impressed with the idea that it should have its uses in aiding fertility in the soil, or at least in awakening dormant fertility in close difficultly workable soils.

Poor land, whether of the light dry sandy or extremely stiff clayey order, is greatly benefited by admixture with humus, although the humus contain no plant food in its composition; for humus certainly tends to modify certain defects in both these kinds of land; it lends a retentiveness of moisture to the dry sandy, and tends to keep open and pervious to water the stiff close clays, by both mechanical and chemical action. That pure humus is not, and does not contain, a plant food, such as plants take in by means of their roots, has long since been demonstrated by Liebig. Usually, however, humus is by no means (chemically) pure, and it is considered that great benefit is derived from it by plants, when, on its decay, it yields up these impurities (probably valuable plant foods) in that soluble condition in which they (the plants) can make use of them. What we now want to know is—Is tan, when fully rotted, pure or impure humus? and, if the latter, are the impurities contained in such humus good plant food, or merely harmless, or really deleterious matters?

Till science has thrown more light on the subject, I hold that quite rotten tan is humus, and it is well known that many kinds of soil are, as before stated, much improved in condition and consequent productiveness, by having humus mixed into them, although that humus contains no plant food whatever.

I have had large heaps of tan placed close to a dead wall, and whenever the latter has become full the contents have been pumped out on to the tan, the water subsequently draining away, while the virtue, or at least some of it, remained in the tan.

This saturated tan applied to grass land appears to give very good results so far. In the absence of scientifically conducted experiments, however, it is of

course impossible for me to judge whether all the goodness out of the dead-well stuff is retained by means of the tan, or even so much of it as would be retained by using in a similar manner charcoal, dried peat, or earth of some kind. I have also for some years used tan mixed with ordinary farmyard manure, rotted down together, as a mulching for Roses and fruit trees in hot dry soil, and the result has apparently been very beneficial. I imagine ground coprolites mixed intimately with tan by being thrown on a heap thereof, and at the same time turning the tan well over, would shortly have the phosphates rendered as soluble as in superphosphate, and in the above-named soils (especially where phosphoric acid is deficient) would then make a very valuable manure. Kainit and other potash manures would also have their solubility much increased, and so become much more valuable by being mixed with the tan some time before its application to land.

If any of your correspondents learned in scientific agri-horticulture would give us, through the medium of your columns, their opinions on this subject they would, I feel sure, interest a large class of your readers. *J. E. E.*

## THE HAY CROP.

AT the end of April of the present year it was confidently expected that we should gather in an exceedingly abundant hay crop, but the result once again proves how very much the cultivator of the soil is dependent upon the weather for his reward.

Although May gave, according to the Rothamsted rain-gauge, the heaviest rainfall that has occurred since the year 1879, yet the cold atmosphere which accompanied it counteracted to a great extent its beneficial effects upon the mixed herbage of our grasslands.

The month of June, while giving a more than average amount of rain, experienced exceedingly variable temperature, the night air being frequently not many degrees above the freezing-point of water. The variation in warmth between two succeeding days, the 24th and 25th, was 18°.6, the one registering 77°.8, and the other 59°.2.

These great extremes are very trying to vegetation, and accordingly we find from Sir J. B. Lawes' experimental hay at Rothamsted, which has just been secured in capital condition, that the general result of this year's crop is below the average of the past twenty years. Without manure the produce per acre was 19¼ cwt. This is about 3 cwt. more than the same plot gave last year, but is 2 cwt. below the average return.

The portion of ground which this season gave the heaviest yield of hay per acre was manured with mixed mineral manure and 600 lb. of ammonium salts. The result of this heavy dressing of artificial manure was 56¾ cwt. of hay, being 13½ cwt. less than the same quantity of manure gave last year, and is 5¾ cwt. per acre below the average for this plot.

Between these two extremes there are twenty plots, each receiving a different manurial application, and under each condition of manure the yield of hay is deficient, ranging from 1 cwt. to 9 cwt. per acre below the average record.

The leguminous plants—the Clovers, Vetchlings, and Bird's-foot Trefoil—have this season made extraordinary growth in the mixed herbage of our meadows, more particularly Lathyrus pratensis and Lotus corniculatus; so that while the bulk is somewhat small, the quality of the hay is generally excellent, and fully makes up for the deficient yield. *J. W.*, *Harpenden, July* 13.

## GALLS ON THE ROOTS OF ORCHIDS.

THERE will, I trust, be no need for apology for referring the readers of the *Gardeners' Chronicle* to an article which was published in that work, in 1869, p. 1230, on two kinds of insects found between the leaves of a bud of an exotic species of Orchis by Mr. Bateman, one of which was evidently the larva of some kind of weevil (Curculio sp ?), and the others were immature specimens of a minute hymenopterous insect, to which I applied the name of Isosoma Orchidearum, belonging to a very numerous family, Chalcididæ, of which the species had theretofore been observed only as parasites in the bodies of other insects, but which seemed to me (on the authority of observations made by the eminent American entomologists, Harris, Riley, and Walsh) to be plant-feeders. This article was supplemented by me in a more extended memoir published in the *Transactions of the Entomological Society* of London, in which my opinion, as stated above, was maintained.

Several naturalists, including Mr. McLachlan, dissented from my view of the subject, considering that the Isosomæ agreed with other Eurytomides (to which group the Isosomæ were structurally referrible) in being parasites on the beetles, or some other insects infesting the Orchids; and in an article which appeared in the *Gardening World* on May 16, 1885, Mr. McLachlan writes concerning Isosoma orchidearum, "There is some amount of mystery attached to it. The Isosoma

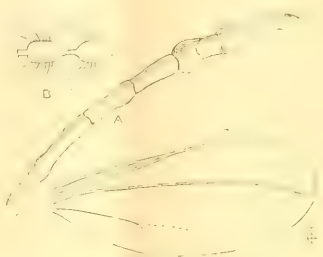


FIG. ... ROOT OF CATTLEYA, WITH DETAILS OF INSECT STRUCTURE.

belongs to a group of Hymenoptera, parasitic in the larvæ of other insects, but some maintain that in this case the habit is abandoned, and that the Hymenoptera [Isosoma] itself is the true cause of the damage. Since Professor Westwood's paper was published, I have myself bred, from swellings on the roots of Cattleya, both the Isosoma and minute midges of the dipterous family Cecidomyiidæ; hence I think it highly probable that Isosoma is really parasitic on the midge, and that it is the latter that does the damage. What was the colour of the larvæ found within swollen buds of Cattleyas in company with the Isosomæ? If reddish or orange they are pretty sure to be those of the midge." The Editor adds:—"The larvæ are not red, but pure white," which would imply that they are the larvæ of the Isosomæ.

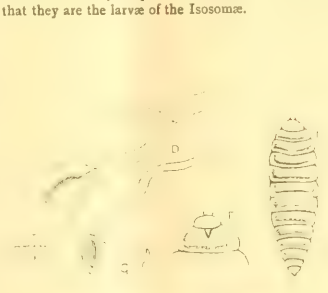


FIG. ... A ... ROOT ... INSECT ...

Mr. McLachlan was good enough to give me specimens of the infested root of the Cattleya (fig. A in the accompanying woodcut, fig. 19), showing two galls in the upper part of the root. He also gave me a specimen of each sex of the very minute midge itself. Of the male I have here represented, in fig. B, one of the binodose joints of the antennæ, together with one of the wings (fig. C), in which the lower or posterior vein (*) becomes scarcely visible at about half of its ordinary distance from the base of the wing. These figures are sufficient to prove that these Cecidomyiæ were inhabitants of the root-galls of the Cattleya, although on opening the larger upper gall in fig A, the interior was found to be solid, and untenanted by any insect.

I had, however, long previously been able to make another observation on the inhabitant of a root-gall found at the end of the rootlets of a Dendrobium imported in June, 1878, by Mr. G. E. Cox, of Leyton. These galls, represented in fig. 19, D, are about the size of grains of Wheat, and on opening one of them (X) a minute oval cell was found, tenanted by a small orange-yellow larva (E), one eighth of an inch long, and which was clearly referable—as proved by the structure of the head (F), exhibiting the little corneous, forked, refractile implement shown separately (G) within the underside of the front of the segment next to the head—to one of the little midges of the genus Cecidomyia. In this case, therefore, it is clear that the gall was the product of the gall-midge, and that the latter had not been supplanted by an Isosoma.

Since my memoir was published there have, however, appeared several further notices on the Isosoma, both in America and Russia, fully confirming the existence of Isosomæ where no true gall-flies, either midges or Cynipidæ, occurred. And in our own country I have the opinion of a very competent observer, Mr. Thomas Whitmarsh, of Wilton, near Salisbury, who has examined "thousands" of specimens of "joint worms" found in grass, and which the structure of the mouth-organs clearly proved that they were mandibulated larvæ of Isosomæ and not those of a midge. *I. O. W.*, *Oxford, May* 26.

## HOME CORRESPONDENCE.

**Raising Roses from Eyes.**—As this mode of raising Roses has of late obtained some slight share of the attention it deserves, it is likely that a hint as to one point in the practice may be useful. About the year 1856 I first adopted the practice, and very soon acquired expertness in it, so that from a half-ripe rod I could obtain as many plants as the leaves on the rod, save the youngest at the extremity. By making a fair cutting of the top the whole of the rod was utilised, and the result was a batch of own-root Roses with a vigour of life and general character approximating to seedlings. I explained by means of a diagram the right way to do it in the *Floral World* of July, 1860, and subsequently in my *Amateurs' Rose Book*, p. 52. The bud is cut in precisely the same as for budding, but a portion of the leaf is retained and the bud is not peeled; in other words, wood and bark remain intact, to form a disc from which roots will in due time be emitted. The newer practitioners of the art remove the leaf entirely. Now we know where to look for the proof of the pudding, and I shall leave all the newer practitioners to go their own way. But having propagated from eyes with leaves and eyes without leaves, I can say that the leaf hastens the rooting process. But with entire leaves it is impossible to pack the eyes closely in the cutting boxes, therefore I remove by a clip with scissors all but the two lowest leaflets, and if need be clip off the halves of them. When dibbed into sand just deep enough to hold them and placed on a gentle bottom-heat, the rooting is soon accomplished, and the bud rises in a beautiful healthy growth. It is the best of all modes of propagating Roses. *Shirley Hibberd.*

**The late Mr. Rowe: an Appeal**—About three months since, I read in your paper an account of the death of Mr. Rowe, of Northampton, florist, late gardener to the Lady Clifden, and formerly of Roehampton, where he was well known and much respected as a gardener. At his death he left a widow and four children, who have since had a hard struggle for a living. A short time since, as you have already stated, the poor widow was taken suddenly ill from the effects of sunstroke and died in less than two hours, thus leaving the four children in a most destitute state, three of them quite unable to do anything for their support. The eldest, a girl, is apprenticed to the dressmaking, and is of course quite unable to help to support the other three. My object in writing to you is to ask aid for these poor orphans, by publishing this letter in order to enlist the sympathy of my fellow gardeners for these poor helpless children. From my own knowledge of gardeners generally, I believe this appeal will not be made in vain. I therefore trust, for humanity's sake, that every gardener on reading this letter will at once contribute any small sum they can spare to so laudable an object. I have great pleasure in adding that the children are now under the care of the Rev. F. S. Thornton, Vicar of St. Sepulchre's, Northampton, who will be pleased to receive any

small contributions sent to him on behalf of these poor children, and will see the same properly applied to their use. *H. Beasley, Gardener, Earls Barton, Northampton.* [We have already received from H. G. Gribble 5*s.*, and from H. Maycock 2*s.* 6*d.*, and shall be happy to forward any subscriptions we may receive to the Rev. J. S. Thornton, on behalf of these orphans. ED.]

**Mildness of Last Winter.**—As evidence of the mildness of last winter, it may be interesting to mention that there are now freely blooming in the borders of my garden in Shropshire, and in an exposed situation, some dozens of Calceolarias and several Purple King Verbenas which have stood the winter without the least protection. *W. H. O. S.*

**National Carnation and Picotee Society (Southern Section).**—The ninth exhibition of the above Society will be held in the Conservatory of the Royal Horticultural Society on July 28. The Treasurer (Mr. H. A. Rolt, 170, Hartfield Road, New Wimbledon), will be glad to receive subscriptions or donations to make the exhibition a financial success. He requires £20 more than he has yet received. The prizes have to be paid immediately after the exhibition. A few friends came forward and generously subscribed the funds to make the Auricula exhibition a financial success. The committee hope that the more popular Carnation exhibition may receive at least equal support. A few old subscribers annually fall off, but if each member would obtain one new subscriber the success of the exhibition would be assured. Intending exhibitors will please to send their entries to Mr. Barron, Royal Horticultural Society, South Kensington, at least four clear days before the 28th. *J. Douglas, Hon. Sec., Great Gearies, Ilford.*

**Propagation of Lettuce.**—It may be an object with some to propagate Lettuces without waiting for their more tedious production by seed. Everybody knows that when a Lettuce is cut the stump sends up a parcel of shoots; but it may not be known to everyone that each of these shoots possesses its own peculiar root, and that by slipping it off, with a portion of the skin and stalk below it, a perfect Lettuce plant will be obtained. It is said Cabbages are thus propagated in India. A Lettuce, however, has much the advantage of a Cabbage in this matter; for it is much easier to slip off with the Lettuce shoot a small portion of the old root, which may probably assist the rooting of the plant. We have frequently propagated Lettuces in this way, and the result has been most satisfactory. We proceed thus:—We take up the stump when the shoots are about an inch long; but we have often taken some even 3 or 4 inches long. We slice the stump for about an inch or so down, so as to form a small, triangular-shaped slice of old stem to each shoot, and tear this off so as to bring a small portion of the old root with it. We dibble them out on well manured ground, about twice as thick as we propose them to stand, lest there should be any failure; and as we can transplant the spare ones afterwards, we put them in pretty deep, so as to have the entire stem slice below the surface, and give them plenty of water. Of those so treated not one will fail. "*Farmers' Gazette.*"

**Children's Exhibitions.**—It is now a somewhat common practice to offer prizes at horticultural exhibitions for collections and bouquets of wild flowers gathered and made-up by children. This is something gained, but it is by no means all that should be sought, and a few days ago the Rev. George Henslow, when speaking at the luncheon in connection with the summer exhibition of the Ealing, Acton, and Hanwell Horticultural Society, in Gunnersbury Park, highly praised the bouquets made up by children, which he regarded as a very interesting collection, and one in which he felt a peculiar interest, for thirty years ago his father, in Suffolk, used to teach the children in the National School the elements of botany, so that they not only made bouquets of wild flowers, but they would tell the name of every plant and the structure of every flower in the bouquet. [The late Professor Henslow's letters on this subject were published in this journal at the time, and excited great attention. ED.] This point he enforced as one of great practical importance. Some might say it was superfluous to teach children such things, and ask—What is the good? Practical good, however, had come of such teaching. When he had a curacy in the South of England he followed his father's practice, and the children, instead of getting into mischief in the streets, were increasing their intelligence by going in search of wild flowers for prizes. If any one would teach the exhibitors of the wild flower bouquets the elements of botany a great deal of practical good would come of it. They might be taught the uses of plants, that Aconite was a deadly poison, and that any member of the Wallflower family of plants could be eaten without harm. This knowledge would be very useful, for he had known many children poisoned by eating the berries of Belladonna. One instance where such teaching had led to advancement in life could be given. Mr. Maries, who had been a collector of plants in Japan for Mr. Veitch, told him some time since that his interest in flowers dated from the time when he learned the elements of botany at his (the speaker's) school in Warwickshire, and that he had found the knowledge he there gained of the greatest use to him in gardening, and in his botanical journeyings. *R. D.*

**Peaches at Port Elliot, Cornwall.**—Mr. Knox, who has held for many years the position of gardener to the Earl of St. Germans at Port Elliot, Cornwall, is well known as a good fruit grower, and the Peach-house there is similar in style to the one at Creedy Park, recently described in this journal. The dimensions of the early house are about 40 feet by 8 feet, and on the back wall are trained Tea Roses, which supply abundance of flowers from early spring. There are three Peach trees in the house—two of Royal George, and one of Violette Hâtive; these are planted in the front of the border, and trained parallel to the lean-to roof, being 16 or 18 inches from the glass. The crop numbered about 350 large fruits, some of them measuring 9 and 10 inches round. *W. Napper.*

**Exhibiting Orchids.**—As a grower and also an exhibitor of Orchids I read with much interest the remarks at p. 16 on this subject. The writer is, like myself, against the system of making up Orchids on purpose to show them; but there are, it is needless to say, two sides to this question. The managers of flower shows cannot be expected to object to made-up specimens, as the larger they are so much the greater is the display. And if amateurs and the trade like to risk any probable injury to their plants it is no one's business but their own. As a practical illustration I might allude to the schedule issued by the managers of the Regent's Park exhibition. The exhibitors have a considerable degree of freedom; they are not required to show distinct species, or even varieties of species. In one class no allusion is made to specimens massed together, but exhibitors please themselves whether they will exhibit in that way or show single specimens, or a mixture of both. In another class *bonâ fide* specimens only are admitted. This arrangement I greatly approve of, and hope it will be continued in future. The suggestion to provide a class for fifty Orchids is one that I hope managers of flower shows will not adopt. Such a class would bring the best growers to the front it is said. This is very doubtful. Who could show such a large number? Very few indeed. It would be the means of bringing some very poor specimens to the front; in that case the Maidenhair Ferns would be useful to hide the blemishes. Some exhibitors of Orchids do not grow Maidenhair Ferns by the half hundred. I do not; and protest against being required to exhibit Ferns or any other plants because I am required to show Orchids. Masdevallias may be exhibited in square deal trays; but such an infringement of good taste never occurred at any London show, and on this subject I may remark that Masdevallias are not injured by being turned out of the pots in which they are grown and used to make up a large specimen. Cypripediums may be used in the same way without being injured; so also may other species and varieties of Orchids. It must not be supposed, because I say this, that I advocate making up masses of Orchids. I do not approve of it, and rarely ever do it. The writer of the article in question is drawing upon his imagination, when he alludes to the annoyance caused to master and man by the ruthless manner in which their plants have been treated. It is also begging the question to write of "thirty spikes of Odontoglossum Alexandræ all muddled together in a pan a yard across," "a score of Masdevallias in a deal tray," or a "heap of Oncidium concolor fixed round an immense block." And further, I cannot understand how "a painstaking and careful man can be placed at any disadvantage because he cannot produce anything like the plants at the show." This is the old grievance trotted out once more. It is very unfair too to write of the present manner of exhibiting "as producing false impressions," and an insult to exhibitors to say that the Orchids are now "mostly staged with but little idea or attempt at beauty of arrangement or effective display." Those who have little or no experience of exhibiting themselves are always ready enough with their advice. The plan of exhibiting a large number of Orchids mixed with Ferns has been tried at the Crystal Palace, and the result has not been such as to recommend its adoption anywhere else. *Jas. Douglas, Great Gearies, Ilford.*

**Dicksonia antarctica and Phormium.**—Two fine specimens of the former enjoy sheltered positions in the gardens of Trewidden, Cornwall, and great masses of Phormium tenax are now sending up their tall flower-spikes. *W. N.* [The latter plant is in flower in the open at Kew. ED.]

**Platanus orientalis.**—In the public park of Buda Pest, where a national exhibition is now being held, there are two beautiful trees (of I should suppose forty or fifty years old) of a variegated Platanus orientalis. Can you tell me where young plants can be bought? They are most beautiful. *W. H. M., July* 11. [Write to any leading nurseryman. ED.]

**Lasiandra macrantha floribunda on the Back Wall of a Vinery.**—At Clowance, near Camborne, the home of the Rev. H. Molesworth St. Aubyn, on the back wall of the succession vinery is an exceptional specimen of the Lasiandra macrantha floribunda. All its growths are tied in, and the space covered is about 16 feet by 9 feet. The floriferous character of this beautiful plant when properly cultivated is not generally known among gardeners, and the plant under notice is no exception, there being at the time of my visit abundance of its flowers on the point of bursting; in fact, every shoot is set with bloom-buds. Mr. Foot, the gardener there, has experienced no difficulty whatever with this plant when grown in a vinery, and it does not, he says, interfere with the well-being of the Grapes. It supplies plenty of its lovely blooms from July until far into the winter, and they are much appreciated. *W. Napper.*

# Reports of Societies.

## ROYAL HORTICULTURAL: July 14.

THIS last meeting was the occasion of a very interesting display of fruit, flowers, and vegetables. The tables were, however, not so loaded with the productions of the garden as will be the case when autumn arrives with its abundance of mature fruits, roots, and other products of the kitchen garden, orchard, and forcing-house.

Plants for competition, because of the restriction imposed as to size of pots, were small, and it must be said, wanting in novelty; but the collections of hardy plants from well known growers, were of a varied and charming description, especially noticeable being Lilies and Calochortus.

### Scientific Committee.

A. Grote, Esq., in the chair.

#### FUNGOID DISEASES IN FRUIT TREES.

A communication was received, through Sir J. D. Hooker, from Mr. T. Kirk, Wellington, New Zealand, asking for advice as to remedial measures. In some districts the fruit trees are being destroyed by the mycelium of a ground fungus—a small Puffball—though the author suspects that several Agarics affect them. When the ravages are most serious the reproductive state is but rarely developed. It first appears as a circular patch, in which all vegetation (as in fruit trees, Oaks, Walnuts, grass, Sorrel, Strawberries, &c.) is more or less "blighted," the plants exhibiting a withered appearance, the leaves becoming slightly curled, droop and fall long before their time, and the plant dies. The roots are more or less covered with mycelium. The effects extend in a most singular fashion, travelling half-way across a garden or orchard from one side only, at others extending in all directions. It is most fatal to fruit trees. It is almost exclusively confined to light soils, on which Fern (Pteris aquilina) has grown. Damp or dry soils have no attractions for it. It occurs abundantly in the decaying rhizomes of the Fern, transferring its attentions to fruit trees whenever the opportunity is afforded. The first parts on which the affection shows itself is the juncture of root and stem. The bark becomes absolutely rotten

when permeated by the mycelium, and emits a nauseous odour. Plum trees usually show but little mycelium as compared with Apples, but the trunk is more obviously affected, and exudes gum freely. Experiments are being carried out in the following directions :—(1) Soaking the soil with tar-water and dressing the affected parts with the same ; (2) dressing the soil with soot ; (3) with sulphur ; (4) with mild brine washes, both for trees and soil. So far the tar-water seemed the most effective, but the author was inclined to think that sulphur will have the most permanent effect.

PEACH BLIGHT.

The author adds, that in all parts of the country the Peach is dying wholesale, but the cause is most obscure. The trees appear to flower with their accustomed luxuriance, and the fruit to set as usual. If a sudden change of temperature, or a severe frost has been experienced during the flowering time, the fruit does not swell, the leaves make their appearance readily and fall quickly—minute orange coloured blotches are seen on the twigs. These become confluent and black, and then the buds decay. At this stage the plant may die, or if the season prove favourable, a weak autumn growth may be made, and new leaves developed, tassel-like, at the tips of the branches ; but a renewed attack the following spring proves fatal, and the plant dies. Plants one year from the seed are attacked as readily as the oldest. Occasionally a tree partially sheltered has suffered less than its neighbour or has escaped entirely ; while two kinds appear to resist the disease more than others, viz, Cornet and Salway, but they are certainly not blight-proof by any means.

In the absence of material the members of the Scientific Committee did not feel competent to pass an opinion on the subject.

POPPIES, VARS.

Mr. Smee exhibited seedling Poppies of P. Rhœas with wedge-shaped black patches and white borders at the base ; they had originated from the common form.

AMORPHOPHALLUS (HYDROSME).

Mr. Ridley exhibited a seedling he had raised from a fruit from Gambia, West Africa.

PICEA POLITA.

Dr. Masters exhibited a spray of this Japanese Conifer with cones, received from Mr. Veitch.

ELMS DISEASED.

Dr. Masters mentioned the fact of an avenue of Elms fifteen years old, in Guernsey, of which some thirty or forty trees were rapidly dying without adequate cause being apparent. Diseased branches were referred to Mr. Murray for examination and report.

PLANTS EXHIBITED.

Mr. Lynch brought from the Botanic Garden, Cambridge, a fine flowering spike of Yucca angustifolia ; the anthers appeared to be abortive, and it never set seed. A spray of Pelargonium Endlicherianum, from Australia ; Jasminum angulare var. glabratum, a plant new to cultivation, from the Cape ; Nelumbium luteum, from North America. Dr. Masters exhibited from Mr. Ware an umbel of Eurya ngium (Ferula) Sumbul, remarkable for the acrid and musk-scented juice.

CLOVER, VIRESCENT.

Mr. Houston exhibited specimens of a not uncommon form, in which the ovules were particularly well developed in the form of leaves.

POTENTILLA REPTANS WITH UNI- TO SEPTEMFOLIATE LEAVES.

The Rev. G. Henslow exhibited specimens of Cinquefoil, showing transitional states from one-foliate leaves, through ternate and quinque-foliate to seven-foliate forms.

OX-EYE DAISY.

Mr. Smith sent specimens in which the ray-florets were tubular, like those of Centaurea, and not ligulate, as usual.

PHEASANTS POISONED BY FUNGI.

The following communications were received from Mr. W. G. Smith :—"A week or two ago Mr. Henry Mills, of The Gardens, Enys, Penryn, Cornwall, sent me an example of a fungus which had poisoned pheasants : the gamekeeper had cut open the pheasants' crops, and found pieces of the fungi in them. The birds swell, and are soon dead. On asking Mr. Mills to secure other specimens of the fungi he could not find them, but, strange to say, the pheasants, with superior eyes for such things, found them easily, for other birds died, and pieces were again found in their crops. It is remarkable that sheep and lambs have died suddenly in the same field, as well as in an adjoining field. Whether the sheep have died from the effects of the fungi is uncertain, but sheep will, no doubt, sometimes eat fungi. I have seen sheep eat Mushrooms. I hope to be able to name the species of Agaricus [and Champignons. ED.] with certainty at the next meeting of the Scientific Committee, as I have just received fresh and better material. I am, however, able to point out the series to which it belongs. It is one of the Hyporhodii, or pink-spored Agarics, a series limited in Britain to a comparatively small number of species. The Agaric is a small one, about 1 inch in diameter, with characteristic nodular spores. It is probable an Entoloma, close to A. placenta, A. helodes, and A. repandus. A close ally of these, viz., A. sinuatus, once put me to considerable inconvenience and annoyance."

RESTING-SPORES OF PERONOSPORA PYGMÆA.

"A correspondent, Mr. George Brebner, of Aberdeen, has sent me a large supply of the oospores of this Peronospora detected by him in leaves of Anemone nemorosa. He has also forwarded a drawing and a microscopic slide showing the oospores *in situ*. In the slide the oospores can be distinctly seen attached to the same mycelial threads as the conidiophores. Mr. Brebner states that Professor Trail has recently lighted on the oospores of Peronospora arborescens in the leaves of Papaver Argemone. It is a mistake to suppose that oospores of Peronospora are rare ; they are easily found by competent observers ; and when seen on the same threads as the conidiophores—as by myself in Peronospora infestans, and by Mr. Brebner in P. pygmæa—no unprejudiced person can doubt their true nature."

## Floral Committee.

Present : Shirley Hibberd, Esq., in the chair ; and Messrs. Henslow, Baines, Bennett, Bealby, Wilks, Kinghorne, J. James, Herbst, G. F. Wilson, Duffield, Noble, J. Fraser, Dominy, Pollett, J. O'Brien, Hill, Llewellyn, Douglas, Hudson, Walker.

COMPETITIVE GROUPS (OPEN).

For the best nine distinct Dracænas.—1st, Mr. J. Hudson, gr. to H. J. Atkinson, Esq., M.P., Gunnersbury House, with plants stocky and well foliaged ; the green and white Regina Leopoldi, bronze and crimson Amabilis Baptisti Mooreana, a better plant and shower than some others ; Guilfoylei being the best of them ; 2d, Mr. H James, Lower Norwood ; 3d, Mr. A. Luff, gr. to R. R. Hyatt, Esq., Leigham Court Road, Streatham.

In the competition for nine distinct Crotons Mr. Hudson took the 1st prize, with C. aneitumensis, light yellow and green, and not variety ; Disraeli, Andreanum, &c. ; 2d, Mr. Luff, in whose group was the singular-looking Hankeri, with foliage half yellow, half green.

A few Nepenthes and Sarracenias were shown by Mr. H James and Mr Luff, who were awarded respectively 1st and 2d prizes in the order of their names.

In the class for twelve fine-foliaged plants, Mr. H. James took the 1st and only prize awarded, his specimens consisting of well-known species and varieties. We noticed Pandanus utilis, Dieffenbachia Jenmanni, Maranta Veitchii, Areca rubra, and Cocos Weddelliana.

Mr. Hudson took 1st prize in the amateurs' class for nine distinct fine-foliaged plants—in the collection there being several small well furnished Palms, a good plant of Asparagus plumosus and Croton Warneri, a distinct and singular variety with twisted pendulous leaves ; 2d, Mr. Luff, whose lot contained three varieties of Asparagus ; 3d, Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, Ealing.

Coleus, six distinct, were shown by Mr. C. Waite, gr. to Colonel Talbot, Glenhurst, Esher, 1st ; Mr Luff 2d ; Sunset and Butterfly in the lot shown by Mr. Waite being the prettiest varieties.

Adiantums, six distinct, were exhibited by Mr. Chadwick, 1st, and Mr. Luff 2d, The plants were in either instance nicely grown, small furnishing material, consisting of such varieties as decorum, gracillimum, concinnum latum, pentadactylon, tenerum, &c.

Mr. Ware, Tottenham, showed twelve cut spikes of Phlox, and obtained the 1st prize. There were some bright and distinct colours amongst them, viz., Colonel Flatter, purplish-rose ; Madame Marie Senson, crimson ; Kinnaird, a soft rose and white ; Miss Robertson, a very fine white ; and Madame de Stael, pink with crimson eye. Mr. Ware took also 1st prize for six Liliums, cut spikes, the species comprising Humboldti, a splendid yellow with crimson spots ; Martagon dalmaticum, canadense rubrum, small orange-coloured species with crimson spots, flowers pendulous ; Browni, Parryi, and testaceum. Messrs. Paul & Son, Cheshunt, were 2d ; and Mr. Quarterman, gr. to A. S. Smith, Esq., Silvermere, Cobham, 3d. Mr. Bateman, Twisden Road, N., took the prize in Messrs. Paul & Son's Special Class for the best collection of Roses raised at their nursery.

HARDY HERBACEOUS PERENNIALS.

Mr. Ware staged an immense quantity of these, occupying a table nearly half the length of the conservatory. The genus Lilium was in great numbers, and the spikes, being cut and put up in profusion, gave a fine idea of their decorative value in masses or clumps. Brownii, longiflorum, Sieboldi, candidum speciosum, vars. of pardalinum, the soft yellow pallidiflorum, philippense, Humboldti and rubescens were amongst the more striking kinds ; Iris Kæmpferi, Alstromerias, Veronicas, Pentstemons, Hemerocallis, Funkias, and Papaver nudicaule. Messrs. Paul & Son took 2d prize for herbaceous perennials ; and Mr. E. Morse, Nurseries, Epsom the 3d.

Mr. J. Hill, gr. to G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire, grouped a splendid lot of Odontoglossum vexillarium, consisting of between sixty and seventy specimens, eight of them being in 15-inch pots ; all of them, large and small, profusely bloomed, and comprised flowers of several shades of colour, from faintly shaded white to deep rose, the size of flower corresponding to their high state of cultivation. The trifling recognition of a Silver-gilt Banksian Medal was awarded them.

A pretty collection of cut blooms of mixed Roses came from Messrs. Veitch & Sons, Chelsea, consisting of well approved kinds. A box of twenty-four blooms of La France was greatly admired. A Silver Medal was awarded.

Messrs. Lee & Son had a similar award for a group of shrubs and Roses suitably placed on the terrace in the conservatory.

Messrs. Kelway received a Bronze Medal for hardy flowers in a cut state, such as Gaillardias, Tea Roses, Delphiniums, also for some Petunias, &c.

CERTIFICATED PLANTS.

Mr. Hill, Tring Park, showed some spikes of the striking Renanthera coccinea (Storeyi), the flowers of which are brilliant scarlet, the upper limbs being barred with yellow faintly ; the spike, as in Renantheras generally, being of considerable length.

R. H. Measures, Esq., showed a variety of Odontoglossum vexillarium, named Measuresii, having bloom of a pure white, and crest bright yellow—a pretty variation from the type.

Mr. R. Owen, Floral Nursery, Maidenhead, brought a new Begonia, named General Gordon, cherry-red in colour, semi-globular in form, and double petalled.

Mr. W. Bealby, The Laurels, Roehampton, had a white zonal Pelargonium, Blanc Parfait, pure white, nicely formed, regular pip, and possessing a few extra petals, inferior in size to the normal ones.

Messrs. Paul & Son showed a Privet, Ligustrum sinense var. floribundum, a plant nearly 6 feet high, literally smothered with its white flowers. They also showed the spotted Rose, Pride of Reigate, and Rose Madame Norman Neruda.

Messrs. Henderson & Son, nurserymen, Maida Vale, exhibited Alocasia Hendersoni, a plant with sagittate leaves, of dark metallic hue.

MISCELLANEOUS PLANTS.

The New Plant and Bulb Company, Colchester, showed some fine handsome varieties of Calochortus, now at their best ; also Lilium auranticum verum, of a pure orange colour ; and L. elegans "Benny."

From Mr. Turner, the Slough Nurseries, came a useful-looking white Carnation, Rose Molyneux, a fairly good flower.

Messrs. Carter & Co., Holborn, London, showed Sweet Peas in many separate shades of colour, and a new Silene pendula compacta, much more compact and sturdy than the old S. pendula which was shown alongside for the purpose of comparison. Rhodanthe Manglesii alba shown by this firm is a useful variety.

Messrs. Henderson & Son showed Hæmanthus Katherinæ with a corymb of cerise blossom, and a collection of Caladiums in small pots.

Mr. R. Dean, Ealing, showed New Giant Ten-week Stock grown from seed sown in April. The spikes were large and stout, at the same time compact. He showed likewise Mauve Beauty and Bedfont Crimson Stocks—good strains.

Mr. King, Rousham, Aylesbury, brought Coleus Pride of the Market, a prettily marked, compact growing kind.

Le Comte de Germiny, Rouen, sent Cattleya Warscewiczii Sanderiana, a spike of seven very big flowers of bright purple.

Messrs. Sander & Co., St. Albans, had a new Saccolabium as yet unnamed, the flowers pure white, all but the lip, which is pale lilac, the flower-spike on the weak plant seen not being more than 4 inches long. Mr. Salter, Selborne, Streatham, sent blooms of Sobralia macrantha splendens, a trifle deeper in colour than S. macrantha. A nice white Pelargonium of the "Regal" section, of good substance and form, came from Mr. T. Bunyard, nurseryman, Ashford, Kent. From R. H. Measures, Esq., came Lycaste Deppei viridis, Odontoglossum cristatellum, the latter with small dark brown flowers, more curious than ornamental, on stout spikes of 1½ foot high ; Anguloa Measuresii, of cream suffused with rose externally, and densely spotted with minute crimson interiorly. Messrs. Veitch & Sons showed their fine Andromeda speciosa var. cassinefolia, the short shoots densely covered with large white bell-shaped blossoms ; Clematis coccinea and C. flammula rubra marginata. From G. N. Wyatt, Esq., Lake House, Cheltenham, was sent Vanda Denisoniana hebraica, a singular looking dirty white blossom with a green lip ; and Brassia Lyalli, a flower with green sepals and petals, the lip being yellow, spotted with dark brown. Mr. B. S. Williams showed the same species of Orchid. Messrs. Heath & Son, Cheltenham, showed Odontoglossum vexillarium giganteum, bright and large as the name denotes ; the centre being white. From W. Cobb, Esq., Silverdale Lodge, Sydenham, came Odontoglossum Cobbianum, having the upper petals of a pink colour, whilst the under ones are white. Mr. Munro, from far away Dingwall, sent seedlings of Pansies of excellent quality ; the margined blooms being very fine.

FIRST-CLASS CERTIFICATES.

To R. H. Measures, Esq., for Odontoglossum vexillarium Measuresii.

To Messrs. Henderson & Son, for Alocasia Hendersoni.

To Messrs. Paul & Son, for Rose Pride of Reigate and Rose Madame Norman Neruda.

To Messrs. Paul & Son, for Ligustrum sinense floribundum.
To Mr. R. Owen, for Begonia General Gordon.
To the New Plant and Bulb Co., for Lilium Parryi.
To Mr. E. Hill, for Renanthera coccinea.
To Mr. W. Bealby, for Pelargonium Blanc Parfait.
To Mr. T. F. Rivers, for Nectarine Gordoni.

## Fruit Committee.

Present: J. D. Godman, Esq., in the chair; and Messrs. Harrison Weir, T. F. Rivers, Lyon, G. Paul, H. Veitch, Ross, J. Lee, Rutland, Blackmore, Ford, Willard, G. Bunyard, Hayward, Burnett, W. Paul, Roberts, Woodbridge.

FRUIT.

The most prominent section under this heading was found in the GRAPES, which were generally admirably shown, the class for three bunches of Black Hamburghs bringing not fewer than eleven exhibits, and nearly all first-class. The best were staged by Mr. Taverner, gr. to Sir A. K. Macdonald, Liphook, whose bunches, though of medium size, and fairly solid, had very fine berries, rich in colour, and highly finished; Mr. J. Loudon, gr. to Thomas Barnes, Esq., The Quinta, Chirk, had larger and tapering bunches, the berries smaller, but well coloured; and Mr. D. Roberts, Prestwood, Essex, came 3d, with good clusters, the berries black as Sloes, but somewhat too glossy. With three bunches of any other black kind Mr. Roberts, gr. to the Messrs. De Rothschild, Gunnersbury Park, was a good 1st, with Madresfield Court; his bunches, though somewhat clustered, were grandly berried—indeed, about as finely so as could be—and richly coloured. Mr. W. Allan, gr. to Lord Suffield, Gunton Park, had same kind, smaller, but more tapering bunches, berries good, but wanting more colour; and Mr. Miles, gr. to Lord Carrington, Wycombe Abbey, came next with fine examples of Gros Maroc, only wanting also a little more colour to make them perfect. There were seven lots in this class, and in that for Muscat of Alexandria less competition, only five sets of bunches being staged. The best three, large, solid, although fairly sweet yet almost green, came from Mr. A. Smith, gr. to W. H. Sewell, Esq., Loughton, Essex; Mr. Loudon was 2d, with smaller but better coloured bunches, and Mr. Cakebread, gr. to Sir P. F. Rose, Bart., Penn, Bucks, who was 3d, had moderate bunches. The class was not a satisfactory one.

PINES made a good show, not less than seventeen couple being staged in one class for any one variety. Mr. Loudon had some clean handsome Queens; Mr. Mundell, Moor Park Gardens, followed with good samples of same variety; and Mr. J. Hudson, gr. to H. J. Atkinson, Esq., M.P., Gunnersbury House, was 3d, with Queens also. Some fine fruits of the Smooth Cayenne were shown in the class, but wanting colour. There were nine fruits staged in the single specimen class, the best, a handsome clean Moscow Queen, coming from Mr. D. Roberts—Mr. R. Nicholas, of Castle Hill Gardens, South Moulton, following with a large and well coloured Smooth Cayenne; and Mr. Loudon was 3d, with a very good Queen.

PEACHES were represented by eleven dishes, the finest Barrington, a large, though not highly-coloured, sample, being staged by Mr. R. Farrance, Chadwell Heath, Essex. Mr. Coombes, Sheen House, Surrey, came next, with good but pale Grosse Mignonne; and Mr. J. Bashford, gr. to G. Scarlett, Esq., East Sutton, was 3d with well coloured Crimson Galande. Violette Hâtive and Bellegarde were very well represented.

NECTARINES were in great force, no fewer than sixteen dishes being staged. Of these the finest were Stanwick, rich in colour, from Mr. Bashford; Lord Napier, fairly good, from Mr. Wallis, Keele Hall Gardens; and Violette Hâtive from Mr. Allan. Scarcely any other kinds than those named were shown.

FIGS.—With these fruits Mr. W. Wildsmith, gr. to Viscount Eversley, Heckfield Place, was an easy 1st, his samples of Brown Turkey being specially good and bright. With the same kind Mr. Tavener was 2d; and Mr. W. Iggulden, Maston House Gardens, 3d.

MELONS were pretty good, ten pairs being staged. The best and a superbly flavoured kind, flesh soft, melting, and luscious, was found in Longleat Perfection, a product from Eastnor Castle. Hybrid Cashmere, staged by Mr. Pratt, gr. to the Marquis of Bath, Longleat, 1st. This variety, which has white flesh and a smooth skin, received a First-class Certificate from the Fruit Committee last week at Chiswick. Mr. P. Goddard and Mr. Wildsmith came 2d and 3d, with Hero of Lockinge.

STRAWBERRIES were for the season very good, though samples were in some cases irregular in form. The best brace of dishes, of which eleven lots were staged, came from Mr. D. Roberts, who had good Presidents and fair British Queens. Mr. Allan followed with finely coloured Crimson Queen and fine James Veitch; Mr. J. Smith, Romford, coming 3d, with Dr. Hogg, rather pale, and fair British Queen. In the single dish class Sir Joseph Paxton won 1st place for Mr. T. Edington, Woodthorpe Grange Gardens, Notts; Mr. J. Waite, gr. to Hon. Colonel Talbot, Esher, having good British Queen; and Mr. Allan was 3d, with Dr. Hogg, out of thirteen lots.

CHERRIES were good, the samples especially which came from Mr. Hudson being fine and richly coloured; these were Black Circassian and Bigarreau Napoleon. Mr. Ward, gr. to Earl Radnor, Longford Castle, was 2d, with May Duke and Cleveland Bigarreau; and Mr. Goodacre, Elvaston Castle, 3d, with Governor Wood and Frogmore Early. We cannot quit the fruit without referring here to the truly grand lot of Cherries, some twenty dishes, sent by Mr. T. Rivers, of the Sawbridgeworth Nurseries, from pot plants grown under glass, the samples in most cases being marvellous. Rivers' Early, Black Bigarreau, Bedford Prolific, Bigarreau de Schrenken, and Noir de Guben, were of the finest blacks; and of whites, Bigarreau Napoleon, Bigarreau Gros Coeuret, Bigarreau Monstreuse de Mexel, and Emperor François, were superb. Mr. Rivers also staged twelve sample dishes of Peaches and Nectarines, having especially fine of the former, the American Conkling, large, handsome and brilliantly coloured; Dr. Hogg, and deep-coloured Spenser Pine-apple, with handsome Goldoni Nectarines; and was awarded a Silver-gilt Medal for the collection.

MESSRS. WEBBER'S PEACH PACKING PRIZES.

In competition for the handsome prizes offered by Messrs. Webber & Co., Covent Garden, for the best packed box of twenty-four Peaches, eight were sent by rail and delivered as parcels. Of these when opened, three were packed with moss, one with bran, and four with wadding. The moss proved to be the best material, as, dry, clean, and well picked, it is soft, cool, and elastic; whilst of the wadding packed fruit, nearly all ripe, were more or less bruised, and the wadding becomes damp and less elastic. Mr. J. Turton, gr. to John Hargreaves, Esq., Maiden Erleigh, Reading, and who was 1st last year, again won with his admirable packing in soft moss each fruit being enclosed in soft tissue paper. Mr. T. Hare, The Gardens, Wellingore, Grantham, was 2d with similarly packed fruit; and Mr. Waterman 3d, also using moss.

VEGETABLES.

The class for eight kinds of these brought a strong display in not less than fourteen lots staged. Very close indeed were the best collections—Mr. G. H. Richards, gr. to the Earl of Normanton, Somerley Park, coming a good 1st; and, as a young exhibitor, meriting very high praise, in this beating old and experienced exhibitors. His collection comprised good solid London Cauliflowers, White Elephant Onions of great size, Saunders' Marrow Peas, like to Telegraph; Sutton's Improved Intermediate Carrots, long, tapering, and very handsome; Carter's Perfection Tomatos, Canadian Wonder Beans, Globe Artichokes, and pretty Lapstone Potatos. Mr. G. T. Miles was within a point or two of Mr. Richards, but his London Cauliflowers were a trifle too large. He also had white Onions, only here called Naples; Culverwell's Giant Marrow Peas, fine Stamfordian Tomatos, Snowdrop Potatos, &c. Mr. Haines, Goleshill Castle Gardens, came 3d with good exhibits, including Duke of Albany Peas; Pen-y-byd round Marrows, small and pretty; fine Trophy Tomatos, and Woodstock Kidney Potatos; Mr. T. A. Beckett, Penn, Bucks, and Mr. Waite, both received extra prizes for their capital collections, the latter having in Snowdrop, white kidney, the best dish of Potatos in the show.

TOMATOS were good, the best coming from Mr. Farrance, who had large Trophy, well coloured; Mr. Thompson, gr. to Messrs. W. & E. Wells, Hounslow, coming next with same variety; and Mr. Philips, The Deodars, Meopham, was 3d, with very handsome Carter's Perfection.

A dozen brace of CUCUMBERS were staged, but none specially good. Mr. Goodacre, who had the best in Telegraph and Purley Park Hero, was 1st; and Mr. Ward and Mr. Richards, 2d and 3d.

SPECIAL PRIZES FOR PEAS were offered by Messrs. Webb & Sons, Wordsley, for their Wordsley Wonder, a scimetar-shaped kind, the best samples all coming from Boston—Mr. H. Marriott, Mr. Cooke, and Mr. H. Marriott, jun., taking the prizes, and, curiously enough, coming in the same order in the class for a dish of House's Perfect Marrow, much like British Queen, the prizes being given by Mr. J. House, Peterborough. There was very good competition in both classes. Mr. T. Laxton, Girtford, showed several new Peas, mostly very fine indeed, including Evolution and Walton Hero. Messrs. Jas. Carter & Co., seedsmen, High Holborn, put up sixty dishes of Peas, of varying size and quality, their own famous kinds coming out finest, and secured a Silver Medal for the collection. Some smaller collections of Peas came from Mr. J. C. Mundell and Mr. Waterman; and a large collection of Lettuces from Mr. Beckett, to all of whom Votes of Thanks were awarded; the last-named grower receiving, in addition, a Bronze Medal.

## Trials of Fruit and Vegetables at Chiswick.

AT a meeting of the Fruit and Vegetable Committee held at Chiswick on July 2 (present: Mr. C. Silverlock, in the chair; Messrs. Goldsmith, Ross, Burnett, and Rivers) the collection of Peas growing in the garden was examined, and a First-class Certificate awarded to The Ameer, the result of a cross between Laxton's No. 1 (wrinkled) and Little Gem (seedling), having the appearance of a well selected stock of William I., and coming into use about the same time.

CAULIFLOWERS.

The collection of Cauliflowers was next examined. The following were all considered selections of the Early Erfurt, more or less pure, and were highly commended, viz., Dean's Early Snowball (Dean), Snowball (Williams), Earliest Erfurt (Koster, Rutley), Haage's Dwarf (Koster, Anderson), Erfurt, very dwarf (Benary), Erfurt, dwarf earliest, first quality (Benary), Early Erfurt (Carter), Carter's Defiance (Carter), New Dwarf (Rutley), Erfurt (Vilmorin), Sharpe's First Early (Sharpe & Co.)

STRAWBERRIES.

The following seedling Strawberries from Mr. Laxton were next examined, viz.:—King of the Earlies, Captain, A. F. Barron, Admiral; a First-class Certificate being awarded to the variety named A. F. Barron, stated to be the result of a cross between Sir C. Napier and Sir J. Paxton, an extraordinary prolific Strawberry, bright in colour and of fine quality.

Some fine examples of The Czar Plum and Early Rivers Cherry were exhibited by Messrs. T. Rivers & Sons.

Mr. C. Ross, Welford Park, Newbury, submitted examples of a new Grape raised from the Black Monukka. The berries were large, ovate, clear pale green. The committee requested to see it again when more ripe.

## NATIONAL ROSE.

ROYAL BOTANIC GARDENS, OLD TRAFFORD, MANCHESTER: *July* 11. — The exhibition of Roses held at the above gardens on Saturday last must be considered a success in every sense of the word. It is not often such a display has been spread out as was the case on this occasion; the blooms, besides being very numerous, were perfect in form and very rich in colour. The exhibits were staged in the large exhibition house, and during the time the show was open a stream of visitors was passing and examining the splendid stands of the queen of flowers. In many classes the competition was very severe; nine, ten, and in one case no less than fourteen, entries were sent in. The weather was all that could be desired, the company very numerous, and the promoters doubtless will have found this show at least to have been a financial success.

THE NURSERYMEN'S CLASS.

For seventy-two distinct blooms.—Paul & Sons, Cheshunt, were placed 1st with blooms of grand substance, form, and colour. In the group we noticed Star of Waltham, Boieldieu, very beautiful; La France, Captain Christy, Ulrich Brunner, A. K. Williams, very fine blooms; Madame Gabriel Luizet, Madame Eugénie Verdier, Horace Vernet, Marguerite de St. Amand, large and full; Mrs. Baker, Madame Lacharme, Sultan of Zanzibar, Comtesse d'Oxford, Queen of Queens, and Xavier Olibo. The 2d prize went to Cranston's Nursery and Seed Co., Hereford, who also had a grand lot of blooms; 3d, B. R. Cant, Colchester; and 4th, F. Cant, Colchester.

For thirty-six distinct, three trusses of each.—Here Paul & Sons again secured 1st honours, having Edouard Morren, Paul Néron, Dr. Andry, Duke of Teck, Countess of Rosebery, La France, Marie Baumann, Duke of Edinburgh, Niphetos, Alfred Colomb, grand trusses of Madame Lacharme, Souvenir d'Elise Varden, Madame Prosper Langier, Jean Ducher, Senateur Vaisse, Merveille de Lyon, Marshall F. Wilder, Madame Norman Neruda, Maréchal Niel, Pride of Waltham, and Star of Waltham. 2d, G. Prince, Oxford: in this stand were fine examples of Lady Mary Fitzwilliam, Madame Marie Finger, Marie van Houtte, Madame de Valleville, Princess of Wales, Innocente Pirola, Violette Bouger, and Francisca Kruger. 3d, B. R. Cant: in this collection Duke of Wellington and Hon. E. Gifford were very full and fine.

Eighteen Teas or Noisettes was awarded to G. Prince, who had as a formidable opponent Paul & Sons, who secured 2d honours, the 3d prize falling to B. R. Cant. The winning stand contained superb examples of Amazone, Souvenir de Madame Pernet, Mdlle. Marie Amand, Souvenir d'un Ami, Rubens, Catherine Mermet, Marie van Houtte, Alba rosea, Madame Cusin, Comtesse de Nadaillac, Anna Olivier, Niphetos, Jean Ducher, Maréchal Niel, Innocente Pirola, and Souvenir d'Elise Varden.

For thirty-six distinct blooms, eighteen three trusses of each, and twelve Noisettes or Teas.—John House, Eastgate Nurseries, Peterborough, was successful in securing 1st prizes in the two former classes; Curtis, Sandford & Co., Torquay, being 2d; whilst for the twelve Teas J. Matlock, New Headington, Oxford, was placed 2d. J. Burrell & Co., and J. Jefferies & Sons, Cirencester, also competed in these classes.

THE AMATEURS' CLASSES.

For thirty-six distinct blooms the Rev. J. Pemberton, Romford, was 1st, with blooms of perfect form and grand colour:—Star of Waltham, La France, Exposition de Brie, Etienne Levet, Madame E. Verdier, Duke of Wellington, A. K. Williams, Countess of Oxford, Françoise Michelon, Madame Lambard, Etoile de Lyon, Harrison Weir, Madame Vallombrosa, Dr. Andry, Innocente Pirola, Ulrich Brunner, Madame E. Verdier, J. S. Mill, Horace Vernet, Jules Finger, Auguste Rigotard, Caroline Kuster, E. Y. Teas, Abel Carrière, Jean Ducher, and Pride of Waltham; 2d, W. J. Grant, Esq., Hope End Farm, Leabury; 3d, T. B. Hall, Rock Ferry; 4th, T. W. Girdlestone, Esq., Sunningdale.

For twelve distinct, three trusses, W. J. Grant was 1st, T. B. Hall 2d, and Rev. J. Pemberton 3d.

For twelve Teas or Noisettes, single blooms, T. B. Hall was awarded 1st prize, having splendid blooms of Madame Lambard, Innocente Pirola, Madame Cusin, Anna Olivier, Jean Ducher, Alba rosea, Marie van Houtte, Souvenir d'un Ami, Francesca Kruger, Madame Willermoz, Madame Margottin, and Comtesse Riza du Parc; 2d, Rev. F. Page-Roberts, Scole, Norfolk. This was a very fine stand, and contained, besides Comtesse de Nadaillac, Caroline Kuster, Niphetos, Devoniensis, Marie van Houtte, &c., a grand bloom of Souvenir d'Elise Varden which was awarded the Silver Medal as the finest Tea or Noisette in the show. 3d, Rev. J. Pemberton.

Twenty-four distinct single blooms, 1st, Rev. L. Garnett, Christleton, Cheshire; 2d, A. Tate, Esq., Woolton.

Eighteen distinct single blooms.—W. Boyes, Milford, Derby, was 1st.

For twelve blooms, Rev. E. L. Fellowes, Wimpole Rectory, Royston, was 1st, with a magnificent stand; 2d, J. Fisher, Esq., Brigg. In this collection the Silver Medal for the best hybrid perpetual was awarded to a bloom of Lady Mary Fitzwilliam; the 3d prize falling to W. E. Hall.

For nine Teas or Noisettes, Rev. L. Garnett, 1st; A. Tate, 2d; W. Boyes, 3d.

For twelve Teas or Noisettes (three trusses), the Rev. F. Page-Roberts was 1st, with a very fine stand; T. B. Hall, 2d; Rev. J. Pemberton, 3d.

For six new Roses, not in commerce in England previous to 1883, J. W. Girdlestone was 1st, with President Senelar, Lady of the Lake, Joseph Metral, Edith Gifford, Sunset, and Merveille de Lyon.

In the open classes for twelve new Roses, single blooms, not in commerce in England previous to 1883, Curtis, Sandford & Co., came in 1st, with a very fine stand, beating Paul & Sons, who, however, secured a 2d place; the 3d prize being taken by H. Trellingham, Beeston, Notts. In the winning lot were fine examples of Alphonse Soupert, President Senelar, Madame J. Gautier, Souvenir de Leon Gambetta, Lord Bacon, Merveille de Lyon, Baron N. de Rothschild, Madame Dellevaux, Directeur Alphand, Madame Rambaux, Mrs. George Dickson, and Francisque Rivie.

For twelve single trusses of any yellow Rose, F. Cant was 1st, with Maréchal Niel; George Prince 2d, with Comtesse de Nadaillac; Paul & Sons 3d, with Maréchal Niel.

Twelve blooms of any white.—Curtis, Sandford & Co. were 1st, with Merveille de Lyon; F. A. Dickson & Sons, Chester, being 2d, with the same variety; G. Prince coming 3d, with Innocente Pirola.

Twelve blooms of any crimson Rose.—Here Paul & Sons were well to the fore, winning with fine blooms of Alfred Colomb; Cranston Nursery Co. 2d, with splendid blooms of A. K. Williams; J. House being 3d, with the same form.

For twelve blooms of any dark velvety-crimson, Curtis, Sandford & Co., and Paul & Sons were respectively 1st and 2d, with Abel Carrière; the 3d falling to B. R. Cant, with Prince Camille de Rohan.

For twelve blooms of any kind, F. Cant was 1st, with a grand lot of Souvenir d'Elise; the Rev. F. Page-Roberts being 2d, with Comtesse de Nadaillac; B. R. Cant 3d, with large and fine blooms of Ulrich Brunner.

Messrs. R. Ker & Sons, Liverpool, had a fine lot of Crotons, Dracænas, and Palms, running all down the centre of the tables, also a good lot of plants of Lilium lancifolium rubrum. S. Barlow, Esq., showed a number of varieties from Llandudno of sorts not usually provided for in schedules for Rose exhibitions.

An extra prize was awarded to Mr. Williamson, gr. to G. B. Blair, Esq., Whalley, for a collection of fruit, among which were good examples of Pines, ten Melons, including Victory of Bath, Eastnor Castle, Davenham Early, and William Tillery. (*A Correspondent.*)

## ROYAL CALEDONIAN HORTICULTURAL.

THE summer show of our greatest Northern horticultural society was held in Edinburgh on Wednesday and Thursday, the 8th and 9th inst. The entries numbered 604, as compared with 559 in 1884, 521 in 1883, 375 as 1881, and 459 in 1880. In 1882, owing to the International, there was no summer show. Everything was shown in splendid condition, and the Waverley Market Hall, in which the exhibition was held, presented a charming appearance. Everything passed off in a satisfactory way. The arrangements were excellent, the number of visitors large, and altogether the Caledonian officials, especially such hard-working members as Messrs. A. Macleod, Malcolm Dunn, D. Mitchell, D. Thomson, the Treasurer, P. Neill-Fraser, and the Assist. ant-Secretary, W. Young.

At this show Roses are generally the great feature—for some years past it has come to be called the Rose show. On this occasion, however, our Scotch growers were heavily handicapped in competing with such a formidable rival as Hugh Dickson, of Belfast. In Scotland the season has been backward, the winds of June having been very cold. Roses are just beginning to come into condition, and exhibitors in consequence have not the same choice of blooms to select their competitive stock from; another week would have made a great difference. At the same time, despite these disadvantages, the display of Roses was exceedingly creditable, and attracted great attention. Hugh Dickson, Belfast, carried everything before him. Certainly the Irish Roses showed no signs of any fault in the character. They were for the most part of large size, excellently grown, pure in colour, and with a soft, satiny bloom upon them which made them very charming to the eye to rest upon. Thomas Smith, Stranraer, was not so good a 2d as he generally is, solely on account of the state of the season. A few Roses on his stand were of good size, shape, and colour.

In the gardener class Mr. Parlane, Roslin, had an excellent show, and had no difficulty in carrying off the honours in the section in which he competed. In all respects his Roses showed signs of excellent cultivation.

In the other sections there was a very fair show of stove and greenhouse plants—of the Heaths especially, Erica Bothwelliana being in good condition. The Orchids were a brilliant show—several of the plants shown being of great beauty. Conspicuous among these might be mentioned a splendid Cattleya regalis, two examples of Oncidium macranthum, a Vanda suavis, and an Odontoglossum vexillarium.

The competition tables of plants were of average merit, though the 1st prize collection included some pretty Orchids and other expensive things. There was also exhibited one of the best collections of British Ferns which has been seen in any of the Caledonian shows for many a day. The varieties were well selected and the plants beautifully grown.

Little can be said for the Fuchsias, the art of growing which seems not much attended to in this quarter; but of Pelargoniums there was a first-class display. A very taking show was made by the cut stove and greenhouse plants—a competition which is comparatively new to the Caledonian, though common enough at the English shows. It is likely to grow in favour, as an effective display can be made in connection with it. Some excellent Tree Carnations were staged.

Of fruit there was for this early period of the season a very fair amount staged. Mr. Johnstone, of Glamis, sent for exhibition two really fine bunches of Black Hamburgh Grapes, and there were excellent Nectarines, large in size and high in colour, from Oxenford Castle, and Peaches from New Battle. A special award was made for seven fine Pine-apples from Culzean Castle. The Black Hamburgh Grapes entered for competition were of good quality, the Muscats were decidedly poor. Some very fine Strawberries were shown by Mr. Sinclair, East Linton. The quantity of vegetables tabled was not large, but the quality was good.

To the nurserymen of Edinburgh the show as usual was indebted for some of its most attractive features. One firm only, however, entered the competition lists for the best table of plants, 40 feet by 10, arranged for effect, for which a prize of £6 was offered. This was the Messrs. R. B. Laird & Son, whose table did them every credit—the quality of the exhibits being good and the arrangement tasteful and artistic. The flowers were grouped so as to show masses of bloom, and in their setting of green were exceedingly effective; among other good things we noted were Aralia Chabrieri, a splendid specimen of Orchis maculata superba, a double Ivy-leaved Pelargonium, Hydrangea paniculata grandiflora (the hardy variety we have found exceedingly useful for forcing); Kalmia latifolia, and the new and rare Alocasia Thibautiana, with its large handsome white ribbed leaves. The table of Messrs. Methven was also a model of good taste in arrangement, flowering and foliage plants being alternately grouped, while at regular intervals some outstanding plant was well displayed. They were strong as usual in their wide-famed decorative Pelargoniums, and they had also several interesting examples of other plants, Conspicuous among these were four magnificent Croton Mossiæ, C. triumphans, C. Victoria, and C. cronstadtii; a free-flowering dwarf Latania, a good Lavatera arborea var., a Dracocephalum gracile, and a fine example of Nicotiana affinis. Messrs. Ireland & Thomson had a very choice exhibition of stove and greenhouse plants, elegantly arranged, including beautiful Crotons, Orchids, and Liliums, and their competition box of cut flowers was exceedingly fine.

Dicksons & Co., Waterloo Place, were particularly strong in cut flowers, of which they showed an excellent variety. Among other things here worthy of notice was a new white Lobelia, Pilrig Park, and a new white Pink, Mrs. W. M. Welsh, which was awarded a First-class Certificate. They were also a good 2d for their cut greenhouse flowers.

Mr. Robertson Munro exhibited a very nice lot of herbaceous and alpine plants in pots, some of the former showing what can be done in cultivating even the simplest materials, there being in particular an admirable plant of the common creeper, Lysimachia nummularia. There were also shown the North American Evening Primrose, Œnothera marginata, with delicious perfume; the Iceland yellow Poppy, which has won the hearts of the ladies at present, and some fine new seedling Carnations.

Lamont & Son, The Glen Nurseries, Musselburgh, had a pretty display of Spanish and English Irises (fifty varieties being shown) and sweet-scented Pæony Roses, and they had also a new variegated Silver Ivy.

T. S. Ware, Hale Farm Nurseries, Tottenham, London, showed some exceedingly fine cut herbaceous flowers.

The specialty on the table of Stuart & Mein, Kelso, was a new free flowering white Lobelia, Miss Hope; James Dickson & Sons showed some new Conifers. The horticultural builders present were Mackenzie & Moncur and Keith & Hawke. The former showed a very handy greenhouse, costing about £60, fitted up in an artistic style; and the latter a lantern-roofed conservatory, the speciality of which is, as the glass roof is all round, the plants are prevented from being "drawn." Tillie & Turner, seed merchants, had a tasteful stand, conspicuous on which were their prize American lawn mowers, which combine lightness and power, and appear to have given much satisfaction.

## EDINBURGH BOTANICAL: July 9.

THE Society met this evening in the class-room, Royal Botanic Garden: Professor Dickson in the chair.

The following communications were read:—

I. "Notes on the Grasses of the Southern Punjab." By W. Coldstream, B.A., H.M. Bengal Civil Service.

II. "An account of Haberlandt's views on 'The Physiological Functions of the Tissues of Plants,' with illustrative microscopic preparations." By G. F. Scott-Elliot, B.A.

III. "Report on the Progress of Vegetation at the Royal Botanic Garden." By Robert Lindsay, Curator.

IV. "On Temperature, Vegetation, &c., in the Botanic Garden, Glasgow, for June." By Robert Bullen, Curator.

### ABSTRACT OF MR. COLDSTREAM'S PAPER.

The tract of country described in the paper is that which, till the occurrence of recent administrative changes, constituted the Hissar division. It stretches from near Delhi westward to the Sutlej River to the confines of Multan and Bahawalpur; there are large sandy areas in this track, which, however, is in parts watered by the Western Jumna Canal, and the stream of the Ghaggar. The soil is prolific in the rainy season, which is the time of growth of the principal harvest. The country is on the whole very dry, hot and sandy. Rainfall varies from 12½ to 20 inches. Some of the principal trees are Acacia arabica (native name, Keekur), A. leucophlæa (native name, Ronj), Tecoma undulata (native name, Rohira), which has large showy orange-coloured blossoms, and grows wild even in the barren and sandy tracts; Prosopis spicigera (Jhand), Capparis aphylla (Karil), Salvadora oleoides (Jál), and on the banks of streams and canals the valuable Dalbergia sissu (Sheesham wood), a congener of the Bombay Black-wood. The principal crops are Sorghum vulgare (Jowar) and Penicillaria spicata (Bajra). These form the staple food of the people. But Wheat, Gram (Cicer arietinum), and on the fertile spots Sugar-cane, are also grown in considerable quantities. The unripe Sorghum plant is said to be sometimes, in seasons of drought, poisonous to cattle. The crops sometimes grow on sandhills and wonderfully unpromising looking soil. The farmer often dreads too heavy a rainfall because it is apt to wash his crop out of the soft and sloping ground of the sandhill. The wild grasses are numerous, and as this is a pastoral region their nutritious qualities as fodder render them a peculiarly valuable natural product. For months in the year the cattle are largely dependent on the produce of the uncultivated grass lands. The breed of cattle is famous. The region is very liable to scarcity and fodder famines, owing to failure, or partial failure, of the rains. The mitigation of distress at such times by attention to fodder supply, is one of the practical questions which are engaging the attention of the Agricultural Department of the Government of India. That this is an eminently practical question is proved by the fact that in the cold season of 1877-78 about 480,000 head of stock, including bullocks, cows, buffaloes, camels, sheep, and goats are estimated to have died. The questions of stacking, ensilage, arboriculture, the supply of arboreal fodder, have yet to be studied. Stacks of Sorghum and Millet keep well; but the natives do not stack grass, although the officers at the Hissar cattle farm do, and it is found that the hay keeps well for five or six years, or even longer. Nor do the natives sow grass: all the grass fodder which is consumed is what grows wild in the uncultivated areas. Much might be done to keep the cattle alive in times of scarcity by stacking fodder in large quantities. The recent remark of Sir Alfred Lyall, Lieut.-Governor of the North-West Provinces, holds good for this region, that "a large number of cattle die every year because their owners take no trouble to keep them alive."

Some of the most interesting grasses of the region are the following, the native names being given in parentheses:—

Cynodon dactylon (Dáb).—Makes into good turf for lawns, and is much eaten by horses. The grass is stubbed up from the roots and given to the horses.

Andropogon pertusus (Palwa).—Especially relished by buffaloes.

Sporobolus tenacissimus (Kheo).—Particularly good for horses.

Heteropogon contortus (Sarwála).

Panicum colonum (Sanwak).—Its grain is collected and sold in the bazaars for making bread.

Panicum helopus (Kuri).

Elionurus hirsutus (Sín, or Sewan).

Eleusine flagelliflora (Ghantil).

Eleusine ægyptiaca (Bhobra).—One of the most nutritious grasses; seeds eaten in seasons of scarcity.

Pennisetum cenchroides and Cenchrus montanus (both called Anjan and Dháman).—These grasses are considered the most nutritious of all.

Andropogon Laniger (Bûr, or Khâwi).—A nutritious and fragrant grass; imparts an aroma to the milk of cattle eating it.

Sorghum halepense (Barú).—The wild Sorghum or Jowar. When eaten in a season of drought before its grain is developed, is said to be sometimes fatal to cattle; but at other times a nutritious grass grain, much eaten by the poorer classes in Bikaner.

Andropogon muricatus (Panni).—The principal thatching grass of the Punjab. Its root forms the scented Khas-khas used for lattices or damp screens.

Elionurus hirsutus (Sín or Shín).—Seed collected and eaten by the people of Rajputana. It is the grass (along with a few others) whose grazing qualities give the grazing grounds of Bikaner their high character. Called Cusa in Hindu mythology.

—— (Bhurat).—A grass very common in the Bikaner territory and elsewhere; seeds eaten mixed with Bajra flour.

The first eight are said to stack well. If thoroughly protected from rain, stacked grass will last in the climate of Hissar for a very long period—some species for ten, twelve, and even twenty years; it seems, in fact, when properly dried and protected, to be nearly imperishable.

### PROGRESS OF VEGETATION AT THE ROYAL BOTANIC GARDEN, JUNE, 1885.

The month of June was mild and pleasant, though somewhat dry. On the whole it was favourable in advancing outdoor vegetation generally. The luxuriant foliage which hardy trees and shrubs developed during the month has been matter of general observation. Most trees were late in coming into leaf, and thus escaped injury from late frosts. This, combined with the well-ripened condition of the wood produced last autumn, is sufficient to account for the fine display of foliage now seen. Amongst those which flowered well were various species and varieties of Cratægus, Æsculus,

Pyrus, Sorbus, Sambucus, Rhododendron, Azalea, and Fraxinus Ornus. Variegated forms of Taxus, Biota, Retinospora, and other Conifers are remarkably well coloured, affording a pleasing contrast with the dark green foliage of the typical species. Late transplanted trees and shrubs have suffered severely from drought, and grass on lawns and verges began to turn brown by the end of the month. Herbaceous plants, as a rule, have done well, notwithstanding the drought which prevailed. The lowest night temperature was 35° on the 9th of the month, other low readings occurred—on the 10th, 37°; 15th, 38°; 23d, 39°; 26th, 37°. The lowest day temperature was 59° on the 8th, and the highest, 77°, on the 12th. There were twenty perfectly dry days, and slight showers only during the remainng ten days.

On the rock garden 350 species of herbaceous and alpine plants came into flower during the month, making a total of 818 for the season as compared with 798 at corresponding date last year. The following were amongst the most conspicuous which flowered, viz.:—

Aciphylla squarrosa (♂ ♀)
Ajuga genevensis
Androsace rotundifolia maxima
Allium coeruleum
Anagallis tenella
Arenaria montana
Aster alpinus
" " albus
Astragalus vaginatus
Calochortus coeruleus
Calceolaria Kellyana
Celmisia spectabilis
Chrysobactron Hookeri
Clintonia Andrewsiana
Coronilla iberica
Craspedia Richea
Dianthus alpinus
" eximius (hybrid)
" Fischeri
" neglectus
" superbus
Diphyllea cymosa
Echium rubrum
Erigeron auranticum
" purpureum
Erinus hispanicus albus
Eriophorum alpinum
Gaillardia maxima
Gentiana lutea
Geranium cinereum
Gaultheria carnea
Haplocarpa Leichtlini
Hedysarum obscurum
Houstonia coerulea
Hypoxis erecta
Melissa grandiflora
Mulgedium alpinum
Lewisia rediviva
Linum alpinum
Libertia grandiflora
Lychnis pyrenaica
" viscaria splendens, fl.-pl.
Ononis rotundifolia
Onosma taurica
Oxytropis Halleri
Pentstemon Lewisii
Potentilla eriocarpa
Pratia angulata
Rosa pyrenaica
Sedum Oreganum
Trifolium alpinum
Vaccinium Mortinia
Vella spinosa
Veronica Haastii
" carnosula
" Chathamica
" Hulkeana
Vancouveria hexandra
Verbascum olympicum
Wahlenbergia saxicola, &c.

ON TEMPERATURE, VEGETATION, &C., IN THE BOTANIC GARDEN, GLASGOW, FOR JUNE, 1885.

The temperature has been low, 36° having been registered several times in the latter as well as in the early part of the month, and frequently the temperature did not exceed 40°. The lowest day reading was 58°, the highest 78°. The weather has been very dry; bright sunny days have been general; the few slight showers which have fallen have been of little benefit to vegetation, and most garden and farm crops are suffering. Spring-sown seed, particularly those of annuals, promised well, but being kept alive by artificial watering have made little progress; indeed, all half-hardy plants have a stunted look. Hardy trees and shrubs of all kinds have been prolific of bloom, but owing to the occasional cold nights and dry days the foliage is not so healthy as usual. Hardy herbaceous plants are mostly early in bloom.

## EALING, ACTON, AND HANWELL HORTICULTURAL: July 7 and 8.

IN celebrating this year the attainment of the twenty-first anniversary of its existence, this Society held in the park attached to the mansion of Lord de Rothschild and brothers at Gunnersbury on the above days, an extensive exhibition, which it was also resolved should on this occasion extend over two days that the population inhabiting the suburbs around Gunnersbury might have opportunity to inspect the park so kindly placed at the Society's disposal. In addition to this kindness, which was largely helped by the courtesy shown by Mr. Roberts, the Messrs. Rothschild placed at the committee's disposal the sum of 50 gs., which was offered in various special prizes, and aided materially the production of a fine horticultural display. On Wednesday Lady de Rothschild presented the numerous prizes won by the cottager section of competitors to them, thus adding personal interest to tangible assistance. The show filled four large tents, one being entirely devoted to cut flowers, table decorations, bouquets, and fruit, and was one of the best displays we have seen for a long time. The cottagers' contributions, comprising several hundred entries, occupied a large area of table; whilst the plant tents were well filled. The trade recognised the importance of this year's show, and sent many collections, prominent amongst which was a grand group of some 150 Roses in pots, all fresh and finely flowered, from Messrs. Jas. Veitch & Sons, and including most of the best kinds. Backed with Japanese Acers, and fenced with dwarf Ferns and ornamental foliage plants, it attracted attention. Messrs. C. Lee & Sons sent a group of their ornamental foliaged trees and shrubs. Messrs. B. S. Williams & Son had one of their collections of stove and greenhouse plants, inclusive of some Orchids, proving an attractive feature. Messrs. John Laing & Co. had a group of their Begonias that startled visitors by the huge size of their blooms and rich colours, and were effectively set in the midst of decorative plants. Mr. R. Dean showed fine examples of the new Rocket Candytuft, Empress.

DECORATIVE COMPETITIVE GROUPS.

These, always an interesting feature, were specially so here, three separate classes being set apart for them. In the large groups Messrs. Fromow & Sons, Turnham Green, again met their powerful rivals in decorative art, Messrs. Hooper & Co., Twickenham, both having groups of much beauty. The former had rather the best position, and perhaps more bloom; the latter rather the most elegant arrangements. Eventually bloom, which was strong in Lilium auratum and L. longiflorum, some good Orchids, &c., gave Messrs. Fromow the premier place. Still, opinions varied, and many thought Messrs. Hooper's collection, which was put 2d, the most pleasing. Mr. Ravenhill, gr. to Mrs. Treadaway, came 3d, having many gay Pelargoniums in his group. In another group class Mr. Chadwick, gr. to E. M. Nelson, Esq., Ealing, came 1st with a pleasing arrangement of white Pancratiums, Amarylli, Ericas, &c. Mr. G. Fulford, gr. to J. Boosey, Esq., Acton, came 2d, the competition being large. There was also a class for yet smaller groups. Of honorary groups shown by gardeners, special mention must be made of the very elegant and beautiful one put up by Mr. Hudson, gr. to H. J. Atkinson, Esq., M.P. Gunnersbury House, who did not exhibit in the plant competitions. This group included as a central figure a huge and grandly done piece of Asparagus plumosus, some 17 feet high, and 4 feet through; also handsome Palms, Ferns, Crotons, Dracænas, &c., lit up with fine Gloxinias. To this a special award was made, as also to a fine lot of Souvenir de la Malmaison and Amethyst Clove Carnation, in pots, faced by others of the crimson Napoleon mule Pink and Maidenhair Fern, staged by Mr. Roberts from the gardens.

SPECIMEN PLANTS.

These were prominent amongst the foliage classes. Ferns, Palms, Caladiums, red Begonias, Coleuses, &c., were in fine form and great variety. Flowering stove and greenhouse plants were less strong, which is to be deplored in the interest of most exhibitions now. Mr. Davis, gr. to — Lake, Esq., Chiswick, had the best of these in Pentas carnea, Allamanda Hendersoni, Bougainvillea glabra, and a capital Vinca rosea. Mr. Chadwick came next with a good Statice profusa, Clerodendron Balfourii, &c. Mr. Smith, gr. to T. Nye, Esq., Ealing, had a gigantic Beauty of Wilts Fuchsia in his collection, finely flowered. The best four Fuchsias came from Mr. Wright, gr. to G. P. Greenfield, Esq., Hanwell, who had large, though rather thin, pyramids of Arabella Improved, Cannell's Gem, Mrs. Rundell, and Brigade Mr Davis had smaller but denser plants in Symmetry and Lord Falmouth, reds; and Emily Lye and Arabella, whites. The four best large-flowered Pelargoniums, full of bloom and singularly fresh for the time of year, came from Mr. Ravenhill; and Mr. Davis had in Laura Straun, reddish-salmon; Mrs. Severs, rosy pink; Sarah Bernhardt, white; and Guida, rich rosy-cerise; some splendidly grown and flowered plants. The only collection of six Orchids came from Messrs. Fromow & Sons, and included Cattleyas Gaskelliana and Roezlii, Odontoglossums Alexandræ and citrosmum, Aërides odoratum, and Dendrobium suavissimum. Petunias, Begonias, and Gloxinias amongst flowering plants were largely shown, and proved most attractive.

CUT FLOWERS.

Foremost amongst these was a fine lot of cut Roses, sent by Messrs. Lee & Sons from their Ealing nurseries. The collection comprised twelve boxes, and many of the blooms were first-class, even though, as we learn from Mr. Cannon, only ordinary culture had been bestowed. Messrs. James Veitch & Sons also put up a fine collection of choice kinds, Messrs. Lee & Sons and Messrs. Hooper & Co., each staged very interesting and representative collections of hardy flowers; and Sweet Williams, Antirrhinums, Gloxinias, and mixed cut flowers were in great force; specially charming were the boxes of cut Petunias, fine double and single, striped and fringed flowers, creating rich and striking effects. Zonal Pelargoniums were also in great force in this section.

TABLE DECORATIONS, BOUQUETS, &C.,

were remarkably attractive and beautiful. Mrs. Hudson had the best dressed table for ten persons, her stand being elegantly dressed and fruit of the best quality; Mr. Butcher, of Norwood, had the 2d best table, also charmingly decorated, but the fruit wanted freshness. These tables were greatly admired.

The three finest bouquets in competition, one for bride and two for bridesmaids, came from Mr. Phippen, of Reading, and were of more than usual excellence, although perhaps too large. Mr. J. A. Morris, Acton, had three good bouquets also, and Mr. Chadwick had the best single bridal bouquet: also was 1st with bouquet of Roses. A capital class and including some fine arrangements.

Miss E. Nelson, Hanger Hill, had the prettiest yet simplest button-hole bouquets, and was also 1st in the class for sprays for ladies' hair, using chiefly white Gardenias, Stephanotis, Gladiolus, pink and white Pelargoniums, &c,

Vases and stands of Roses and Ferns were beautiful, Mrs. Howard Hayward taking 1st place, and being also 1st with a basket of flowers for drawing-room table, with a simple but pleasing arrangement.

Mrs. H. B. Smith, Ealing, exhibited two Court bouquets, and sprays for head decoration, mounted on velvet stands.

FRUIT.

Mr. J. Gough, Harefield Grove Gardens, sent (not for competition) some fine Highcross Hybrid and Victory of Bath Melons, handsome Queen Pines, Tomatos, &c.

In the open class for eight dishes, Mr. J. Hudson was invincible with Madresfield Court and Foster's Seedling Grapes, Queen Pine, fine and wonderfully coloured Lord Napier Nectarines, President Strawberries, Black Circassian and Napoleon Bigarreau Cherries, and a Melon. Mr. Baird, gr. to C. A. Daw, Esq., Castle Hill, had the best six dishes of fruit, including Duke of Buccleuch and Black Hamburgh Grapes, Peaches, Cherries, all good. Mr. Milson had the best black Grapes in two superb bunches of Black Hamburgh, finely coloured and finished, Mr. Baird coming 2d with same kind, but was a good 1st in the class for whites with some huge Duke of Buccleuch; Mr. Ravenhill coming next with rich coloured Buckland Sweetwater. Strawberries were very fine, some splendid samples of J. Veitch, British Queen, Dr. Hogg, and Sir J. Paxton, being staged.

Vegetables were shown in large quantities by gardeners, amateurs, and cottagers, and of high quality; and some 150 bunches of wild flowers and fifty of garden flowers were staged by children for numerous prizes.

## BEXLEY HEATH HORTICULTURAL: July 8.

IN no part of the kingdom is there so much to be seen in gardening matters that excites surprise in those who have been for some years absent as in the extent to which the cultivation of fruit and vegetables has been extended in such parts of the county as are best adapted for the purpose. And the displays present at the exhibitions held by the horticultural societies in these parts give evidence that the standard of cultivation has kept pace with the extension that has occurred. The Society under notice held their annual summer show at the Grove, Bexley, on the above date. Plants, both flowering and fine-leaved, were very well shown.

Six stove and greenhouse varieties, in bloom.—Mr. Mitchell, gr. to Mrs Arbuthnot, Bridgen Place, took 1st, with a well-grown half-dozen, which included Allamanda grandiflora, A. Hendersoni, Anthurium Scherzerianum, bearing some forty highly coloured flowers; Aërides odoratum, with twenty spikes; Dipladenia profusa, and Vinca oculata, full of flower.

Single specimen plant in flower.—1st, Mr. Moore, gr. to W. Pickersgill, Esq., Blendon Hall, with a very fine specimen of Anthurium Andreanum, carrying eight very large flowers. It is an unusually good variety of this variable plant, of which there appears to be many that are inferior to the few that produce large, well-developed flowers; Mr. Mitchell 2d, with Allamanda Hendersoni.

BEGONIAS.

1st, Mr. Moore; 2d, Mr. Mitchell, both showing nicely flowered plants.

FINE-FOLIAGE PLANTS.

In the class for six Mr. Mitchell was easily 1st, staging, amongst others, a beautiful specimen of Croton Queen Victoria, finely coloured; C. Johannis, and Asparagus plumosus, in the form of a feathery, well-furnished bush; Mr. Moore 2d, his best examples being Seaforthia elegans, Alocasia Veitchii, and Anthurium crystallinum.

COLEUS

were well shown. For six, Mr. Burgess, gr. to G. J. Mitchell, Esq., had 1st; Mr. Tomlin, gr. to S. White, Esq., being 2d.

Six table plants.—1st, Mr. Burgess; 2d, Mr. Moore.

FERNS.

Here again Mr. Mitchell took the lead with six, staging a nice group of medium-growing kinds, the best being Adiantum farleyense, Gymnogramma chrysophylla and G. Wettenhalliana; 2d, Mr. Moore.

GROUPS OF PLANTS

arranged for effect, as now at most exhibitions, excited much attention. On this occasion Mr. Mitchell and Mr. Moore were placed equal 1st; the former had a very tasteful arrangement with, as there ever should be in combinations of this character, an absence of too much colour through there not being too many flowering plants, nor such as are massive in appearance, in place of which those of light elegant habit are much preferable. Mr. Moore amongst others had finely flowered examples of Odontoglossum vexillarium and Anthurium Scherzerianum; 3d, Mr. Tomlin, gr. to S. White, Esq., Oakwood.

FRUIT

was shown in good condition. For three bunches of black Grapes, Mr. Moore was easily 1st, with nicely finished examples of Black Hamburgh; 2d, Mr. Mitchell.

With three bunches of white Grapes the order was reversed, Mr. Mitchell taking the lead with Foster's Seedling, nice bunches well coloured; Mr. Moore had larger bunches of the same useful variety, but not so well up in colour.

Dish of Peaches.—1st, Mr. Moore, with Royal George, full sized fruit in beautiful condition; Mr. King, gr. to Mrs. T. Burton, who was 2d, had Hale's Early, also well shown.

Dish of Nectarines.—1st, Mr. Moore, with Newington, handsome fruit, finely coloured.

CUT FLOWERS.

With twenty-four Roses Mrs. Fuller, Bexley, took the lead, having a fine stand; 2d, Messrs. Bunyard & Co., Maidstone.

Twelve Roses.—1st, Mr. Marshall; 2d, Mr. Burgess.

A beautiful stand of twelve varieties of Teas, three blooms of each, was shown by Mrs. Fuller, not for competition.

There was a sufficient number of exhibits of table decorations, centre-pieces, bouquets, &c., to fill a good sized tent. Mrs. Rogers took 1st, for a nicely arranged table; Mr. Eyles 2d.

With a table arranged with wild flowers alone Miss A. Jenkins had 1st.

Bouquets were well shown, Mr. Mitchell taking the lead with a very nice example; 2d, Mrs. Mitchell.

## THE CRAY VALLEY AND SIDCUP HORTICULTURAL: July 11.

THE National Rose Society has been the means of calling into being so many Rose shows that it is not matter for wonder one was started in that pleasant district of Kent known as the Cray Valley. It was the first exhibition of this newly formed Society, and took place in the grounds of Sidcup Place, the residence of the Rev. R. M. Berens. It was more particularly a Rose exhibition, though there were classes for plants, flowers, fruits, and vegetables.

ROSES.

The classes open to all comers brought an excellent display. The best forty-eight varieties, single trusses, came from Mr. B. R. Cant, St. John's Nursery, Colchester, who had nice, fresh, bright blooms; 2d, Messrs. Paul & Son, Old Nurseries, Cheshunt, who had the blooms in good form.

Messrs. Geo. Bunyard & Son had the best twenty-four varieties, single trusses, staging charming blooms; 2d, Mr. B. R. Cant.

The class for twelve varieties of Teas and Noisettes brought a good competition also. The best came from Messrs. Bunyard & Co., who had nice fresh blooms; 2d, Mr. B. R. Cant, with a stand containing some very fine blooms.

In the class for six trusses of Roses of one variety, Mr. B. R. Cant was 1st, with A. K. Williams; 2d, Messrs. Bunyard & Co., with Marie Baumann.

In the classes for amateurs residing within 3 miles of Sidcup, Mrs. Fuller, Bexley, was 1st, with twenty-four varieties; 2d, G. T. Ongley, Esq., Eltham; 3d, A. Harris, Esq., Eltham.

The Silver Medal of the National Rose Society was also awarded to Mrs. Fuller's stand in this class.

Mrs. Fuller was also 1st, with twelve varieties.

With six varieties of Teas Mrs. Fuller was again to the fore, having good blooms.

The Bronze Medal of the National Rose Society was awarded to the Rev. J. N. Rowsell for the best specimen Rose, having a capital bloom of Etoile de Lyon.

Honorary contributions of a valuable character, not for competition, were sent by Messrs. George Bunyard & Co., who had a collection of old-fashioned Roses, and a very interesting collection of Moss Roses; J. H. Bath, Esq., North Cray (W. Parsons, gr.), who had a charming collection of Orchids; Mr. R. Sim, nurseryman, Foot's Cray, who had a fine collection of hardy Ferns; Messrs. H. Cannell & Sons, who had a collection of cut flowers, including Pelargoniums, Begonias, &c.; Messrs. J. Laing & Co., Stanstead Park Nurseries, Forest Hill, who had a collection of choice plants, including some pretty Begonias; Mr. R. C. Ravenscroft, Granville Nursery, Lewisham, who had a collection of flowering plants; and Messrs. James Carter & Co., Crystal Palace Nursery, who had a group of Empress Petunias.

## Variorum.

THE PASTORAL DISTRICTS OF NEW SOUTH WALES.—There are many who entertain an impression that the far inland districts of New South Wales partake much of the character of the African desert, consisting of broad arid plains, wholly destitute of animal and vegetable life. It is true that during prolonged periods of drought they possess a dried up appearance, and are insufficient to feed the millions of sheep scattered over their surface, but a few showers of rain suffice to change the scene to one of luxuriant abundance. A recent visitor to the western portion of New South Wales, a region devoted chiefly to pastoral purposes, describing his arrival at the township of Narrandera, says it is in the heart of a fertile agricultural country, which only lacks a regular rainfall to make it all that the selector could desire. For the last three years it has been suffering, in common with the whole of the western districts, with continued drought; but the soil is good, the land comparatively cheap, and the construction of the railway has already transformed a part of it from wild uncultivated bush to productive land, and is destined to transform the rest at no very distant date. For miles and miles the line passes throughs mall forests of Gum trees, thinly scattered, to be sure, and not costing much to remove; broken here and there with level tracts of cultivated ground, and relieved at intervals by small townships and stations, or more frequently a siding erected by the Government for the conveyance of the produce from fertile districts. Half way between Narrandera and Hay the scene changes. The Gums are left behind, except where they serve to mark the course of the river to the left, and only a few stragglers remain here and there to break the monotony of the immense pastoral plains which stretch out on either side for many a weary mile. A few weeks ago the whole of this country was absolutely bare. Not a blade of grass covered the face of the earth, nor had one been seen for months past; and vast flocks of sheep, with numbers considerably thinned by the drought, were huddled together in small paddocks strewn with hay, stored for the purpose in long wooden sheds, erected near the sidings in order to be as near as possible to the rail by which the food was brought down from town at ruinous expense. But now the whole face of the country was changed. The downpour of rain in January had fallen upon a soil which was so parched for want of it that it almost despaired of ever being able to quench its thirst again, and which was only too ready to show its gratitude to Heaven for the long-delayed blessing when at length it was vouchsafed. The long stretch of level land was covered with a carpet of the tenderest green; the ditch which at intervals fringes the side of the line is adorned with velvet as pleasing to the eye as it must surely be to the touch; while from above the waters rise mounds of grass as verdant as any that ever waved by the banks of the Hooghly, or adorned the American plains. The sheds are deserted, and feeding on the tender shoots which have sprung up with such marvellous rapidity under their feet are thousands of sheep, which bask in the glow of the evening sun, or browse on the sweet young grass, as their fancy directs.

AN AUSTRALIAN VALLEY.—About 46 miles from Sydney, on the Blue Mountain Railway, is a place which, if situated in Europe, would annually attract thousands of tourists and pleasure-seekers. It is known as "The Valley," and is a lovely vale of grassy undulating land, lightly timbered and well watered, presenting quite an English park-like appearance; but instead of huge gnarled Oaks, Beeches, and Elms, we have here colossal Eucalyptus, and other majestic indigenous timber, while the rocks with which the gullies are faced are everywhere clothed with a wealth of Ferns in immense variety; Gleichenias, Adiantums, Dicksonias, Pteris, and a host of other forms valued by collectors, may be gathered here in waggon-loads. If the fortunate owner of an acre of this country could but transport its vegetation unimpaired to London or Paris, he would quickly find himself a moderately wealthy man. Gleichenias, and other rare varieties which abound here, are frequently sold in London at from 3 to 10 guineas per plant. In the spring, and during the early summer months, some of the most beautiful members of the mountain flora are in full bloom. The Waratah (Telopia speciosissima), Eriostemons, Boronias, Correas, Indigoferas, Heaths, Dilwynias, and many others, are radiant with blossom, while the Selaginellas and mosses everywhere abound, giving life and incident to the

"Zigzag paths and juts of pointed rocks,"

to the beauties of which only a Kendall could do full justice. *Sydney Paper.*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, JULY 15, 1885

| MONTH AND DAY. | BAROMETER: Mean Reading Reduced to 32° Fahr | BAROMETER: Departure from Average of 18 years | TEMPERATURE OF THE AIR: Highest | TEMPERATURE OF THE AIR: Lowest | TEMPERATURE OF THE AIR: Range | TEMPERATURE OF THE AIR: Mean for Day | TEMPERATURE OF THE AIR: Departure of Mean from Average of 60 years | Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point | Hygrometrical Deductions from Glaisher's Tables 6th Edition: Degree of Humidity Sat = 100 | WIND: Average Direction. | RAINFALL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| July | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 9 | 30·01 | +0·30 | 73·8 | 47·5 | 26·3 | 59·6 | — 2·5 | 45·3 | 59 | S.W. | 0·00 |
| 10 | 29·67 | +0·16 | 84·3 | 49·9 | 34·4 | 65·5 | + 4·3 | 17·4 | 51 | E. | 0·00 |
| 11 | 29·85 | +0·01 | 85·3 | 52·0 | 33·3 | 68·6 | + 6·3 | 52·2 | 56 | S.W. to S.S.W. | 0·00 |
| 12 | 29·87 | +0·05 | 85·0 | 57·8 | 27·2 | 69·6 | — 1·8 | 51·6 | 81 | W. to W.N.W | 0·41 |
| 13 | 29·85 | +0·03 | 74·5 | 54·5 | 20·0 | 61·5 | — 10·4 | 9·2 | 65 | S.W. | 0·02 |
| 14 | 30·03 | +0·21 | 72·2 | 49·6 | 23·2 | 58·7 | — 3·9 | 44·7 | 58 | N.W. to S.W. | 0·00 |
| 15 | 30·01 | +0·19 | 77·0 | 50·8 | 26·2 | 62·9 | + 0·2 | 43·3 | 48 | S.S.W. | 0·00 |
| Mean | 29·91 | +0·11 | 75·4 | 51·6 | 24·8 | 62·6 | + 0·2 | 48·1 | 60 | S.W. | 0·43 |

July 9.—Dull day, sun shining at times.
— 10.—Very fine day.
— 11.—Very fine day.
— 12. Rain in early morning, faint gleams of sunshine at intervals. Dull day.
— 13.—Dull day, fine and bright occasionally, thunderstorm between 9 and 10 P.M.
— 14.—Fine and bright mostly.
— 15.—Very fine day.

LONDON: *Atmospheric Pressure.*—During the week ending July 11, the reading of the barometer increased from 30.20 inches at the beginning of the week to 30.27 inches by 9 A.M. on the 6th, decreased to 30.09 inches by 9 A.M. on the 8th, increased to 30.22 inches by 9 A.M. on the 9th, decreased to 30.17 inches by 1 P.M. on the 9th, increased to 30.20 inches by 9 A.M. on the 10th, and was 29.96 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.16 inches, being 0.06 inch higher than last week, and 0.18 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 85°.3, on the 11th; on the 8th the highest was 72°. The mean of the seven high day temperatures was 79°.1.

The lowest temperature was 47°.5, on the 9th; on the 5th the lowest temperature was 57°.2. The mean of the seven low night temperatures was 53°.5.

The greatest range of temperature in one day was 34°.4, on the 10th; the smallest was 15°.5 on the 8th. The mean of the seven daily ranges was 25°.6.

The mean temperatures were—on the 5th, 66°.9; on the 6th, 68°.3; on the 7th, 62°.7; on the 8th, 61°.3; on the 9th, 59°.6; on the 10th, 66°.5; and on the 11th, 68°.6; of these the 5th, 6th, 7th, 10th, and 11th, were above their averages by 5°.4, 6°.7, 0°.9, 4°.3, and 6°.3 respectively; and the 8th and 9th were below their averages by 0°.7 and 2°.5 respectively.

The mean temperature of the week was 65°, being 4°.5 higher than last week, and 2°.9 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 142°, on the 10th. The mean of the seven readings was 131°.1.

The lowest reading of a minimum thermometer placed on grass was 34°.5, on the 9th. The mean of the seven readings was 41°.9.

*Rain.*—0".02 inch fell on the 8th.

ENGLAND: *Temperature.*—During the week ending July 11, the highest at Blackheath was 85°.3, at Cambridge 83°.8, at Sheffield 80°.; the highest at Bolton was 70°.8, at Preston 71°, at Liverpool 71°.3. The general mean was 76°.1.

The lowest temperatures were 38° at Truro, 40°.5 at Wolverhampton, 44°.2 at Bolton; the lowest at Newcastle was 52°, at Preston 51°, at Brighton 49°.5. The general mean was 46°.6.

The greatest ranges were 38° at Cambridge, 37°.8 at Blackheath, 36° at Wolverhampton; the smallest ranges were 20° at Preston, 22°.4 at Liverpool, 24° at Newcastle. The general mean was 29°.5.

The mean of the seven high day temperatures was highest at Cambridge, 80°, at Blackheath 79°.1, at Leeds 74°; and was lowest at Bolton, 66°.2, at Liverpool 66°.7, at Preston 67°.6. The general mean was 71°.7.

The mean of the seven low night temperatures was highest at Newcastle, 54°.6, at Leeds 53°.9, at Brighton 53°.8; and was lowest at Bolton, 47°.6, at Wolverhampton 47°.7, at Truro 49°.3. The general mean was 51°.5.

The mean daily range was greatest at Cambridge, 29°.7, at Blackheath 25°.6, at Sheffield 25°; and was least at Liverpool, 13°.8, at Preston 14°, at Plymouth 16°. The general mean was 20°.2.

The mean temperature was highest at Blackheath, 65°, at Cambridge 63°.2, at Leeds 62°.1; and was lowest at Bolton, 55°, at Truro 57°, at Wolverhampton 57°.8. The general mean was 59°.7.

*Rain.*—The largest falls were 1.01 inch at Liverpool, 0.79 inch at Bolton, 0.49 inch at Newcastle; the smallest falls were 0.01 inch at Cambridge and Bradford, and 0.02 inch at Blackheath. The general mean was 0.26 inch.

SCOTLAND: *Temperature.*—During the week ending July 11, the highest temperature was 74°.7, at Dundee; at Greenock the highest temperature was 68°. The general mean was 71°.9.

The lowest temperature in the week was 41°, at Perth; at Leith the lowest temperature was 47°.3. The general mean was 45°.9.

The mean temperature was highest at Leith, 61°.6; and lowest at Glasgow, 57°.8. The general mean was 59°.8.

*Rain.*—The largest fall was 1.63 inch, at Greenock, and the smallest fall was 0.06 inch at Edinburgh. The general mean was 0.38 inch.

JAMES GLAISHER F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, July 13, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been rather dull, unsettled, and showery over the greater part of Ireland and Scotland; but in England, with the exception of some local showers in the south-east towards the end of the period, it has continued fine and bright.

The *temperature* has about equalled the mean for the season in "Scotland, E.," and "England, N.E.," but in all other districts it has been below, the deficit varying from 1° or 2° in the north-east and south to between 3° and 5° in the west and south-west. The maxima, which were generally recorded on the 10th, ranged from 66° to 73° in Scotland, from 67° to 72° in Ireland, and from 80° to 83° over southern, central, and eastern England. The minima were registered either on the 9th or 13th, when the thermometer fell as low as 33° in "England, S.W." (at Llandovery), to 39° in the "Midland Counties," and to between 40° and 44° in all other districts except the "Channel Islands," where 51° was the lowest reading.

The *rainfall* has been rather more than the mean in "Scotland, N." and "Ireland, N.," but less in all other districts. A very heavy fall occurred in the extreme west of Ireland, on the night of the 10th.

Bright sunshine does not differ materially from that recorded for the previous week, the percentages of the possible duration varying from 60 in the "Channel Islands" and between 50 and 52 in most parts of England to 26 in "Ireland, N.," and 24 in "Scotland, N."

*Depressions observed.*—During nearly the whole of this period the barometer was highest over the southern and south-eastern parts of our area, with depressions moving in a north-easterly direction some distance to the north-westward and northward of Scotland. Local irregularities of pressure were occasionally observed over our islands, but the only depression worthy of notice was a well-defined subsidiary which passed north-eastwards over our extreme north-west coasts on the 11th. Fresh or strong southerly to south-westerly winds were very general on our western and northern coasts, but in the south and east light or moderate south-westerly to westerly breezes were most prevalent.

## Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

GUM CISTUS.—I should feel much obliged if any one would send me a flowering spray of the Gum Cistus (C. ladaniferus) as figured in Sweet's *Cistineæ*, No. 1. In the plant I want to see the leaves are narrow, clammy, and almost sessile, with a large solitary terminal flower, pure white, with dark spot at the base of each petal. *Henry N. Ellacombe, Bitton Vicarage.*

PRESERVING ROSE BLOOMS.—Will any one kindly inform me how I can preserve Rose blooms to fill a large bowl? What cones, seeds, leaves, &c., would be suitable to mix with them, and what process they should be subjected to so as to emit a pleasant odour during the winter months? *W. Comfort.*

## Answers to Correspondents.

CLEMATIS: *W. K.* You will do better to send flowers and foliage to some of the nurserymen who raise these plants. We cannot name florists' varieties from single flowers.

CREEPING JENNY: *C. W.* It is the common English name of Lysimachia nummularia, sometimes called Moneywort.

DISEASED CHRYSANTHEMUM: *G. G. P.* Next week.

GARDENIAS: *Y. Williams.* They are very badly infested with aphides. Try some of the well-tried insecticides, applied with a sponge, so as to thoroughly cleanse the foliage; and for the future keep the insects in check by fumigation, &c.

INSECTS ON STRAWBERRIES: *G. Paton.* The frothy masses observed on your Strawberries are deposited by the larvæ of one species of Frog-hopper (Aphrophœa spumaria). It is ejected from their bodies for their protection. If you push aside the froth—which, by the way, is nothing more than minute bubbles of water—a small, soft, whitish body will be found therein, which has the power of jumping, by means of its hind-legs, immense distances.

MONSTROUS BEGONIA: *R. F. S.* It is not very unusual for the upper leaves to become petaloid. We have figured some much more extraordinary examples of the kind in former volumes.

NAMES OF PLANTS: *A. S.* Abelia triflora.—*The Surveyor, Torquay.* Mesembryanthemum edule.—*W. S.* 2, Melica ciliata.—*Orchidomaniac.* Chelidonium majus, not Thalictrum; Epipactis latifolia variety.—*R. J. H.* 1, Silene; 2, Kalmia latifolia; 3, Philadelphus coronarius; 4, Galega officinalis var. alba; 5, Borago officinalis.—*A. G.* Celsia cretica.—*A. H. S.* Lonicera Ledebourii, hardy shrub.—*Notts.* 1, Scabiosa arvensis; 2, Lathyrus pratensis; 3, Scabiosa columbaria; 4, Epilobium parviflorum.—*J. M.* Cotoneaster frigida.—*X. Y. Z.* 1, Avena flavescens; 2, Aira cæspitosa.—*John Leman.* Eucharis amazonica. Double flowers are by no means of rare occurrence; yours results from the union of two flowers: you are not likely to be able to perpetuate it.—*J. Earl.* Stanhopea saccata; Epidendrum selligerum.—*W. H.* 1, Aerides affine var.; 2, Odontoglossum Schleiperianum; 3, Epidendrum Grahami; 4, Epidendrum fragrans; 5, Œnothera speciosa.—*S. M.* 1 and 2, Cnicus heterophyllus; 3, Inula Hookeri.—*Ficus.* 1, Neilia opulifolia; 2, Pentstemon procera.—*G. F. G.* 1, Chrysanthemum macrophyllum; 2, Aconitum theliphonum; 3, Gladiolus segetum; 4, Euphorbia sp.; 5, Euphorbia dulcis; 6, Mulgedium alpinum.

ORCHIDS AT THE FLORAL COMMITTEE: *H.* We cannot publish your letter, dealing, as it does, with what should be discussions at the committee. The committee may have had good reasons for what they did, and their refusal to give a certificate on this occasion does not necessarily indicate that they thought ill of the plant. Another time, when in better condition, they may give the award. The same post brought us a complaint the exact opposite of yours, and saying that annuals and seedlings of biennials and perennials were passed over in favour of Orchids.

PEA: *E. C. C. D.* The so-called Mummy, or Crown Pea, a fasciated variety. The mummy story is all nonsense.

TOMATOS AND SMALL WHITE FLY: *Amateur.* Fumigate with tobacco-paper, or use liquid insecticides, at short intervals.

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post-Office, Drury Lane, London, W.C.

## CATALOGUES RECEIVED.

THOMAS METHVEN & SONS, Edinburgh—Dutch Flower Roots.

EUGENE VERVAET DE VOS, Indian Azalea Nursery, Swynaerde, near Ghent—Autumn Catalogue.

PETER VAN VELSEN & SONS, Hontvaart, Haarlem—Dutch Flower Roots.

COMMUNICATIONS RECEIVED.—H.—A. W.—J. J. W.—H. E. G.—E. V. B.—T. S. T.—W. R.—J. F. (next week).—Rev. H. E. Ryde.—J. M.—F. W. M.—H. Correvon, Geneva.—E. Im Thurn, British Guiana.—J. Hart, Jamaica.—H. G.—Marples & Co.—M. A. L.—E. B., Orbe, Switzerland.—W. F.—J. G.—W. T. C.—W. O. H.—Sir J. L.—S. H.—Alph. de Candolle, Geneva.—J. B. M. (next week).—G. F. W.—Illey & Sankey, shortly

# Markets.

*COVENT GARDEN, July 16.*

WITH heavy supplies, and demand falling off, prices are again lower, our market all round being heavy. *James Webber, Wholesale Apple Market.*

FRUIT AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Cherries, ½-sieve | 4 | 0 | Lemons, per case | 15 | 0 |
| Currants, red, ½-sie. | 4 | 0 | Melons, each | 2 | 0 |
| — black, ½-sieve | 3 | 0 | Peaches, per doz. | 2 | 0 |
| Figs, per dozen | 2 | 0 | Pine-apples, Eng. lb. | 2 | 0 |
| Gooseberries, ½-sieve | 2 | 0 | — St. Michael, each | 2 | 6 |
| Grapes, per lb | 1 | 6 | Strawberries, per lb. | 0 | 3 |

| | s. d. | s. d. |
|---|---|---|
| Lemons, per case | 15 | 0 |
| Melons, each | 2 | 0 |
| Peaches, per doz. | 2 | 0 |
| Pine-apples, Eng. lb. | 2 | 0 |
| — St. Michael, each | 2 | 6 |
| Strawberries, per lb. | 0 | 3 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. |
|---|---|---|
| Artichokes, Globe, per dozen | 3 | 0 |
| Asparagus, English, per bundle | 1 | 6 |
| Beans, Eng., per lb. | 0 | 6 |
| Beet, per dozen | 1 | 0 |
| Cabbages, per dozen | 1 | 0 |
| Carrots, per bunch | 0 | 6 |
| Cauliflowers, English, spring, per doz. | 2 | 0 |
| Celery, per bundle | 1 | 6 |
| Cucumbers, each | 0 | 9 |
| Endive, per dozen | 2 | 0 |
| Garlic, per lb. | 0 | 6 |
| Herbs, per bunch | 0 | 2 |

| | s. d. | s. d. |
|---|---|---|
| Horse Radish, bun. | 3 | 0 |
| Lettuces, Cab., doz. | 1 | 0 |
| — English Cos, doz. | 1 | 6 |
| Mint, green, bunch | 0 | 4 |
| Mushrooms, basket | 1 | 0 |
| Onions, per bushel | 6 | 0 |
| — Spring, per bun. | 0 | 6 |
| Parsley, per bunch | 0 | 4 |
| Peas, per quart | 1 | 0 |
| Radishes, per dozen | 1 | 0 |
| Small salading, per punnet | 0 | 4 |
| Spinach, per bushel | 4 | 0 |
| Tomatos, per lb. | 1 | 0 |
| Turnips, new, bunch | 0 | 6 |

POTATOS.—English, new, 8s. to 9s.; Jerseys, 8s. to 9s. per cwt.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 | 0-24 | 0 | Foliage Plants, various, each | 2 | 0-10 |
| Arbor-vitæ (golden), per dozen | 6 | 0-18 | 0 | Fuchsias, per dozen | 4 | 0-9 |
| (common), dozen | 6 | 0-12 | 0 | Hydrangeas, dozen | 12 | 0-18 |
| Begonias, per dozen | 4 | 0-12 | 0 | Lilium auratum, per dozen | 30 | 0-40 |
| Bouvardia, dozen | 9 | 0-15 | 0 | — longifolium, doz. | 18 | 0-30 |
| Calceolarias, doz. | 4 | 0-6 | 0 | Lobelia, per doz. | 3 | 0-6 |
| Carnations, 12 pots | 6 | 0-12 | 0 | Marguerite Daisy, per dozen | 8 | 0-15 |
| Cyperus, per dozen | 4 | 0-12 | 0 | Musk, per dozen | 2 | 0-4 |
| Dracæna terminalis, per dozen | 30 | 0-60 | 0 | Myrtles, per dozen | 6 | 0-12 |
| — viridis, per doz. | 12 | 0-24 | 0 | Palms in variety, each | 2 | 6-21 |
| Erica, various, per dozen | 9 | 0-12 | 0 | Pelargoniums, per dozen | 6 | 0-18 |
| Euonym. in var. doz. | 6 | 0-18 | 0 | — scarlet, dozen | 3 | 0-9 |
| per dozen | 6 | 0-24 | 0 | Rhodanthe, per doz. | 6 | 0-8 |
| Ficus elastica, each | 1 | 6-7 | 0 | Spiræa, per dozen | 9 | 0-18 |
| Ferns, in var., dozen | 4 | 0-18 | 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 | 0-4 | 0 | Myosotis, 12 bun. | 2 | 0-4 |
| Arum Lilies, 12 blms. | 3 | 0-6 | 0 | Pelargoniums, per 12 trusses | 0 | 6-1 |
| Bouvardias, per bun. | 0 | 9-1 | 0 | — scarlet, 12 trusses | 0 | 4-0 |
| Carnations, 12 bun. | 2 | 0-4 | 0 | Pinkes, 12 bun. | 4 | 0-6 |
| — 12 blooms | 1 | 0-2 | 0 | Primula, double, bun. | 0 | 9-1 |
| Cornflower, 12 bun. | 2 | 0-4 | 0 | Rhodanthe, 12 bun. | 6 | 0-9 |
| Eschscholtzia, 12 bun | 2 | 0-4 | 0 | Roses (indoor), doz. | 1 | 0-3 |
| Eucharis, per dozen | 3 | 0-6 | 0 | — coloured, dozen | 2 | 0-4 |
| Gardenias, 12 blooms | 1 | 6-4 | 0 | — per doz. bunches | 2 | 0-6 |
| Lapageria, white, 12 blooms | 2 | 0-3 | 0 | — red, 12 blooms | 1 | 0-2 |
| Lilium longiflorum, 12 blooms | 1 | 0-4 | 0 | — Moss, 12 bun. | 2 | 0-5 |
| — candidum, 12 bunches | 6 | 0-10 | 0 | Spiræa, 12 bunches | 6 | 0-9 |
| — 12 blooms | 0 | 6-1 | 0 | Stephanotis, 12 sprays | 2 | 0-4 |
| Marguerites, 12 bun. | 3 | 0-6 | 0 | Sweet Peas, 12 bun. | 2 | 0-4 |
| Mignonette, 12 bun. | 1 | 6-3 | 0 | Sweet Sultan, per 12 bunches | 4 | 0-6 |
| | | | | Tropæolum, 12 bun. | 1 | 0-1 |

## SEEDS.

LONDON: *July* 15.—The market for farm seeds still remains quiet and uninteresting. New seeds of various kinds are coming to hand, the present weather being favourable for harvest operations. Samples of this season's Rape seed, Trefoil, white Clover, and Trifolium incarnatum have been shown, but values are not yet fixed. French dealers continue to ask such high rates for their Trifolium that business is prohibited. Hemp seed continues cheap. Canary seed remains steady, with but a small business passing. There is a firmer feeling for feeding Linseed. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday prices for Wheat remained about where they were on the preceding Monday, though supply of native produce was light. For foreign Wheat and flour buyers showed more reserve in their operations. On the other hand, there was no pressure to sell. Perhaps Maize and Oats tended more decidedly in favour of buyers than last reported.—On Wednesday there was very little inquiry for any kind of grain; but on disquieting news from Central Asia rather a firmer feeling became apparent, and some business was done in Wheat and flour at Monday's prices. Barley was slack, and Maize continued quiet. Beans, Peas, and Oats were quiet and unchanged.—Average prices of corn for the week ending July 11:—Wheat, 33s. 8d.; Barley, 28s. 8d.; Oats, 22s. 4d. For the corresponding period last year:—Wheat, 36s. 9d.; Barley, 28s. 2d.; Oats, 23s. 1d.

## CATTLE.

At Copenhagen Fields on Monday the cattle trade was dull, and prices mostly rather lower. Sheep and lambs sold without alteration, and calves with great difficulty at previous rates.—Quotations:—Beasts, 3s. 10d. to 4s. 10d.; and 5s. to 5s. 6d.; calves, 3s. 8d. to 5s.; sheep, 4s. 4d. to 5s., and 5s. 4d. to 5s. 10d.; lambs, 5s. 8d. to 6s. 6d.; pigs, 4s. to 4s. 6d.—Thursday's cattle trade was very quiet. The tendency was weak. Supplies were tolerably good for a Thursday, and were ample for the demand. Both beasts and sheep moved off quietly, at barely Monday's prices. Lambs were dull. Calves were only saleable on lower terms, and pigs were weak.

## HAY.

Tuesday's Whitechapel Market report states that trade was dull, with fair supplies. — Quotations:—Clover, prime, 80s. to 105s.; prime second cut, 85s. to 105s.; inferior, 60s. to 75s.; hay, prime, 70s. to 97s.; inferior, 40s. to 60s.; and straw, 26s. to 38s. per load.—On Thursday there was a moderate supply on sale. Best hay was in demand, and rather dearer, otherwise there was no change.—Cumberland Market quotations:—Clover, best, 85s. to 105s.; inferior, 60s. to 80s.; hay, best, 84s. to 97s. 6d.; inferior, 40s. to 70s.; and straw, 30s. to 36s. per load.

## POTATOS.

The Borough Market report states that with fair supplies there was a steady demand, at the following prices:—Early Roses, £4 5s. to £4 10s.; Shaws, £6 to £6 10s.; Kidneys, £7 to £8 per ton.

**Government Stock.**—Consols closed on Monday at 100 to 100⅛ for both delivery and the account. Tuesday's figures were 100⅛ to 100⅛ for both transactions. Wednesday's final quotations were 98⅞ to 99 for both delivery and the account; and business on Thursday closed at 99⅛ to 99⅜ for both transactions.

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— *From a* —

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| 13½ by 8 for | 10*s. 0d.* | 14*s. 0d.* |
| 14 „ 9 „ | 10*s. 6d.* | 14*s. 0d.* |
| 12 „ 10 „ | 11*s. 3d.* | 16*s. 0d.* |
| 14 „ 10 „ | 13*s. 6d.* | 20*s. 0d.* |
| 15 „ 9 „ | 13*s. 6d.* | 20*s. 0d.* |
| 12 „ 12 „ | 13*s. 6d.* | 20*s. 0d.* |
| 14 „ 12 „ | 18*s. 0d.* | 25*s. 0d.* |
| 16 „ 12 „ | 22*s. 0d.* | 32*s. 0d.* |
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300 squares 15 oz., 8 by 6, or 250 squares, 8½ by 6½, or 220 squares, 9½ by 6½, or 170 squares, 9 by 7½, or 150 squares, 10 by 8, for 15*s. 6d.*

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| 18×12 | 22×16 |
| 20×12 | 24×16 |
| 16×14 | 20×18 |
| 18×14 | 22×18 |
| 20×14 | 24×18 |

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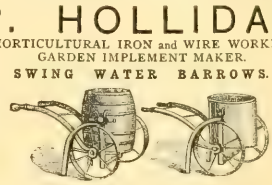
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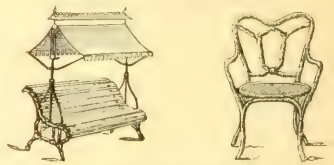
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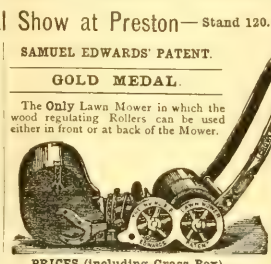
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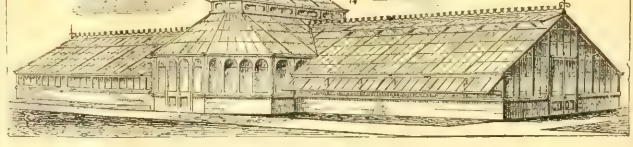
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| 6-in. | 7-in. | 8-in. | 9-in. | 10-in. | 12-in. | 14-in. | 16-in. | 18-in. | 20-in. | 24-in. | Side Delivery. 30-in. | 36 in. | 42-in. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 30s. | 40s. | 50s. | 60s. | 70s. | 90s. | 110s. | 130s. | 150s. | 170s. | 190s. | £22 | £26 | £30 |

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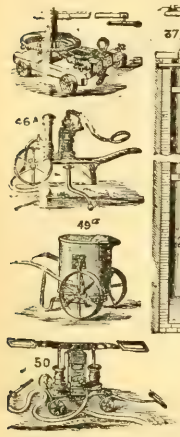
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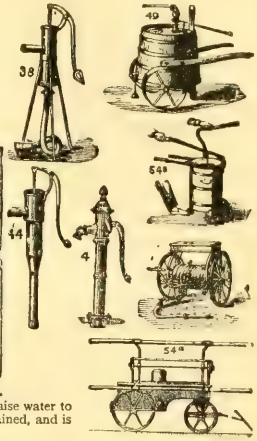


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1885.

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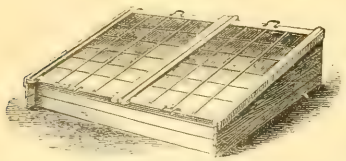
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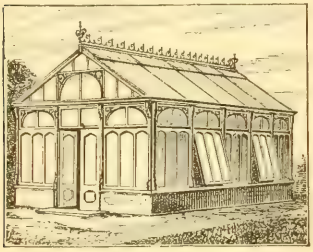
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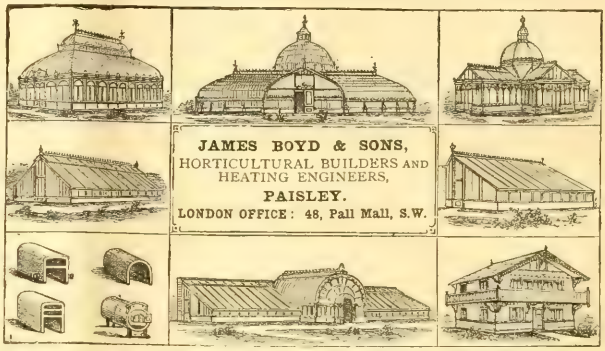
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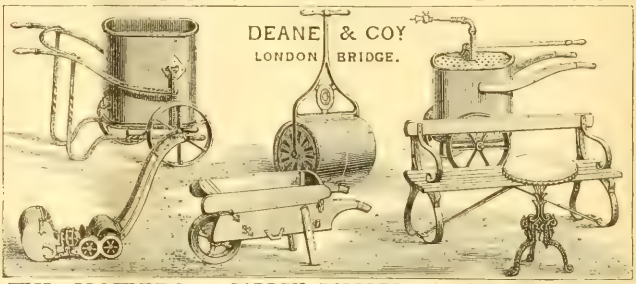


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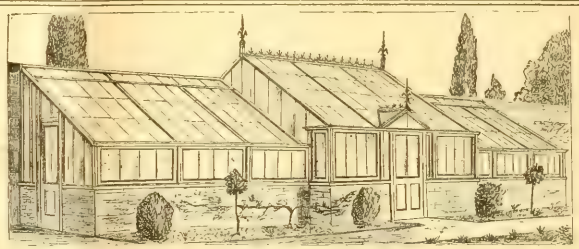
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THE

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## SALES BY AUCTION.

**Special Sale of Orchids in Flower.**

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in Flower will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 12, and he will be glad if Gentlemen desirous of entering Plants for this Sale will please send particulars of same at their earliest convenience.

**Tuesday Next.—Flowering Orchids,**
FLOWERING ORCHIDS—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, July 28, at half-past 12 o'Clock precisely, about 1000 lots of ORCHIDS in flower and from various well known collections, including several fine plants of Disa grandiflora, Mormodes luxatum eburneum, magnificent specimens; Odontoglossum vexillarium, many plants, Restrepia species; Odontoglossum cristatellum, rare, &c.; a consignment of MEXICAN ORCHIDS, received direct for unreserved sale, and other IMPORTED ORCHIDS.
On view morning of Sale, and Catalogues had.

**Friday Next.—Very Valuable Orchids.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, July 31, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA DOWIANA, many new ORCHIDS from the Comoro Islands, PERISTERIA ELATA, CATTLEYA SKINNERI, LÆLIA PURPURATA in fine masses, and many other very fine importations.
On view morning of Sale, and Catalogues had.

**Endersleigh, Harvard Road, Gunnersbury.**
close to Gunnersbury Station.

MR. F. R. HAYES will SELL by AUCTION, on the Premises, on WEDNESDAY NEXT, July 30, at 1 o'Clock precisely, in Lots, a grand Collection of CAMELLIAS, AZALEAS, ORCHIDS, BEGONIAS, PALMS, and STOVE PLANTS, together with other PLANTS, GARDENING TOOLS, ROLLER, LAWN MOWERS, FRAMES, LIGHTS, &c.
On view day prior and morning of Sale. Catalogues at the Auctioneer's Offices, 8, King Street, West Hammersmith, W.

---

WANTED, to RENT, at ONCE, about an Acre of LAND, or a Large GARDEN, with Glass; also a COTTAGE, suitable for a Florist, about 12 miles from London. FLORIST, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE DISPOSED OF, the LEASE of a SEEDSMAN, FLORIST, and JOBBING BUSINESS, in main thoroughfare, with immediate possession. No reasonable offer refused. Must be sold.
B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**To Nurserymen, Landscape Gardeners, Florists, and SEEDSMEN.**

FOR SALE, an OLD ESTABLISHED BUSINESS, in one of the best suburbs of Birmingham, owing to a very serious accident to the present proprietor. The Nursery contains about 2½ Acres, and is well stocked with Shrubs, Trees, and Herbaceous Plants, and Four Glass Houses, Seed Warehouse, Frames, &c., together with a Stall in Market Hall. The above is thoroughly genuine, and will be Sold as a going concern. Possession can be had at once.
Full particulars from FLEETWOOD AND GOODEVE, Auctioneers and Valuers, 42, Cherra Street, Birmingham.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.
Full particulars furnished upon application, personally or by letter, to GEO. T. THEOBALD AND CO., 419, California Street, San Francisco, California.

**To Nurserymen.**

FOR SALE, or TO BE LET, an Old-Established FREEHOLD NURSERY, on high road, close to a city. Noted for Roses and Clematises. Nearly 12 acres, 2 acres covered with Fruit Trees, and Fruiting Bushes; Dwelling House, and Seed Shop; convenient Glass Houses, Barn, Stables, Piggeries, &c.
Apply to Mr. G. B. KENNETT, Solicitor, Norwich.

GARDENER and FLORIST'S. A commanding Nursery, with Dwelling House attached. Situate in the main road. Westward position. Fitted up with all the necessary Plants. Now doing an extensive trade. Long lease. For particulars, apply to
Mr. EAST, 185, Uxbridge Road, Shepherd's Bush, W.

TO BE LET, from September 29 next, a good HOUSE and FARM BUILDINGS, with about 15 Acres of very productive Fruit Plantations; also GARDENER'S HOUSE, and about 13 Acres of MEADOW LAND, situated near Southall and Hounslow Railway Stations.
For particulars apply to J. BUTLER, 176, Hamsell Street, London, E.C.

**To Nurserymen and Others.**

THE DIRECTORS of the ASTON GROUNDS CO. (Limited), Aston Lower Grounds, Birmingham, are willing TO LET, on advantageous terms, the magnificent GREENHOUSES situated at the above grounds, eight in number, heated by Steam Pipes, and including Stove and Propagating Houses, to a responsible firm. The Houses measure from 60 to 100 feet in length, and are at present fully stocked; they are well fitted with strong staging, and are generally in a state of perfect repair. The Greenhouses themselves are situated in an enclosure about 60 yards square, which also contains about 300 feet run of Hardening-off Frames, and Tool Store and Potting Shed; also two Dwelling Cottages. The Aston Lower Grounds are the most important pleasure gardens in the Midland Counties, and are visited annually by nearly a million of people coming from all parts of the Kingdom. This is an offer, which to an enterprising firm would afford an opportunity of acquiring a world-wide reputation, and of establishing at the same time a profitable business. Every facility would be given in the grounds for the Sale of Flowers and Plants.
The Houses can be viewed at any time on application at the Offices, and full particulars may be obtained from G. REEVES SMITH, Jun., General Manager, Aston Grounds Co. (Limited), Birmingham.

**Southampton.—(6209.)**
About a mile from this important Town.
TO MARKET GARDENERS and OTHERS.

TO BE LET, on LEASE, 25 Acres of LAND, in a high state of Cultivation, from September next.
Terms, on application to Messrs. PROTHEROE AND MORRIS, Market Garden Valuers, 67 and 68 Cheapside, E.C.

**Capital Old-fashioned Garden.**

TO BE LET, FAMILY RESIDENCE, facing Clapham Common, having advantages of the above nature not to be found in connection with a modern builder's house, and with but few houses within 30 short a drive of the City and West End. Good accommodation for a family. House much improved and modernised of late years. Stabling, Cow-house, Fowl-houses, &c., Vineries, Stove-house, Rose-house, and Melon Grounds. Worthy the attention of any one who can appreciate a good old garden.
Messrs. M'LACHLAN AND SONS, Clapham Common; and Messrs. DEBENHAM, TEWSON, FARMER, AND BRIDGEWATER, 80, Cheapside, E.C.

TO LET (16 miles from London), a NURSERY of 4 Acres, with 3 Greenhouses, 8-roomed Dwelling House, Stabling, and Shed accommodation. Rent £50. Price for stock, lease, &c., £400.
Apply, R. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**To Landed Proprietors, &c.**

A. McINTYKE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

H. WATERER, Importer of Plants and Bulbs, 389a, Powelton Avenue, Philadelphia Pa. U.S.A., offers:
PAMPAS PLUMES, fresh white, for fall 1885, all picked, 18 to 24 inches, 5s. per 100; 24 to 30 inches, 8s. per 100; 30 per 100; 30 to 36 inches, 8s. per 100; 36 inches and upwards, 15s. per 100. Sent per post.
LILIUMS (orders for these must not arrive later than Sept. 1): auratum, 8s. per 100, 80 per 1000; parvum, 5s. per 100, 50 per 1000; pardalinum, true, 15s. per 100, 140 per 1000; pardalinum var. pubellum, 8s. per 100, 80 per 1000; parvum, 5s. per 100, 50 per 1000; Humboldtii, 8s. per 100, 80 per 1000. Wallace-tomanum, 15s. per 100, 80 per 1000. Very fine packed bulbs.

S. SHEPPERSON, FLORIST, Prospect House, Belper, Derbyshire, begs to offer the following, of which he makes a specialty:
PRIMULAS! PRIMULAS!! PRIMULAS!!!—Grand premier prize strain of the finest new colours, as White, Carmine, Rose, Salmon, Crimson, Mauve, &c.; fine large trusses and beautifully fringed flowers. Strong plants, to bloom well, 12 in 24 per dozen, extra strong, 12 in 36, all true.
CINERARIAS! CINERARIAS!! CINERARIAS!!!—Bibb's celebrated prize strain, dwarf compact habit, and most brilliant colours; cannot possibly be excelled. Good plants, 12 in 36 per dozen; extra strong, 12 in 60, all free.
CYCLAMEN! CYCLAMEN!! CYCLAMEN GIGANTEUM!!!—Grand prize strain, warranted. All the finest new colours. 12 in 60, free; extra strong, 12 in 72, free.
S. SHEPPERSON, Florist, Prospect House, Belper, Derby-shire.

**SOMETHING WORTH HAVING.**

# AQUILEGIA GLANDULOSA,

Grigor's Glandular Columbine (true).

Respecting our variety of Aquilegia or Columbine, Dr. Lindley, in the *Gardeners' Chronicle*, said:—"The plant is perhaps the most showy hardy perennial in cultivation; its stems rise about 2 feet high, and sometimes carry from 50 to 80 blossoms. We have a plant now before us which, after a journey from Scotland, has at expanded flowers, each 3½ inches in diameter, with broad, thin, delicate, spreading sepals, of the deepest ultramarine-blue, surrounding 5 short petals, the upper part of which is pure white, resting on an azure ground. The effect is beautiful in the extreme, and no description that we have formerly given of it has done justice to its exquisite appearance."
Having sent a specimen of this Columbine to the Editor of the *Gardeners' Magazine*, he says (June 20, 1870):—"If we could favour our readers with a sight of a bunch of flowers we have now before us, a few of them would exclaim, 'Prodigious!' 'Wonderful!' 'Glorious!' and so forth. We are bound to be cautious in the employment of the language of eulogy, but we shall probably be quite safe in saying that there is not in cultivation a finer hardy herbaceous plant than Grigor's variety of A. glandulosa, the Glandular Columbine. The plant is robust, handsome, and leafy; the flowers are produced in great profusion; they average 3½ inches in diameter; the sepals deep ultramarine-blue, the corolla pure white with blue spots at the base of each petal, remarkably elegant, distinct, and refined, at the same time showy almost to a fault. We advise all who appreciate first-class hardy plants to secure this Forres edition of an old favourite."

**Now Ready.**

*Price 1 r Strong Flowering Plants, carriage paid, 6s. per dozen, or 2 dozen for* 10*s., likewise carriage paid.*

JOHN GRIGOR & CO.,
THE NURSERIES, FORRES.

# ROSES

IN POTS; all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per doz.

*Descriptive LIST free on application.*

RICHARD SMITH & CO.,
WORCESTER.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant. CATALOGUES gratis. KELWAY AND SON, Langport, Somerset.

**The Success of the Rose Season.**

PAUL AND SON'S
Three New Cheshunt Roses.
H.P. MADAME NORMAN NERUDA.—The perfection of a show Rose. First-class Certificate Royal Horticultural Society, July 14.
H.P. LONGFELLOW.—The new Moss Rose, vigorous, violet. Charles Lefebvre.
H.P. PRIDE of REIGATE.—The finest striped real autumnal flowering Rose. First-class Certificate Royal Horticultural Society, July 14.
The Set of the Three, good Plants in pots, for budding from; or strong good Plants in November; 21*s.* the Set. Order at once.
The "Old" Nurseries, Cheshunt, Herts.

**New Hybrid Aloe.**

ALOE INSIGNIS.—A very beautiful and highly ornamental Aloe, raised from A. drepanophylla fertilised by A. echinata. Flowers remarkable and beautiful; requires ordinary greenhouse culture. Described and figured in this volume of the *Gardeners' Chronicle*, p. 47, f. 41. Orders received will be sent out later in the season; every one should possess this plant. Price 3 Guineas.
Also the new plant, THALICTRUM RHYNCHOCARPUM, with graceful Fern-like foliage, very ornamental. Now offered for the first time; referred to in *Gardeners' Chronicle*, vol. xxi, p. 22. Price 1 Guinea.
Also a large Collection of SUCCULENT PLANTS for sale.
THOMAS COOPER, Exotic Nursery, Brighton Road, Redhill, Surrey.

**Ferns.—Ferns.—Ferns.**
TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20*s.* per 100, £9 per 1000.
ADIANTUM LE GRANDE, nice plants, ready for potting on, 30*s.* per 100.
ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40*s.* and 50*s.* per 100.
The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.



**By Special Warrant.**

"Superb SEEDS for PRESENT and later SOWING."

DICKSON'S CHOICEST strains of PRIMULA, CALCEOLARIA, CINERARIA, CYCLAMEN, BEGONIA, and AURICULA, in packets, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* each. Double German WALLFLOWER, superb strain, 1*s.* per packet. Extra selected Single Dark Blood-red WALLFLOWER, 6*d.*, and 1*s.* per packet. Also all other FLOWER SEEDS for "Spring Gardening," as well as VEGETABLE SEEDS for Present Sowing. Carriage and Post free. Seeds and Plants of every description. Descriptive Priced CATALOGUES Post-free.
JAMES DICKSON AND SONS,
108, EASTGATE STREET, CHESTER.

# GARDEN REQUISITES.

**COCOA-NUT FIBRE REFUSE.**

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 8 bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack
MANGE & GARDEN MATS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G. SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

**Notice.**

COCOA-NUT FIBRE REFUSE: newly made.—Truck-load of 1½ tons, 22*s.*; twenty sacks of same, 14*s.*; forty, 25*s.*; sacks included. All Free on to Rail. Cash with orders.—J. STEVENS AND CO., Cocoa nut Fibre Merchants, "Greyhound Yard," and 153, High Street, Battersea, S.W.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.—Fresh Cocoa-Nut Fibre Refuse, 4 bushel bags, 1*s.* each; 30 for 25*s.*—bags included. Two-Ton Truck, free on Rail, 25*s.* Best Brown Fibrous Kent Peat, 5*s.* per sack; 5 for 22*s.* 6*d.*; 10 to 35*s.*; 20 for 60*s.* Best Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; 10 for 32*s.* Coarse Bedding Sand, 1*s.* 6*d.* per bushel; 14*s.* per ½ ton; 25*s.* per ton. SPECIALITÉ TOBACCO PAPER, 10*s.* per lb.; 28 lb., 21*s.*; cwt., 70*s.* Second quality, 7*d.* per lb.; 28 lb., 16*s.* Finest Tobacco Cloth, 8*d.* per lb; 28 lb. for 18*s.* Leaf-mould, 5*s.* per sack. Peat Mould, 4*s.* per sack. Yellow Fibrous Loam, 3*s.* per sack. Charcoal, 22*s.* 6*d.* per bushel. Bones, Guano, Sphagnum, &c. LIST free. Special prices to the Trade for cash.
W. HERBERT AND CO.,
HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, S.E.
(near London Bridge).

**A GREAT SUCCESS.**

JEYES'

# "GARDENER'S FRIEND."

One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can,
**Effectually Removes all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.**
Price, 3*s.* 6*d.* per Gallon, including drum; 40-gallon Casks, £4 10*s.* Carriage paid.
**JEYES' SANITARY COMPOUNDS CO. (Limited),**
43, Cannon Street, London, E.C.

# THE COLONIAL MANURE.

*Unequalled for Excellence of Quality and Productive Powers.*

| | s. | d. | |
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| Supplied in Tins, | 1 | 0 | each. |
| " " | 2 | 6 | " |
| " " | 5 | 0 | " |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| " ½ " | 20 | 0 | " |
| " 1 " | 37 | 6 | " |

**Special Prices to the Trade on application.**

The COLONIAL MANURE being powerful and lasting in its effects, very little need be used; consequently it will be found more economical than any other Chemical Manure.

The COLONIAL MANURE is to be obtained from all Nurserymen and Seedsmen in the United Kingdom and the Colonies.

*Sole Proprietors and Manufacturers,*

**HAYMAN & BENJAMIN,**

3, 4, 5, 6, CAMOMILE STREET,

**LONDON, E.C.,**

*who only supply the Wholesale Trade and Export Merchants.*

## GARDEN REQUISITES.

TWO PRIZE MEDALS.

**Quality, THE BEST in the Market.** (All sacks included.)

PEAT, best brown fibrous .. 4s. 6d. per sack; 5 sacks for 20s.
PEAT, best black fibrous .. 3s. 6d. " 5 sacks for 15s.
PEAT, extra selected Orchid 5s. 6d. "
LOAM, best yellow fibrous ..
PREPARED COMPOST, best } 1s. per bush. (sacks included).
LEAF MOULD, best only ..
PEAT MOULD, " ..
SILVER SAND, coarse, 1s. 3d. per bush., 12s. half ton, 22s. ton.
RAFFIA FIBRE, best only .. .. .. 1s. per lb.
TOBACCO CLOTH, finest imported .. 8d. lb., 28 lb. 18s.
TOBACCO PAPER " (Specialité) 8d. lb., 28 lb. 18s.
MUSHROOM SPAWN, finest Miltrack .. 5s. per bushel.
SPHAGNUM MOSS, all selected, 2s. per bush., 6s. per sack.
**COCOA-NUT FIBRE REFUSE** (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

**CHUBB, ROUND & CO.,**
WEST FERRY ROAD, MILWALL, LONDON, E.

*YOU CAN IMMEDIATELY*

# Destroy all Insects

*And PARASITES that infest Trees and Plants (whether at the roots or on the foliage) by using*

# FIR TREE OIL INSECTICIDE (SOLUBLE IN WATER)

Green Fly, Black Fly, Woolly Aphis, Grubs, Ants, Worms, Mealy Bug, Thrip, Red Spider, Caterpillars, Mildew, Scale, &c.

From Garden, Greenhouse, or Yard, or Nursery, these and all Insect Pests are speedily cleared by the use of Fir Tree Oil. Effectual, Economical, and Safe. It does not injure Flowers, Foliage, or the Bloom on Grapes, Stone Fruit, &c.

*FIR TREE OIL destroys Lice and Fleas on Animals; it will cure Ringworm and all Skin Diseases produced by Parasites, and respectfully heralds to the Hounds & Show.*

Sold by Seedsmen and Chemists, 1/-, 2/6, and 4/6 a Bottle. Per post 3d. extra. Penn'orth 12 oz. less in larger quantities.

**A Treatise on FIR TREE OIL, as an INSECTICIDE, its application to Plants and Animals, sent Post Free, on receipt of address, by the Manufacturer,**

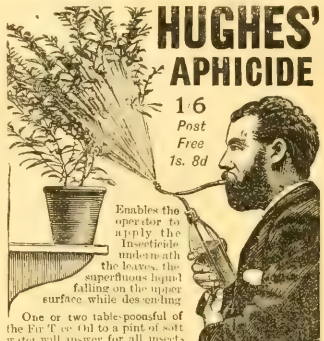
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Wholesale: HOOPER & CO.; COREY, SOPER, FOWLER AND CO.; C. E. OSMAN & CO.; and from all the London Seed Merchants and Wholesale Patent Medicine Houses. New York: BOLKER & SONS.

COCOA-NUT FIBRE REFUSE.—Best and fresh only, 1s. per bag; 15 bags, 12s.; 30 bags, 22s.; sent to all parts; trucks, 23s., free to Rail. PEAT and LOAM.—A. FOULON, 32, St. Mary Axe, London, E.C.

**12-oz. Sample Packets, free by post, 12 Stamps.**

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag. SILVER SAND, Coarse or Fine, 50s. per Truck of 4 Tons. WALKER AND CO., Farnborough Station, Hants.



# HUGHES' APHICIDE

1/6
*Post Free 1s. 8d*

Enables the operator to apply the Insecticide underneath the leaves, the superfluous liquid falling on the upper surface, while destroying

One or two tablespoonsful of the Fir Tree Oil to a pint of soft water will answer for all insects on plants. For further directions see label on bottle.

*E. GRIFFITHS HUGHES, Operative Chemist,*
VICTORIA STREET, MANCHESTER.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

FOR SALE, CHEAP, 100 Loads of good GARDEN MOULD, and 200 Loads of BALLAST. Apply to the FOREMAN of the WORKS, 84, South Lambeth Road, Vauxhall, S.W.



**CROMPTON & FAWKES**
(late T. H. P. DENNIS & Co.),
ANCHOR WORKS, CHELMSFORD.
London Office: Manston House Buildings.
Horticultural Builders in Wood or Iron.
Hot-water Heating Engineers and Boiler Makers.
Best Workmanship and Materials.
Most Moderate Prices.
*CATALOGUES FREE.*


# GARDENERS' CHRONICLE FORM OF SUBSCRIPTION

FROM

TO

W. RICHARDS,
41, WELLINGTON STREET, STRAND,
*LONDON, W.C.*

1885.

*Please send me* "THE GARDENERS' CHRONICLE" *for* *Months,*
*commencing* _____, *for which I enclose P.O.O.* _____.

**Please Note that all Copies Sent Direct from this Office must be paid for in advance.**

THE UNITED KINGDOM:—12 Months, £1 3s. 10d.; 6 Months, 11s. 11d.; 3 Months, 6s.; Post-free.

FOREIGN SUBSCRIPTIONS (excepting India and China):—Including Postage, £1 6s. for Twelve Months. India and China, £1 8s. 2d.

*P.O.O. to be made payable at DRURY LANE, London, to W. RICHARDS.*

G. C. July 25, 1885.

*Cheques should be crossed "DRUMMOND."*

# SUTTON'S SEEDS

FOR

*PRESENT SOWING.*

**POST-FREE.**

## CABBAGE.

| | s. | d. |
|---|---|---|
| Sutton's Flower of Spring .. .. per packet | 2 | 6 |
| Wheeler's Imperial .. .. .. per ounce | 0 | 8 |
| Ellam's Early Dwarf .. .. .. " | 1 | 0 |

## ONION.

| | s. | d. |
|---|---|---|
| Giant Rocca .. .. .. .. per ounce | 1 | 0 |
| Sutton's Giant Blood-Red Rocca .. .. " | 1 | 6 |
| The Queen .. .. .. .. per packet | 1 | 0 |
| Globe Tripoli .. .. .. .. per ounce | 1 | 0 |

## LETTUCE.

| | s. | d. |
|---|---|---|
| Sutton's Improved Black-seeded Bath Cos per oz. | 1 | 6 |
| London Hardy White Cos .. .. .. " | 1 | 6 |
| Stanstead Park Cabbage .. .. .. " | 1 | 6 |
| Hammersmith Hardy Green Cabbage .. " | 1 | 0 |

*Prices and full particulars of other Seeds for present sowing may be had, gratis and post-free, on application.*

*Suttons Sons*

**Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,**

**READING.**

## EARLY WHITE ROMAN HYACINTHS.

## B. S. WILLIAMS

Takes the opportunity of announcing that he has received his annual consignments of the above Bulbs, *which are invaluable for early forcing*, and solicits Early Orders, which will have prompt and immediate attention.

*The Bulbs are unexceptionally fine this year.*

**VICTORIA AND PARADISE NURSERIES,**
UPPER HOLLOWAY, LONDON, N.

# ROSES.

## The Largest Rose Nurseries in the World.

A visit is respectfully invited. No description can convey the slightest idea of the magnificent stock now in flower. They will continue in their beauty until October.

*Descriptive Catalogue sent post-free on application.*

**CRANSTON'S NURSERY and SEED CO.**
(LIMITED),
KING'S ACRE, HEREFORD.

## SEEDLING PLANTS
OF CHOICE
## FLORISTS' FLOWERS.

*We have much pleasure in offering strong, healthy transplanted seedlings from our superb strains of the following:—*

| | Doz. | | 100. | |
|---|---|---|---|---|
| | s. | d. | s. | d. |
| Calceolarias, from choicest flowers only. Beautifully tigered and spotted .. | 1 | 6 | 10 | 6 |
| Carnations and Picotees, from stage flowers. Will produce 80 per cent. of fine double blooms .. .. | 1 | 6 | 10 | 6 |
| " choicest yellow, very fine .. | 2 | 6 | .. | |
| Cinerarias, from a grand strain of beautiful flowers .. .. .. .. | 1 | 6 | 10 | 6 |
| " New, dwarf, large flowered, splendid | 2 | 6 | .. | |
| Primula, Crimson King, magnificent .. | 3 | 6 | .. | |
| " alba magnifica, large, pure white, with beautifully fringed flowers .. | 2 | 6 | .. | |
| " Daniels' choicest red, very fine .. | 1 | 6 | 10 | 6 |
| " " " white, very fine .. | 1 | 6 | 10 | 6 |
| " " " mixed, very fine .. | 1 | 6 | 10 | 6 |
| " " " " extra strong plants .. | 2 | 6 | 15 | 0 |
| " Ferned-leaved, very choice, mixed .. | 1 | 6 | 10 | 6 |

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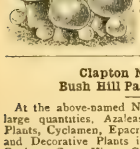
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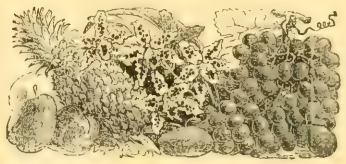
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# Gardeners' Chronicle.

*SATURDAY, JULY 25, 1885.*

## ISLAND FLORAS.*

IT will be within the remembrance of our readers that a scientific expedition, under the command of Captain Nares, was despatched a few years ago, mainly with the object of investigating the depth and nature of the sea-bottom in various parts of the globe, and of studying the physical and natural history of the ocean, and of such lands as might be touched at. It was hoped that many problems in the phenomena connected with the peopling of various lands, and the filiation and dispersion of living creatures might thus be solved, and help to throw light on the past history of the plants and animals which now occupy the globe. How this was accomplished is sufficiently known to the general reader. The collections made were naturally very large, and have occupied the attention of numerous naturalists, some of whom have already published the results of their labours; and as regards generalities, Mr. Moseley has already communicated to the Linnean Society some notes on the general aspect of the vegetation of many places visited.

The botany of continents was naturally but little attended to, but special attention was given to the vegetation of oceanic islands. What are the constituents of the vegetation of such islands? Whence, and in what manner has it been derived?

In the case of islands near the mainland with only a shallow channel between, it is easily understood that the flora of the mainland and of the island are one and the same. Where the distance between the mainland and the island is greater, and the depth of the intervening channel more profound, it is natural to suppose that there are greater variations in the vegetable population, and to infer that the separation has taken place at a period remote in proportion to the degree of diversity of the flora from that of the nearest land. But in the case of most oceanic islets, their recent origin, volcanic or coralline, precludes the idea of their ever having been attached to any continent, and their great distance from any other land lends great interest to the problem of the origin of the vegetation which clothes their surface. The set of the currents, the direction of the prevalent winds, the migrations of birds and other creatures, all have to be taken into consideration, while, of course, the study of the endemic or aboriginal vegetation (where such exists, and has survived the ravages of goats and other destructive agencies), is of surpassing interest to the botanist. These points were ably treated of in Sir Joseph Hooker's lecture on "Insular Floras," published in our columns in 1866, and they form the subject of Mr. Alfred Wallace's instructive book entitled *Island Life*.

But now we have in the bulky volume before us, for the first time, a more complete account of the vegetation of these oceanic islets. The col-

* *Report on the Scientific Results of the Voyage of H.M.S. Challenger, during the years 1873—76, &c.—Botany.* Vol. i., 1885, quarto.

lections made during the voyage of the *Challenger* have been studied by Mr. Hemsley, who in reporting on them has availed himself of what has been previously collected by other travellers, and of what has been published by other writers. When Mr. Hemsley began his task, he tells us, he was inclined to speculate, fascinated no doubt, as so many of us have been, by the writings of Darwin, of Hooker, of Wallace, and of others on this subject, but as materials accumulated Mr. Hemsley found that he would be doing better service by arranging and co-ordinating facts than by framing theories. In the introductory notes on the vegetation of the various islands are given tables showing the numbers and distribution of the genera and species, together with observations on the composition and affinities of the different floras, the agencies operating in the dispersal of plants, and the part played by oceanic currents, drifts, and migratory birds.

The general characters of remote oceanic insular floras are stated by Mr. Hemsley to consist in the large relative proportion of orders and genera to species, in the number of endemic species, the woody habit of a large number of the species, the prevalence of plants with small narrow leaves [perhaps due to the prevalence of wind-storms], and the relative rarity of brightly-coloured flowers [perhaps corelated with a corresponding deficiency of insects].

The islands themselves admit of being roughly grouped into three divisions—those in which there is a large aboriginal endemic element especially in the case of genera, those in which there is a less marked endemic element, and that more especially marked in the case of species; and thirdly, islands in which there is no special endemic element.

In the first group may be placed St. Helena, Juan Fernandez, the Sandwich, Galapagos, and Seychelle groups. In the second category are the Azores, Bermudas, Ascension, the Admiralty Islands, &c. The third group consists of recent coral islands in the Indian and Pacific Oceans. The generalities relating to the floras of these several islands are described by Mr. Hemsley in the introduction, as well as certain special features pertaining to them, such as the relatively large proportion of shrubby Compositæ, the relatively small proportion of Leguminosæ, Coniferæ, Cycadaceæ, Orchidaceæ, and petaloid monocotyledons generally. The species of Carex (Sedge), are found in a large number of islands, both temperate and tropical, some of the islands having species peculiar to themselves, and hence they are made the subjects of specal investigation. Several of the species common in the northern hemisphere are found also in New Zealand, but nowhere else in the southern hemisphere—a circumstance rather d of explanation. Other phenomena of distribution such as the very limited range of certain orders, genera, and even species, are discussed with a view to show that restricted distribution is not confined to islands; thus Campanula isophylla is peculiar to a small strip of coast near Noli, on the Genoese Riviera; Saxifraga florulenta is found on the Alps in the vicinity of the Col de Tenda, and nowhere else; Dionæa muscipula is confined to North and South Carolina; and so forth. Lists are also given of plants known, or surmised, to be distributed by currents, birds, &c. The origin of the antarctic flora is discussed, and then some general remarks on the floras of each one of the islands specially treated of in the present volume are supplied. After these generalities the author proceeds to give a detailed list of the plants of each island or group of islands visited by the *Challenger*, beginning with Bermuda, where one of the most interesting plants is the Juniperus bermudiana, already commented on and figured by Mr. Hemsley in our columns. The Bermuda Lily, L. Harrisi, appears to be known only in cultivation, and is not alluded to by Mr. Hemsley, but how thoroughly it is suited to the climate may be judged from the illustration we gave of a Bermuda Lily ground some time since. The botany of St. Paul's Rocks may be summed up by saying there is none, at least there are but seventeen plants known, and these are sea-weeds. Fernando Noronha seems to have a flora like that of Tropical America, with no specially numerous endemic elements, but the discourtesy of the Governor prevented a full investigation of this little known island. Ascension is next mentioned, concerning the extremely scanty vegetation of which Mrs. Gill has a few incidental memoranda in her charming *Six Months in Ascension*—a book, by the way, not included in Mr. Hemsley's biographical list. Some notes concerning this island may also be found in earlier volumes of this journal, Dr. Lindley having been called on by Government to report on the capabilities of the island. The flora of St. Helena is richer and better known, but the botanist will be glad to have so compendious a summary as that given by Mr. Hemsley. South Trinidad has been visited only by Sir Joseph Hooker and Dr. Copeland. The latter gentleman found enormous numbers of dead trees, but not one living one. A Tree Fern, Cyathea Copelandi, has been discovered here, but up to the present only thirteen species are known from this island. The vegetation of Tristan d'Acunha is fairly well known. The Crozets, Kerguelen, and Heard Islands have a substantially identical flora. In Amsterdam and St. Paul's Islands the Phanerogams and Cryptogams occur in equal numbers, though only thirty-eight species are at present known (excluding cellular Cryptogams).

The third part of the volume is devoted to the botany of Juan Fernandez, the south eastern Moluccas, and the Admiralty Isles. Juan Fernandez is decidedly Chilian in its vegetation, with a strong endemic element. The south-eastern Moluccas have a rich luxuriant vegetation, the constituents of which, unfortunately, are only imperfectly known, and the same may be said of the Admiralty Isles. The work is completed by a chapter on the various seed-vessels, seeds, and other parts of plants collected, as drifts. Moseley even mentions in Little Ki Island a mass of epiphytic pseudobulbs of some Orchid which had been washed up in a storm, but which was still in vigorous vitality.

The work consists of three separate parts, each with separate pagination, and with its own index and plates. Happily the latter are numbered consecutively, so that we are spared the annoyance of three sets of plates in one volume. A general index for the whole volume is a desideratum, and a separate list of the new species and genera described by the author himself would have been an improvement.

Mr. Hemsley has completed, with great ability, what must occasionally have been, from its necessarily fragmentary and discontinuous character, a very perplexing task. Botanists and geographers will be grateful to him for the work he has accomplished, the suggestions he has made, and the references to other literature, that he has supplied. The plates, sixty-five in number, have been executed, very satisfactorily on the whole, by Miss Smith.

Considering the scanty material Mr. Hemsley too often had to deal with, his work compares favourably with that hitherto published in connection with this famous expedition.

—— CYDONIA JAPONICA.—It is the habit of some Pears to flower twice in the season, the second bloom being formed, not on the spur of last season's growth, but on the new shoot of the year, as in a Rose. This year we noticed in the Chiswick Garden that Cydonia japonica is doing the same thing—a pretty clear proof that, great as the difference appears to be physiologically, it is of no "specific" importance.

# New Garden Plants.

## LISSOCHILUS KREBSII VAR. PURPURATA.*

THIS is a far finer plant than the original form, and is really a most beautiful plant. It has conical pseudobulbs, about 3 inches in length, with very stout roots, and broad, thin, plicate, lanceolate acute leaves, the longest of which are a little over a foot long and 2 inches across. The scape is 3½ feet in height, and terminated by a raceme of twenty flowers, four of which only open at a time. The flowers measure sometimes nearly 2 inches across. The sepals are dark green at the back and deep maroon-purple in front, the margins being revolute. The petals are ovate, bright yellow above, and paler cream, faintly veined with red, beneath. The lip dull orange-yellow with the lateral lobes chocolate-purple, streaked with darker lines. The spur tipped with pink. The column is white. The plant, which has been recently introduced by Mr. E. A. Heath, from Southern Africa, is now flowering in the Botanic Gardens, Regent's Park. It does not seem to present any great difficulties in cultivation, and is certainly well worth the attention of Orchid Trowers. *H. N. Ridley.*

## THE FILMY FERNS OF JAMAICA.

A PERIOD of ten years' residence in the island employed in botanical and horticultural pursuits has afforded many opportunities for becoming acquainted with these beautiful members of the cryptogamic flora. A few remarks on their homes, and the climate and situations in which they are found, may therefore be of some interest to your readers, especially to those who have of late years initiated the cool system of treatment for these beautiful plants. Some 450 species, with sixty-five varieties, of Ferns indigenous to the island are now known to exist. The most of which have either been seen by, or specimens are in possession of your correspondent. Of this number some forty-seven species belong to the genera Hymenophyllum and Trichomanes. Their principal home is among the gullies adjacent to, and on the ridges and peaks of the highest range of mountains in the island in situations for the most part nearly inaccessible, and not available for cultivation on account of the steep and precipitous nature of the mountain-side, which often closely approaches the perpendicular, and is seldom of an easier slope than an angle of 45°. In many places the sides of the main ridge is broken into subsidiary ridges by large gullies or ravines through which, during the rainy season, the mountain torrent foams and roars on its way to the sea, bringing down in its course huge boulders of rocks from the heights above. The hills and gullies are clothed throughout with a vegetation wild and varied in its character, in which the Phænogamous flora, though well represented, is eclipsed in point of number and variety by the cryptogamic Ferns, Lichens, mosses, Hepaticums, and fungi, in one form or another, are to be seen on every branch and twig, living or dead; while on the ground they form a carpet, including numberless forms of varying colour and of exqusite beauty. In the few puddles and pools, and on wet rocks among the mosses, many members of the lowest forms of vegetable life find a congenial home. The older and well known forms of Algæ, Desmidiaceæ and Diatomaceæ being met with in fair proportion, while some few, new to science, have lately been discovered. Among the trees composing the forest, lofty specimens of the "Bloodwood," Laplacea hæmatoxylon, Camb., prominently abound, covering the ground below them during their period of flowering with a snowy carpet of their white deciduous blossoms. Podocarpus coriaceus, Rich., the "Yacca" of the natives, is also abundant in places, but its habitat is usually so inaccessible and remote from seaports that its wood, in common with many others indigenous to

* *Lissochilus Krebsii var. purpurata*, n. var. Floribus speciosis; sepalis dorso viridibus antice atropurpureis, marginibus revolutis; petalis dorso splendide flavis, antice pallidioribus, venis pallide rufis; labelli lobo medio luteo, costis purpureo tinctis, lobis lateralibus brunneo-purpureis; calcare brevi apice roseo. Africa meridionalis. Introd. E. A. Heath. *H. N. Ridley.*

Jamaica, though of good value for cabinet use, will not pay the cost of transit to the seaside for export purposes, especially when placed in competition with woods of a similar character more readily obtained from other countries.

Cyrilla antillana, Mich.; Lyonia jamaicensis, Don; Clethra tinifolia, Sw.; Vaccinium meridionale, Sw.; Fadyenia Hookerii, Endl; two species of Dipholis, several Eugenias (Myrtus), and the smooth-leaved members of the Ilicinæ stud the ridges most exposed to the wind, and by their weatherbeaten appearance bear evidence of the humours of wild Boreas. The Composites are represented by Critonias and the arboreous Senecios, and are found in sheltered spots in common with the arboreous species of Solanum, Hedera, and Sciadophyllum, with two or three representatives of the Euphorbiaceæ. Climbing Bamboo (Chusquea abietifolia, Gr.) and several species of Gleichenia, form almost impassable barriers on the more exposed or infertile spots where the arboreal vegetation is somewhat scanty. Types of Melastomaceæ and Rubiaceæ are met with at every turn, while Leguminous trees are rendered conspicuous by their total absence. It is in traversing the ravines, gullies, and ridges of the mountains covered with such a variety of vegetation as I have attempted to describe, that the Filmy Ferns are met with in all their native beauty. The great majority of them are found at high elevations, for the most part in well shaded and sheltered spots, secure from exposure to sun, wind, and storm, and in situations where even at mid-day the atmosphere is nearly saturated with moisture almost every day, even during dry seasons. The mountains are enveloped in cloud and mist, though at times dissolved by the sun, they are again covered, as by a mantle, at the approach of evening. The temperature in these regions may be approximately ascertained, by allowing a reduction of 3° Fahr. for each 1000 feet above sea level, the mean annual temperature of which stands, for Jamaica, at 80° Fahr.

As most of the Filmies are inhabitants of regions between 3000 and 6000 feet, it follows that the temperature most suitable is a range from 62° to 71°, mean annual, which has been proved by experiment to be that which actually exists. The range of daily temperature at 5000 feet is from 19° to 20°. The maximum temperature seldom being above 75°, or the minimum below 55° in the warmest months; while in the cooler months a difference of 5° in both maximum and minimum may usually be observed. To those of your readers who have these gems in cultivation these facts may be of interest, but there are other points relating to their habits and mode of growth which must be attended to as well as humidity and temperature to ensure success with artificial cultivation; but as these points vary with the different species, I would mention them for convenience in connection with each species, in the order in which they are placed in Jenman's *Hand-List of Jamaica Ferns*—a mere list in itself, but soon, I trust, to be followed by a more important descriptive work from the same pen. As the elevation is given at which each species flourish, the temperature it requires can be easily ascertained by noting the foregoing remarks.

LIST OF SPECIES OF HYMENOPHYLLUM AND TRICHOMANES INDIGENOUS TO JAMAICA.

(*The figures between parentheses denote the height above sea level.*)

Trichomanes spicatum (500—1500).—One of the few species found at low elevations, on rocks, in gullies, or by river sides.

T. reptans (3000—5000).—In gullies, on wet rocks, and among the shorter growing Sphagna and Hepaticæ.

T. punctatum (2000—4000).—On trees, in shady woods and ravines.

T. membranaceum (3000—4000).—Grows on wet rocks, beside waterfalls, where it is constantly bedewed with spray, but able to stand some degree of drought.

T. setiferum (4000—5000).—The smallest of the Jamaica Ferns, scarcely ever exceeding three-quarters of an inch in length. Grows on wet rocks in deep shade.

T. apodum.—Not seen growing.

T. muscoides (3000—4000).—Grows side by side with T. membranaceum.

T. pusillum (4000—5000).—On rocks and among mosses on shaded and moist banks.

T. sinuosum.—Not seen growing.

T. Banerottii (3000—4000).—Grows on damp rocks in shaded gullies, living apparently on the decayed remains of Algæ and mosses.

T. crispum (5000—6000).—Finds a congenial home in forests covering the peaks and ridges of the highest mountains. It grows on moss-covered ground on peaty beds; will stand water overhead in quantity.

T. Kaulfussii (5000—6000).—Usually found growing under shade of old decayed tree stumps. Doubtfully distinct from the last. Its habitat may account for the laxness of habit and thinness of texture, which, together with its reduced basal pinnæ, form the best marks of distinction.

T. crinitum (4000—6000).—A very pretty species; evidently does not like a wet jacket. In common with all the villose species, always found hidden on the underside of a rotten tree stump or Tree Fern root.

T. alatum (4000—6000).—Usually grows among mosses at the base of Tree Ferns in shaded situations.

T. Krausii (500—1000).—On naked stems of trees near river courses under thick shade.

T. pyxidiferum (4000—5000).—On the ground among decaying vegetable matter, and on rotten tree stems in dense woods.

T. radicans (3000—6000).—In ravines, climbing on rocks and tree stems, and in shady woods by river sides.

T. lucens (5000).—One of the rarest and handsomest of all the indigenous Trichomanes; usually found on the underside of rotten and overhanging tree stumps. It has a pendulous habit of growth and evidently does not like overhead moisture.

T. rigidum (3000—6000).—Invariably found on the ground, under shade. Fronds often covered with Algæ and Jungermanniæ; grows in stiff clayey soil.

T. scandens (3000—6000).—On the ground and on rotten tree stumps, among mosses and decaying vegetable matter.

T. tenerum (3000).—In very dense woods, on damp dark banks, in clayey soil.

T. trichoideum (4000—6000).—This Fern covers the stems of Tree Ferns, especially Cyathea pubescens, to a height of 10 or 12 feet forming a thick mossy mass in positions where it must receive the drip from surrounding trees.

Hymenophyllum asplenioides (3000—6000).—Covers stems of trees, on which it hangs in a pendulous manner, fairly exposed to light, but not to direct sunshine.

H. abruptum, H. rarum, H. L'Herminieri (4000—6000).—Among mosses on rotten logs on the ground in shady woods.

H. polyanthus (4000—6000).—The most common species; grows in almost every conceivable position, on the variety of which depends the size and substance of the fronds; will stand water freely overhead.

H. sphærocarpum (5000).—On shaded and overhanging damp, clayey banks, among roots, &c.

H. undulatum.—Not as yet noticed *in situ*.

H. axillare (4000—6000).—A soft, flaccid species, growing in large masses on overhanging trees, in such a position as to freely shed any water that falls upon it.

H. crispum (4000—6000).—In similar positions as the last.

H. tunbridgense (4000—6000).—Though answering fairly to the description of the British plant I have reason to think our species is merely a depauperated form of the next.

H. fucoides (4000—6000).—On tree stems and mossy trunks in shady woods.

H. lanatum, H. hirsutum, H. lineare, H. sericeum (4000—6000).—Are all of similar texture, hirsute, pendulous, and impatient of stagnant moisture. Any of them will soon succumb if subjected to the same treatment that H. polyanthus requires. Though impatient of drought they should have a free play of air around them, tempered with humidity. They are found clinging to the shady side of upright or leaning rotten stumps in shady woods.

H. Catherinæ, H. ciliatum (4000—6000).—Both found in precisely similar places, among moss, on decayed logs, and on peaty, moss-covered soil on the ground.

H. elegantissimum (5000).—A most beautifully delicate and fragile species, growing in deep shade in moist situations, on banks, or at the base of Tree Ferns.

H. mitellum, H. microcarpum (4000—6000).—On the ground or dead logs among mosses and Hepaticæ in shady woods.

For all the species one of the first desiderata in attempting cultivation is to secure abundant drainage. The other essentials are a humid but not stagnant atmosphere, and a temperature in accordance with elevation at which they are found. The most suitable potting medium for the generality of species is a mixture of fibrous peat, sharp sand, and a small quantity of thoroughly decomposed leaf-mould, with the addition of a small quantity of well broken porous brick or charcoal which has been well exposed to rain and air to remove its otherwise somewhat caustic properties. *J. H. Hart, Superintendent, Government Cinchona Plantations, Jamaica.*

## TRADE MEMORANDUM.

C. STEINPOCK, Scheibmuhl-Traisen, Lower Austria.

## GUIANA ORCHIDS.

THEIR INSECT FRIENDS AND FOES.—When I saw Coryanthes speciosa flourishing luxuriantly with its oval mass of roots, a nest for myriads of stinging ants, the questions naturally occurred to me:—"What is the connection between the insect and the plant?" "Is there any benefit or injury from the association?" "Did the Orchids grow on the ants' nest, or the insects make their home in the root of the plant?"

These questions can be answered, thanks to Darwin, Lubbock, and other naturalists who have investigated the connetion between ants and Orchids; and confirmed by my own observations in some cases. The Orchid being pendent from small branches, or creeping plants, it affords a secure asylum for the insects, in the same way that the mocking-birds' nest is hung from the outer branches of tall trees to preserve the brood from their enemies. It is certain that the Orchid suffers no injury from its tenants, but on the contrary, flourishes to perfection under such circumstances. That the plant does not originate upon the ants' nest is proved by the fact that young specimens are often found uninhabited, but with bunches of roots similar to the older ones. "Ants plants" derive benefits from their tenants from the fact that these are carnivorous, preying upon such pests as naked caterpillars, cockroaches, and plant mites. It is a common and interesting sight to watch a small regiment of ants carrying a cockroach up a wall, or attacking a live caterpillar; but when an army of yakman or hunter ants make a raid, hundreds of plant-eaters may be seen running, jumping, and crawling, to rid themselves of their tormentors, which hold on in spite of the big jumps of grasshoppers, or the rolling of caterpillars.

In growing these plants near the coast (their tenants having been evicted by the collectors), some difficulty is experienced to keep them free from cockroaches, which gnaw at the roots, and often kill the Orchids in a little time. In collecting them, the supporting branches are cut away quickly, and the whole plant dropped into the water, then pushed under with a long pole until the ants come to the surface. As may be supposed, the collector is almost certain to get well bitten, even with most careful management.

Although the Coryanthes is benefited by its freedom from cockroaches, &c., there is one insect which (being essential to the propagation of the species) it is necessary to attract. The contrivances by which the insect is attracted are among the most wonderful in Nature. Below the bulbs hangs a flower-stem about 2 feet long, near the tip of which five to ten flowers are ranged. The texture of these flowers is fleshy, and probably attractive to cockroaches, but these vermin are kept away by the ants. It is rather difficult to describe the flower in popular language, but the general shape is like a cock, the place of the body being a cup, into which a liquid drips from the horn-like process above. When the flowers open a number of brilliant green flies are seen swimming in the liquid at the bottom. They have been attracted by the smell, which is something like stale meat, and flying at that part which stands above, they fall into the cup, wetting their wings so that they cannot fly out. The sides of the cup being steep and slimy, and the fly smeared over with the liquid, it cannot climb, but moves round and round, like a cockroach in a tea-cup, sometimes being drowned instead of finding the way out. It generally, however, finds its way to the only place of exit, where the column which contains the essential organs of fertilisation comes near to a gap in the cup. Some force is necessary, as the cup is like a spring door, and in pushing through the fly passes the stigma (female organ), ruptures the box containing the pollen (male organ), which, being glutinous, sticks to its back, and is carried off. The wings being smeared it cannot fly, but crawls from one flower to another, and in going through the same process again carries the pollen and rubs it on the stigma, thus fertilising the seeds. Insect fertilisation of Orchids is by no means so certain as that of most other flowers. Seed-vessels are rather rare, even on common species, not one flower in a hundred producing perfect seeds; but as one pod will have 20,000, or more, it is not so necessary for each to be fertilised, as in some other plants. I have often watched the flies doing what is here described, and even caught them with the pollen masses adhering to their backs. [Figures of Coryanthes illustrative of these phenomena were given in vol. xvii., 1882, p. 593. ED.]

The three species of Coryanthes show the best types of dependence on insect friends, but most of the species of Orchids are fertilised by, and many others provide homes for, them. Epidendrum bicornutum has hollow bulbs with small holes at the base, where the ants have their doorway. These bulbs are the perfection of ants' nests, their inhabitants being perfectly sheltered from rain or enemies. This Orchid is difficult to cultivate, even in England, probably from want of its insect protectors.

CATASETUM.

The Catasetums usually have hood-like flowers, and below the hood the pollen masses are contained in little spring boxes. From the anthers or pollen-boxes two antenna-like appendages project inside the hood, one nearly straight and the other bent like a fish-hook. When the flowers open a great buzzing is heard, and a pretty yellow and black bumble-bee is seen hovering round them. Watching carefully you see the insect fly into the flower, and in a moment come out with something sticking to its head. It has tickled the sensitive antenna of the flower, the spring box is opened, and out jumps the pollen mass like a skip-jack, adhering by means of a disc covered with a gum like birdlime. Into another flower goes the bumble-bee, and pushing its head against the stigma fertilises the flower. The pollen masses spring out with considerable force, and when touched with a needle will jump 6 feet, adhering closely to whatever comes in the way.

Many of our Orchids do not get fertilised in Georgetown, probably because the particular insect required does not live near the coast. The white flowered species are generally fecundated by nocturnal moths, and are usually highly scented at night; it is obviously more difficult to see the process in their cases. Once only (in the early morning) I saw a hawk moth with its long proboscis inserted within the flower of Burlingtonia candida.

The scale insects (cocci) are great pests to Orchids. A small black ant is always found with the coccus, apparently living on some exudation from it. I have thought that the ants have something to do with bringing them, acting as nurses, but I have not been able to prove it. Possibly they may carry the eggs from one plant to another, as I have seen some of the dead cocci perforated on the back as if an ant had been getting inside. *J. R.*, "*Demerara Argosy.*"

## A MALAYAN FOREST.

TROPICAL forest would be a better term than jungle, and less likely to be misunderstood; for it is a forest of noble trees, mingled with saplings, tall and slender, growing as close as may be. When one tries to analyse the constituents of the mass, the eye soon loses itself in the confusion of stems, vines, branches, and foliage. There are, however, three kinds of tree conspicuous, that is, tall saplings, shorter trees as tall and straight, a foot or so in diameter, with a green or grey smooth bark; and finally the large brown heavy stems with rugged scaly bark (Dipterocarpus and Dammar Pines). From the latter hang loose swinging vines of every size, from the thickness of twine to stout hawser, sometimes leafy, sometimes like loose cordage, or the tangled rigging of a ship. Then the leaves are of every shape—minute or immense, opening like huge umbrellas, or spreading in feathery sprays like a mist over the water.

These leaves are of every colour. The glorious autumn tints of a European forest are surely outdone by a Malayan jungle. Looking down from any elevation the trees form a mosaic pattern. While I write I see around me crimson and light green, yellow, grey with brown, and even blue tints, like so many gems, for they always glisten with the moisture of the woods.

The stems of the large trees are seldom without festoons of Dracænas, Ferns, and climbing plants. At the branching, or just below where the branches spread out, there is usually a crown of the well-known Bird's-nest Fern (Asplenium nidus), or more rarely a species of Platycerium, or Stag's-horn Fern. A stout Polypodium Heracleum often makes a frill round the stems, with fronds 8 and 10 feet long, a perfect giant of its kind. But the most graceful as well as the most common Fern is Aspidium exaltatum, which hangs down its long feather-like fronds for 6 feet and more from the stems of trees. I once measured a frond drooping from the limestone rocks in Salongore, which was 10 feet 7 inches long, and in no part wider than 4 inches.

We have hitherto been looking above us in this view of the jungle. As we lower our gaze the eyes rest upon the close growth of Bananas and Palms. Below these are the ground Ferns, the Lycopods, Selaginellas, the fallen timber (in great abundance), the fungi (many luminous at night), and many small flowers of Gesneraceæ, Begonias, and Acanthaceæ.

The evergreens, which twine in garlands around the stems of trees, are endless, such as Peppers, Dioscoreas, and the pretty bead-like Dischidia. The latter plant is with difficulty distinguished from a Fern named Drymoglossum carnosum, which spreads its slender brown rhizomes over the stems of nearly every old tree in the peninsula. The barren fronds are nearly round and somewhat about half an inch across, while the fertile ones are like long leaves with the fructification halfway between the midrib and margin. Near the ground most of the trees have long fringes of moss (Jungermannia) with transparent Ferns of the genera Hymenophyllum and Trichomanes.

I need scarcely say that this is the country for Orchids; they abound in every tree and rock, which, I am sorry to add, they do not in general adorn. Few of them have conspicuous flowers, the general aspect of their fleshy stems forcibly reminds one of half-withered Cabbage stumps. Yet, as they will grow anywhere, there is a great taste for hanging them everywhere by amateur gardeners in the Straits Settlements. Thus verandahs become places in which you can scarcely walk with safety. These plants are perfect ants' nests, with an occasional centipede ready to invade the bedrooms as soon as the rainy season sets in.

There is a curious phenomenon connected with the undergrowth of the jungle for which I cannot account. Mosses, Ferns, and small plants, such as Selaginella, Ferns, and Melastomads (Sonerilla especially) are clothed in certain areas with a beautiful metallic lustre of the clearest blue, like the blue of steel. It affects all the plants in the locality.

I have not mentioned yet the extraordinary brilliancy of the variegations of leaves among certain shrubs, notably Maranta, Begonia, Caladium, Anæctochilus, and Sonerilla. They all grow here in the greatest profusion close to the ground; a small Sonerilla, with dark-green heart-shaped leaves, regularly dotted with brilliant white, sometimes covers acres of ground. I would say more about the Begonias, but every horticulturist knows what they are better than I can describe. This country is one of their homes. It will be news to many perhaps to hear that the Malays use the succulent leaf-stalks precisely as we do Rhubarb.

It need not be said that such a vegetation gives a shade which the sun can scarcely penetrate. Just at the place I am describing the forest was opened to the sky by the stream, whose banks were fringed by many an ornamental shrub and flower. Crinum, Pandanus, and Caladiums grew in the water; Ixora coccinea was also common, so that every few yards the colour was varied by its thick clusters of star-like scarlet blossom. Another glory of the jungle is Æschynanthus, a beautiful crimson creeper often seen on trees.

I might particularise many other flowers, but it must be admitted that the Malayan jungle derives its beauty more from its graceful masses of vegetation than from flowers, and thus, with all its luxuriance and magnificence, there is a certain sameness everywhere—lovely, if you will, but which palls somewhat when you get nothing else.

I must not omit to mention, however, that several of the fruits are very ornamental. The crimson Modecca is just like a large Capsicum; the fruit of a Dysoxylon like an Orange, while the open seed-pods of some Pithecolobiums equalled any flower in brilliancy. The Malays brought us in wild fruits such as Mangosteens, Lunsats, and some wild Grapes, but none very savoury; indeed, some of the party suffered much from a burning throat and tongue after eating the Grapes.

For vegetables we had Yams (Dioscorea) and the white inner leaves of a Cabbage Palm, which was very agreeable when cooked, besides the stalks of the Begonia leaves already referred to. All the shrubs are juicy and succulent, as one might expect in a country where rain, rain, rain is the usual weather.

Gutta trees of the genera Icosandra, Bassia, and Willughbeia were common. A small incision into the latter, which bears a large edible fruit, exudes a thick viscid white juice, which one can wind off in round balls. In a few minutes it becomes elastic, like indiarubber. There are many trees here with milky juices, but only a few harden into a good gutta. The Malays of Keddah, however, have a method of hardening some of these sufficiently to make them useful in adulterating the valuable kinds of rubber. My men showed me how this was done. They collected about a pint of juice and mixed it with common salt, which caused it to curdle. The compressed curds from this juice made a hard white ball about 1½ inch in diameter. It was not elastic, but broke into pieces like enamel, yet not without a hard blow. The substance wants all the elastic qualities of good gutta, but still might be turned to many useful purposes. The tree from which the juice was obtained was conspicuous for its enormous leaves, shaped like a Fig leaf, and often 2 feet in diameter. It is a species of Pterospermum (acerifolium?), and is common throughout the Malay peninsula and China. I also noticed it as one of the most common trees in North Borneo.

It was rather amusing to notice one way in which the Malays made use of the true gutta juice. When their thin calico clothes were torn—the lacerations, I need hardly say, being frequent and considerable—they used to mend them by bringing the edges together and plastering the rent with gutta juice. This made a permanent and strong joint, with the additional advantage of being waterproof. *J. Tenison Woods.*

## SAXIFRAGA PALLIDA, WALL.

LEAVES green, very spreading, forming a flat rosette, 1—2 inches in diameter, with a flat petiole and an elliptic or roundish limb, more or less toothed on the margin, ½—¾ inch long, ⅜—½ inch broad, sparsely covered, as well as the peduncles, pedicels and bracts, with short-jointed colourless hairs (scarcely glandular). Peduncles 1—4, 1—4 flowered, 1—4 inches high, including the ½—2 inches long pedicels. Flowers ½—¾ inch in diameter; basal part of the calyx obconic, calyx-lobes broadly ovate, subacute, at first suberect or a little spreading, but during the ripening of the fruit becoming more or less reflexed, dull green, or reddish tinted, glabrous, 1½—3 lines long, 1—1½ line broad. Petals but slightly spreading, persistent and erect in fruit, elliptical, obtuse, 2—4 lines long, 1½—3 lines broad, shortly clawed, white, with or without red tips and dorsal median line. Stamens shorter than the petals, filaments white, anthers small, red. Ovary half superior, dull purplish-red, styles very short, scarcely any. Capsule large, seeds ellipsoidal acutish at both ends, and covered with beautifully crenulated longitudinal ridges, as viewed under a lens.—S. pallida, Wall., in Sternb, *Saxifrag. Suppl.*, t. 23; Hook., *Fl. Brit. Ind.*, ii., p. 394.

A neat little alpine Saxifrage, native of Sikkim Himalaya, at elevations of between 13,000 and 17,000 feet. Plants of it flowered at Kew this spring, raised from Himalayan seed. It is remarkable for the persistence of the petals during the ripening of the seed, and for the great variation in the size of the flowers. *N. E. Brown.*

## ORCHIDS FOR AMATEURS.

(*Continued from p. 80, vol. xxiii.*

THE last group of Cattleyas contains only a single species—

*Cattleya citrina.*—It is a native of the lofty mountains of Mexico and Oaxaca. It grows from the under-side of the branches of Oaks, so that the whole plant is inverted. The pseudobulbs are about 1 to 2 inches in diameter, egg-shaped, and covered with loose white membranous scales, with two strap-shaped leaves, which are glaucous or mealy. The flower-stalk bears two large waxy yellow flowers, which are bell-shaped and have the perfume of the Jonquil.

The attempt to grow this plant in its natural inverted position does not appear to have been very successful, but splendid specimens have lately been sold grown in baskets, with the leaves and bulbs turned upwards instead of hanging down. It should be placed in the Odontoglossum-house, and needs abundant supplies of air. I believe that a close atmosphere is its greatest enemy, as water resting upon its leaves or amongst its roots is very destructive to it, but like most Orchids it is easily starved, when it produces miserable bulbs and flowers. I do not think it is a plant which ever does well in large cities

or in their vicinity, but I am not sure that even under such conditions it might not be grown with success. Heat and dry air are sure to kill it, and a cold stagnant wet atmosphere is equally fatal to it. *B. T. L.*

*(To be continued.)*

## VANDA DENISONIANA.

This is one of Col. Benson's discoveries in the Arracan Mountains. It was originally described in our columns May 15, 1869, p. 528, when the flowers were described as milk-white, but in the variety hebraica exhibited by Mr. B. S. Williams and by Mr. Nevile Wyatt, at the last meeting of the Royal Horticultural Society, the flowers were of a greenish-yellow colour. As the plant was fully described in our columns at the time of its first introduction, and has been figured in the *Botanical Magazine*, t. 5811, we need now only refer our readers to the illustration at fig. 21, taken from a plant in the collection of Sir Trevor Lawrence.



Fig. 21.—VANDA DENISONIANA: FLOWERS IVORY-WHITE.

## PACKING PEACHES FOR TRANSIT.

The competition which through the liberality of Messrs. Webber & Co., of Covent Garden, took place at South Kensington last week in Peach packing for transit, without doubt created more interest amongst the gardeners present than did other exhibits. We know pretty well all that can be learnt about Peach culture, and are not less familiar with fine fruit; indeed, the show tables show us from time to time that in the matter of Peach growing, both on walls and under glass, our growers can hold their own against the world, always, of course, subject to climatal conditions, which it is to our home growers' credit that they can successfully overcome. But Peaches, whilst very beautiful when hanging on trees, when gathered have often to be sent to remote places, and it becomes a matter of moment to pack them safely, so that they become in no way disfigured.

To gather fruit fully matured, pack it, and enable it to journey safely and soundly over a long distance by rail or other means, and when unpacked to be secure that it shall be as fresh and as delicious eating as if just gathered ripe from the tree, is a problem which it has been the Messrs. Webber's desire to see solved, and satisfactorily. Of course this firm of fruit salesmen are not greatly concerned as to the results of packing Peaches for private use only. They have business transactions with many private gardeners, who in their employers' interests send to Covent Garden large quantities of surplus fruit for sale, and which, if arriving damaged through defective packing, proves unsatisfactory equally to salesman and sender. Old hands at this sort of thing and trade growers as a rule, do their packing well. Private gardeners, whatever their assumed knowledge and ordinary practice, seldom do so to the satisfaction of the salesmen, hence the establishment of these competitions. In previous years we have seen these packing competitions limited to one occasion, and comprising Strawberries, Peaches, and Grapes. That such combination limited competition there can be no doubt, and with a view to make that competition wider, the one class has this year been broken up into three; the first, that for a box of Strawberries, having come off in May; and that for a box of Peaches, of not fewer than twenty-four fruit, last week. The competition for the Grape packing fitly stands over till the Grape show in September. The first competition for the year, that for a box of Strawberries, brought poor competition, and should the prizes be offered another year it is to be hoped that gardeners will show towards them more public spirit. The Peach competition of last week was very satisfactory, as no fewer than eight boxes were sent, although Mr. Webber lamented that none of the older and more experienced packers entered, if but to show younger men how good packing should be done. Still the competition sufficed to establish the fact that with simple means and ordinary care Peaches that are well matured though not soft ripe, can be sent some distance per rail as ordinary parcels with complete safety. A flat deal box from 3 to 4 inches in depth inside according to the size of the fruit to be packed, a little soft tissue-paper, and some clean sweet, dry moss are the materials needed, and not only experience extending over many years, but even the limited competition the other day, showed that the moss is far before wadding, or any other packing material. Moss is soft, cool, and elastic. It leaves fruit at the end of the journey just as when packed, and though so elastic as to offer no pressure on any one part of the fruit yet it grips effectively. Wadding, on the other hand, is comparatively non-elastic, and offers but little resistance to pressure. A box with bottom covered with wadding yields nothing to the touch, but a moss bottom is soft and yielding. The same result is found when wrapping-wadding only parts one soft fruit from another, and equally bad results are reached when thin coatings of wadding divide the fruits, and thick pieces are pushed into the interstices where they cannot touch. Then wadding is absorbent of the juices of the fruit. On opening the boxes the other day the judges were surprised to find how dry and cool was the moss, and damp the wadding, indeed it felt quite moist. It is true that wadding contains a good deal of animal oil, which may promote this sweating, and impart its flavour to the fruit, but it is certain that the chief portion came from the Peaches, and was abstracted from them. How such dampness in the packing material would act disastrously on the fruit in a long journey can be well understood. In the estimation of experienced salesmen wadding is about as bad a packing material as can be found for choice fruit. Of course in packing ripe Peaches in moss careful handling and manipulation are needful: a wrapping first in soft paper, and little of that—indeed, only enough to keep the fruit clean. That should be done with cool hands. Then having placed a neat even layer of moss in the bottom of the box the packer will commence by

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placing a wad of moss in one corner, and hollowing it slightly to suit the form of the fruit; then another wad followed by another fruit, the hollowing process being repeated until the box is full, and each fruit is set in a soft nest. A layer is then laid over the top, the lid is carefully screwed down, and all is secure. For Peach packing purposes moss should not only be collected in the spring, but be kept dry and clean in crates or hampers for this special use. Bran was employed in one of the boxes seen at South Kensington last week, and although simple enough yet is such an uncertain quantity that its capacity to remain firm cannot be trusted. In this one instance it was found on opening the box that either some had escaped during the transit or else that shaking had settled it down unduly. In any case a considerable vacuum was found, which it would have taken a quart more of bran to fill. Oat hulls were also in one case employed with wadding, but the fine points of the hulls penetrated both wadding and fruit, and, in addition, settled down unduly, as did the bran. Absolutely the best packing material is moss, and gardeners will do well to take note of the fact. *A. Dean.*

## PLANTS IN FLOWER AT EDGE HALL.

ROMNEYA COULTERI.—This beautiful Californian Poppy is, without doubt, a difficult plant for cold soils and cloudy climates; but it ought not to be despaired of without a trial, and it is worth the trouble it gives. Good seed is not easy to obtain, as I find that the seed of all Poppies germinates badly in proportion to the length of time it has been kept. A Californian collector of seeds lately complained to me that good things were not appreciated in England, as two years ago he offered seed of Romneya Coulteri in England at a dollar an ounce, and only sold two or three ounces at that price. Some of this seed probably remains on the market. In the spring of last year I obtained a packet of seed from Mr. W. Thompson, of Ipswich, from which I raised more than twenty plants, the seed germinating in a cold frame in three or four weeks. In the spring of this year I obtained seed from three different sources, but did not raise a single plant. Of those I raised last year I distributed the larger part amongst friends having warm gardens, reserving only three. One of these I planted in July last year under a south wall, and hough it did not flower it was 4 feet high at the end of autumn. At the beginning of winter it was surrounded with bricks, on which a hand-light was set, and removed in April. Last year's shoots still remain green, but have made no flower-buds. It is the young wood, thrown up each year from the ground, which alone seem to produce the flowers of the year. Of these there are three or four now 7 feet high, with several branches, each bearing a terminal bud or flower. The flowers do not always open well. The sepals become so hardened as to resemble the husk of a Spanish Chestnut, and from many flowers I have had to pick them off, in order to liberate the petals and allow them to expand. The other two plants which I reserved, were kept through winter in a frame in 7-inch pots, and planted out in May. This treatment stunted their growth, and they do not seem likely to flower this year. Romneya Coulteri is worth a trial in all warm gardens. I saw fine plants of it in flower last summer in the gardens of Sir W. Bowman, near Dorking, and of Miss Jekyll at Munstead. I heard that no seed was ripened in either of these gardens. I have not heard of any way of propagating the plant except from seed.

MECONOPSIS WALLICHII.

The first difficulty with this plant is to obtain good seed. My friends kindly send me seed from many quarters, but only twice have any plants been produced here, once from seed sent by Colonel Stuart Wortley, ripened near Regent's Park, and once from seed of the brown variety produced in Mr. Wilson's garden at Wisley. From the former I raised about 100 plants in the spring of 1883, many of which are now flowering in different parts of the country. At Edge about a dozen are in flower, the average height being about 6 feet. The colour of the flowers varies from reddish-brown to good light blue, but their behaviour is not quite satisfactory. They open few at a time, twelve or fourteen at once on each plant being a full average. Sun or rain soon causes them to wither, and the flowers often have not enough vigour to throw off the sepals which adhere at the points, and finally fall, carrying the unexpanded petals with them. The best situation I find to be under a south wall, shaded from all sun after 10 in the morning by trees; but at the best I have never produced or seen anything like the picture in Miss North's collection at Kew, and conclude that M. Wallichi, like many other Himalayan plants, will always flower better in its mountain home than in English gardens.

LINUM NARBONENSE.

This is by far the finest blue perennial Flax I have seen. I was surprised last week to find in several good gardens in the South, L. perenne growing under this name. The plants had been obtained from nurseries, and this accounts for a statement I have seen in some garden paper that L. narbonense is no better than L. perenne. I first obtained the true plant from a garden at Colwyn Bay, and though tender it has survived the last three winters at Edge. The form of the flower is very different from that of L. perenne. Besides being twice the size and substance the long sepals do not expand, so as to allow the flower to open flat, but form a funnel, giving the flower a campanulate or turbinate form. The petals of L. perenne are about ⅓ of an inch long, whilst those of L. narbonense are fully 1¼ inch. The plant forms a spreading bush, branching at the ground line from a single root-stock, and requires to be increased by cuttings. It dies back in winter nearly to the ground, and is worth being preserved by a *cloche*, but in mild winters requires no protection.

INULA GLANDULOSA.

This very showy plant is always at its best in the month of June, though its flowering season is not long. Some of the flowers, which are bright orange-yellow, are nearly 6 inches across. It increases fast, does well in any position, and requires no attention except a rich dressing in early spring, which greatly improves the flowers. With this treatment more than one of my plants have this year produced double flowers on the same roots with single, imitating in this the habit of Helianthus multiflorus.

ASTER THOMSONI.

This rare and showy Aster from Eastern Asia, comes into flower at the beginning of July, and continues till late autumn. It came to me from a nursery, I think Mr. Ware's, as Calimeris incisa, but Mr. Baker of Kew gave me its true name, adding that mine was the first he had ever seen alive. It grows about 2 feet high, producing flowers abundantly about 2 inches across, of a good lavender colour. It forms a spreading bush, branching at the ground line from a single root-stock, and cannot therefore be divided. It produces abundance of seeds, which germinate sparingly. The leaves are sessile, deeply serrated, more than 2 inches wide near the base, and tapering to an acute point. These leaf characters serve to distinguish Aster Thomsoni from Calimeris incisa, a plant of far less merit for garden decoration, having narrow lanceolate leaves, and flowers with thinner and more straggling rays. *C. Wolley Dod, Edge Hall, Cheshire, July 18.*

## TRIAL-PEAS AT CHISWICK.

IN the same way that the drought has discounted the produce of the ordinary garden crops round London just so has it materially affected the growth and productiveness of the Peas which have this year been grown for trial in the Royal Horticultural Gardens, at Chiswick. Still the trial has not been an unsatisfactory one, especially as far as the earlier kinds are concerned, because all the sorts were sown early and the soil, though not holding, is rich and deeply worked. In spite of the drought there is, however, no mildew, the chief injury resulting being found in the check to that full and complete development of growth and podding without which it is not always possible to find out the true character of the various kinds under trial. Peas, as is well known, need moisture and deep holding soil, but get these requirements almost exclusively when grown under exceptional conditions, unless the season be unusually favourable. When such is the case then the growth and production seen at Chiswick is as good as may be seen anywhere. For that reason we may accept the present season's results as fairly correct, and probably as good as would have been obtained in most other places. Space at Chiswick is at present so limited that an extensive trial of old kinds of Peas, conjointly with new ones, cannot be well carried out, but of course full and complete descriptions of the kinds grown in previous trials may always be referred to if desirable.

In the present case some few old kinds are found with the new sorts, and one result seems to afford proof that in the matter of first early kinds there has been no great advance for several years, indeed it seems doubtful whether we can hope to induce any fair cropping and generally useful kinds to turn in earlier than does Earliest of All; which seems to have the start of all others by two or three days. It is a small podded kind, and valuable only because of its faculty of yielding a gathering ere William I. and Best of All are available. Indeed here First and Best seems to be the very next earliest. This kind has been grown from both English and American seed. A test trial has been made in several cases for the purpose of discerning how far home growth differed from that raised in the United States, the result may be generally stated to be thus:—The American seed came through a couple of days or so earlier, but at blooming and podding time not the least difference could be discerned. The American Royal New Yorker appeared to be the same as First and Best, whilst Alaska not only bore a close resemblance to Earliest of All, but was just about as early to pod.

It is thus seen that, taking these American Earliest with American Wonder as examples of the Transatlantic varieties, that our American cousins are not a whit ahead of us in the matter of precocious Peas. It was instructive to find growing, just for this season, sent by a seed firm, such old kinds as Harrison's Glory, Blue Imperial, and Dwarf Long-pod, the latter perhaps thought to be a fine Pea in its day, but all are poor enough now and hardly worth cultivation, except the former, which is fairly hardy and is thus favoured for field culture. Apart from Telephone, which here as elsewhere seems to be one of the finest croppers and podders amongst tall kinds and one of the earliest, the best kinds are to be found chiefly in selections from stocks sent by Messrs. Jas. Veitch & Sons, and Mr. Eckford.

Before noticing these, however, we must refer to a very fine kind, Sharpe's Early Paragon, a 6-feet kind producing large, well-filled pods; a really first-rate marrow and early. This kind received a First-class Certificate last year.

From Mr. Eckford, who has dropped upon a fine strain of marrows, the best of which, amongst dwarf kinds, seems to be Shropshire Hero, 2½ feet high, and which has been honoured with a First-class Certificate. This is a capital cropper and robust grower. Its pods are somewhat curved, fine, and well filled. It should make a first-rate main crop kind. Emperor is a 6-feet Pea, having pods of a somewhat British Queen type, but a trifle more pointed, fills well, and is a very fine cropper for the mid-season. British Trump, by the same raiser, is also a tall, free cropper, has large handsome pods; Peas sweet and of excellent quality. A very fine kind is Quality; it has green pods of Ne Plus Ultra form, but finer, and is a grand cropper, and of the finest quality—has been certificated. The Baroness, another tall and grand Pea, has fine pods and is a heavy cropper. And last, Eckford's Duke of Connaught, 6 feet high, a grand mid-season Pea; pods long, straight, and full—has been previously certificated.

Messrs. Jas. Veitch & Sons have amongst others, Prodigy, a tall kind, heavy cropper, carries a huge pod, full of heavy seeds, high quality. It is a good mid-season marrow, and has a First-class Certificate. Gladiator, from the same firm, is a capital late kind, 3 feet in height, fine cropper, and with large stout pods. Autocrat, growth from 3 to 4 feet in height, is a dwarf Ne Plus Ultra, pods green and full, and Peas sweet and excellent—a capital late kind. Universal is also from Veitch & Sons, rather dwarf habit, has semi-curved pods, well-filled, and is a fine cropper.

Messrs. Webb & Son's Wordsley Wonder, height 3 feet, crops freely, but the pods are uneven in size, perhaps owing to the season. Its pods are very scimetar-shaped, and the small ones resemble those of the old Auvergne. Chancellor, from the same firm, seems to be a superior kind, has fairly long pods, crops freely, and is a good late variety.

Amongst old kinds Champion of England and Fortyfold, growing side by side, seem to be identical. Ne Plus Ultra is also close by, and shows a fairly good crop. The dwarf Stratagem and Pride of the Market, though generally so good, do not seem to

thrive so well here as the taller Telegraph and Telephone.

Of Mr. Laxton's novelties Seedling No. 15, which has had a First-class Certificate, and is 6 feet in height, is a very fine podded kind, in the best sample, but not quite true generally, seems to be the best. Ameer, just certificated, is but a reproduction of William I., with pods a trifle finer.

Bliss' Abundance, First-class Certificate last year, is a good Pea, but their D. A. No. 2, 3 feet high, looks better.

It would very much facilitate the work of testing these novelties if raisers would, in sending seed, mention probable height, season, and kind on which any may be thought an improvement.

## COLONIAL NOTES.

Madras Forests.—The annual Administration Report of the Forest Department, Madras Presidency, for 1883–84 has reached us. It is full of statistical detail, relating to the forest products of such places as Thirumaladevarakonda and Molamidakamboladinna! The most important part of this formidable publication for home readers is the list of trees and shrubs of the Northern Circars, compiled from personal observation by Mr. J. S. Gamble. The conservator also points out the necessity of felling trees flush with the ground, so that there may be good coppice-shoots, capable of forming good trees, instead of pollard shoots, which cause the centre of the old stool to rot.

Botanic Garden, Cape Town.

The Director's report for 1884 shows that the great reproach to the colony in the management of the garden still continues and paralyses the legitimate work of the garden.

Finding that the inquiry for Cape bulbous plants is rapidly increasing, these plants have been actively collected and grown from seed. The garden bulb stock housed this year for export has never been equalled in extent. A considerable number of species of terrestrial Orchids has been added, in the hope that the Cape may be represented in European Orchid collections by something more than the old favourite Disa grandiflora, L.

During the temporary relaxation of the original Phylloxera proclamation an endeavour was made to get in a stock of the newest sorts of Roses, Fuchsias, and Pelargoniums. As, however, they did not arrive till after the passing of a resolution in Parliament restoring the prohibition, the stock was given up and destroyed on landing. There is no doubt that while it may be advisable to prevent the importation of rooted plants, whether open or in Ward's cases, the prohibition of dry bulbs and tubers is a refinement of precaution which might as reasonably be extended to the straw packing of bottled wine from phylloxerised districts, to compressed hay, Hops, or even corn itself.

Agri-Horticultural Society of Madras.

This Society has throughout the year earnestly continued its work with a view to compassing the objects for which it was founded very nearly fifty years ago, namely, the promotion of horticulture and the encouragement of improvements in agriculture, and its labours have not been unrewarded, though the season on the whole cannot be called a good one. In the office letter books will be found 1623 letters, many of them of much importance, written and entered during the year, which of course do not include numerous notes written by the officers of the Society, of which it was unnecessary or inconvenient to keep a record. The correspondence of the Society, which is to a great extent a rough gauge of the amount of work it is doing, has very nearly doubled during the last ten years, and trebled since 1869. The principal work of the Society consists in the introduction and diffusion of economic plants, and in the supply of information on such matters. The annual flower show was not so successful as usual, owing to excessive rainfall of the season, and to a cyclone on Nov. 21, 1881.

Royal Botanic Gardens, Peradenyia.

Dr. Trimen's report for 1884 summarises as usual the principal work of the year in the gardens under his charge. A summer-house or kiosk is to be erected in the garden in the native Kandyan style of architecture, in memory of Dr. Thwaites. Tea planting is rapidly superseding that of Coffee, the cultivation of which is rendered futile by the fungus (Hem'leia). Cinchona has also been exported in very large quantities, with the beneficial result of lowering the price of quinine. Cocoa planting is also on the increase.

The "Cacao Planters' Manual"

This little book has been translated from the Dutch, and is published by Kirkland, Cope & Co., Northumberland Street, Strand. The English version is in places peculiar, but not so much so as to seriously interfere with the utility of the book, which we commend to our colonial readers as one worthy their attention. Pruning to a single or to a small number of stems is found most advantageous.

South Australia.

In Dr. Schomburgk's report on the Botanic Garden of Adelaide it is stated that only 18.7 inches of rain fell within the year, the hottest shade temperature being 102° Fahr. The report contains information about a South African tanning plant (Elephantorhiza Burchelli)—the root is the valuable part; Withania coagulans, used as a vegetable rennet to curdle milk; Ipomœa chrysorhiza, the Kumara root, figured in our columns; the Tree Tomato, Cyphomandra betacea, Sumach, &c. In an appendix Dr. Schomburgk gives a long list of plants suitable for cultivation in conjunction with Wheat, the culture of which is not so remunerative as once it was.

Agricultural Affairs in Nova Scotia,

hitherto managed by a special Central Board of Agriculture, have, by virtue of an Act of the Legislature, been assumed by the Government. Professor Lawson has been gazetted as "Secretary for Agriculture." He will be provided with such assistance in the performance of the duties of this office that his academic and laboratory work in the University will not be interfered with. It is intended to adopt a system of training of agricultural teachers, specially fitted for giving instruction in schools, in which Tanner's *Agricultural Chemistry*, with Introduction by Professor Lawson is already in use. A veterinary surgeon will periodically visit the counties. A lecturer on agricultural chemistry is to be appointed to teach in the normal school, and supervise the agricultural teaching in the schools. The Legislature votes annually £1300 sterling to aid agricultural societies, £800 towards a provincial exhibition, and other sums for importation of cattle, horses, sheep, field seeds, &c.

## KHIVAN MELONS.

Concerning things botanical, I had expected much in Khivan fruits, especially the Melons. They are a most lucrative crop. With good management, Koztenko says, an acre will yield from 10,000 to 14,000 Melons, and these, at 1½*d.* each, will bring from £50 to £70. M. Brodovski says that about Samarkand an acre yields 10,000 Melons. The natives hang them in cool characters to the ceilings, where certain sorts will keep from the time when they are ripe till the following May. Matmurad gave us the price of Melons from 12*s.* to 20*s.* per 100. There are, of course, several varieties. I heard of one sort, small as an Apple, but pronounced very good; some are 1½ foot long. On their winter Melons Matmurad did not appear to set much store, but said that two varieties, ripe at harvest, were sweet as sugar, though they would not keep. My host gave me seeds of five kinds, which, as did Colonel Burnaby, I brought to England, hoping that I might be more fortunate than he in raising them. I must say that, after eating Central Asian Melons, I have tasted none in England that are by comparison worthy of mention. Those I ate in Constantinople came nearest, and hence, believing that I had real treasures to give, I distributed the seeds to such of my friends and acquaintances as had convenience for growing them. The five kinds were called:—1, Katai (or Chinese); 2, Zamcha; (3) Kutcha, all sown in Khiva in April, and ripen in about two months, or say the beginning of June; whilst the remaining two (4) Sherin-pitchek, and (5) Alikeh, are ready a week or two later. Mr. J. D. Allcroft sent me the first fruit in 1883, less than a foot long, somewhat Pear-shaped, of green flesh, but tasteless, and not juicy—I fear not quite ripe. Earl Stanhope kindly tried some seeds the same season, at Chevening. Mr. Gray, the head gardener, informs me that one plant was raised of such rampant growth that it ran on a trellis over a space of nearly 200 square feet, covering half the roof of the glasshouse, and then would have spread further if permitted. It was planted early in March in an ordinary loam and leaf soil with bottom-heat. For a long time the blossoms, with one exception, did not set, and that one produced a large ovate Melon of 10 lb. weight. Subsequently other blossoms set, and were growing fruit weighing 3 or 4 lb. each, when unfortunately the plant gave way through rot at the collar, and died. The plant took quite five months to grow. The large Melon was cut a little too early, and was lacking in the juicy qualities it probably would have acquired had it been left longer on the plant; but the gardener considered it a good Melon. Next year three sorts were tried by Mr. A. F. Barron, of the Royal Horticultural Society's Gardens at Chiswick, but he did not report very satisfactorily upon them. Of those he tried one did not fruit, a second produced two long ovate Melons, and the third round fruit; these ripened, the flesh being tender, very juicy, even watery, but by no means rich. Mr. Barron adds, "They were rather rampant in growth, and did not fruit readily, but the foliage was somewhat destroyed by the hot sun, and this, no doubt, affected the fruit." Mr. Wildsmith, of Heckfield Gardens, near Winchfield (Viscount Eversley's) spoke of the Alikeh as best of the three kinds he raised, and not so rampant in growth as the other two, but, though speaking of the Zamcha as excellent, thought them no better in quality than English Melons. The Zamcha was tried also at Burghley Gardens (the Marquis of Exeter's) by Mr. Gilbert, who is famous, I am told, for growing Melons, and he exhibited from my seed a fruit weighing 11¾ lb. at the Royal Horticultural Society's Show on September 9 last. Another fruit from the same plant, weighing 9½ lb., was of green deep flesh, and though not of very rich or aromatic flavour, was liked for its great juiciness. The appearance of the Kita Melon, as reported on from Burghley Gardens, was not flattering, being "precisely like a large Vegetable Marrow, and of a dark green colour." I sent seeds to my friend Dr. Haughton, to be tried in the botanic gardens of Trinity College, Dublin. He committed them to Mr. Burbidge, who distributed some seeds to a few English gardeners who made Melons a specialty. From the correspondence that ensued, I learn that Mr. O'Donovan, who penetrated to Merv, thought the introduction of Central Asian Melons to Europe so desirable, that he carried some of the seed in his saddle-bags 4000 or 5000 miles, and spoke of them as of marvellous excellence. Mr. Simpson, of Wortley, grew some of Mr. O'Donovan's Melons, but they proved insipid and flavourless, or, at best, just passable. He also tried some of my seeds, of which only one, the Sherin-pitchek grew, and this he pronounces as the same type as O'Donovan's. Mr. Simpson says, "I gave it a light all to itself, but it was rather straggling and weak from the first, and could not endure the bright sunshine. It lost its foliage, and the single fruit it bore never ripened properly." It was sent, however, to Dr. Haughton, and thought highly of. Dr. Haughton received, too, a Zamcha Melon, grown at Lord Eversley's, weighing 4 lb., of which he subsequently told me that, though familiar with American as well as British Melons, he never in his life ate any as fine as this from Khiva. Previously to receiving this information I was becoming dispirited, and thinking that my seeds would turn out no better than those of Colonel Burnaby or Mr. O'Donovan. Another trial, however, has been made of the "Abikeh" at Chevening, where the gardener, taught by experience how much space was necessary, planted the Melon under a frame with five lights, expecting it to cover the entire area. I saw the plant thus growing on September 5. It was not so strong, I was told, as that of the previous year, but it had three half-grown fruits of fair size. One of these was sent to me, not quite ripe, on October 13, which, upon eating ten days later, I was delighted to be able to pronounce quite equal to those I had eaten in Khiva, and far more delicious than anything I had ever tasted in England. This opinion was shared by others with me at the table. This ovate fruit measured 8 inches long, and was green-fleshed, juicy, sweet, and eatable to the skin. Thus I consider that Mr. Gray and Mr. Wildsmith have demonstrated that two kinds, at all events, of the Khivan Melons can be grown in England. The former considers the Alikeh Melons require plenty of

heat, and a long season, since English Melons planted simultaneously with them ripened six weeks before those from Khiva. This, however, will make the latter valuable for late eating, especially as they have such good keeping properties. I hope, therefore, that English gardeners will learn how to grow these fruits. The great size and robustness of the plants may prevent their having fair play in English houses, but I have given seeds also for outdoor growth in Florida, whence the fruit could easily be sent to the London market, so that if, after all, I do not succeed in getting them on English tables it will not be for lack of endeavour. *Henry Lansdell, D.D.*, "*Russian Central Asia.*"

## DISEASES OF PLANTS.

On the Æcidiospore of Puccinia Vincæ.—The Puccinia and its accompanying uredospore upon Vinca major have long been familiar to us as parasitic upon the large Periwinkle. My friend, the Rev. Canon Du Port, last year sent specimens of this from the eastern part of Norfolk. Being anxious to verify the statement which has been made, that the uredospores are accompanied by spermogonia, Mr. Du Port kindly, this year, sent me, from Oby Rectory, some very fine specimens, which were covered by spermogonia. No uredospores at this time had made their appearance. I noticed, however, that the leaves affected with the spermogonia exhibited a very distinct, although not a powerful, odour—an odour which recalled the perfume of some flower. This in itself is an interesting observation confirming as it does Rathay's statement that the spermogonia of the Uredines are attractive to insects, either by their perfume or by their showy appearance. I was fortunate enough to find this fungus nearer home, namely, in the Rev. A. Groom's gardens at Ashwicken, from which place sufficient material has been derived to further study the life-history of the fungus. The first point which strikes one is that the plants bearing spermogonia are different in habit and growth from healthy ones. The shoots are taller and more erect, the leaves paler in colour, and more elongated than in those of healthy plants; in fact the affected plants look as if they had been "drawn up" by want of sufficient light. More closely observed, a number of dark brown, almost black spots were discovered upon some of the younger shoots. These spots were firm in structure, hard in texture, and looked very like some Dothidea. The leaves bearing them were dwarfed in size, thicker and usually more or less convex. They appeared as if stunted in their early growth. On further examination it became apparent that these blight spots varied in size and colour, being at first almost black and very small, but as they increased in diameter they became paler in colour, gradually assuming a brown tint, but the oldest specimens were surmounted by a delicate film of white dust. The spots themselves were solid cushion-shaped bodies, about a millimetre or two across. Under the microscope a thin section of one showed it to consist of an aggregation of hyphæ, continuous below with the mycelium which pervaded the whole plant, placed parallel to one another and perpendicular to the surface of the leaf. The free summits of these hyphæ were surmounted by colourless globose spores, 10—12 mk. in diameter.

Placed in water these spores in ten or twelve hours germinated by protruding a germ tube, three or four mk. in diameter, into the end of which the almost colourless contents of the spore were passed. The spores themselves were as nearly spherical as possible, and none of them showed any remains of the adherent hyphæ which characterises the uredospore. They appear to be slightly granular from the protoplasm which they enclosed. Colourless æcidiospores are very uncommon, the vast majority being orange or yellow; a few are brown (Rœsteliæ). The spores of Æcidium rumicis are, however, colourless. So unlike any other Æcidiæ were these solid pulvini, that it was only after repeated and careful examination that I could bring myself to regard them in their true morphological significance. When, however, their spore germination was observed their affinities became obvious. It is curious that the structure and functions of these bodies should have hitherto been overlooked, considering the number of observers who have devoted so much time and energy to the elucidation of the Uredines abroad. The two forms of uredospores mentioned by Dr. Winter in Rabenhorst's *Kryptogamenflora*, p. 188, have both of them brown spores more than double the size of the Æcidiospore above described, viz., 20—40 mk. long, by 17—26 mk. wide.

The life-history of Puccinia Vincæ thus appears to consist of (1) a perennial mycelium pervading all parts of the affected plant, which every spring produced spermogonia and æcidiospores; (2) uredo and teleutospores, which arise from the æcidiospores, and, judging from other Uredines, have localised, mycelia of limited duration—*e.g.*, Puccinia tragopogonis, menthæ, epilobii. *Charles B. Plowright.*

Æcidium Betæ.

The æcidiospores of Uromyces Betæ are comparatively rarely seen; they have not been, I think, exhibited to the Scientific Committee. Having hitherto been unsuccessful in finding this Æcidium I determined to cultivate it from the Uromyces Betæ,




Fig. 22.—Puccinia Vincæ.

A, Plant with Spermogonia; B, C, D, Æcidia of same.

which occurs so abundantly every year upon Mangels. I succeeded some time since in producing upon the foliage of two Mangel plants three or four clusters of the Æcidium in question, but an accident happened to the culture, so that I am unable to exhibit them. Lately, however, I met with the Æcidium upon Beta maritana, on the banks of the river Ouse, at West Lynn. The specimen is sent herewith. *Charles B. Plowright, King's Lynn.*

Disinfectants.—A great deal of disappointment may be experienced if people do no realise that deodorising substances, and even antiseptics like green vitriol, are not true disinfectants. They have their advantage in removing evil odour, or checking putrefaction, but they do not necessarily kill the germs on whose life and activity many epidemic diseases depend. Destruction by fire of infected material, and, where that is not practicable, chloride of lime, is the best germicide for general use.

## Notices of Books.

**Russian Central Asia, including Kuldja, Bokhara, Khiva, and Merv.** By Henry Lansdell, D.D. Two volumes, maps and illustrations. Sampson Low & Co.

Many of our readers will remember the remarkable journey undertaken by Dr. Lansdell, and described by him in his work *Through Siberia*. In the present pages we have the record of a journey yet more remarkable, as the title suffices to show. As in the previous journey, so in this, the primary object of Dr. Lansdell was to circulate the Scriptures among the inmates of prisons and among the inhabitants generally. Geography, ethnology and natural history were by no means neglected; indeed, the wonder is that Dr. Lansdell contrived to accomplish so much, for not only does he make no pretence to be a man of science, but he was perpetually travelling for 179 days, during a large portion of which period he knew not the comfort of a bed. The actual distance travelled is estimated at 12,000 miles. Dr. Lansdell clearly is not only a man of great tenacity of purpose and energy, but is blessed with keen powers of observation and an appreciation of matters of interest of whatever nature they may be. Personal observation on the spot gave him the means to fill his note-book with details of what he saw, while a previously organised system of cross-examination enabled him to elicit information from the natives in a less haphazard fashion than is sometimes the case. Official statistics and the writings of others duly digested have been pressed into the service to supplement and annotate the author's personal observations, and thus it happens that in these two handsome volumes we have a fuller and more accessible account of Central Asia and Turkistan than has ever been laid before the public. But few Englishmen have been enabled to penetrate into Turkistan, and over a part of the route traversed Dr. Lansdell claims to have been the first English traveller.

The requirements of three classes of readers have been kept in view—the classes of readers being defined by Dr. Lansdell as general, students, and specialists. We are bound to say the author has most diligently sought to supply the demands of these three classes of readers. For our own part, having read the book from cover to cover, with scarcely a page skipped, we are in a position to judge in some measure of the manner in which the author has supplied the needs of each of the three classes of readers. So far as the general reader is concerned, Dr. Lansdell would, we think, have done well to have condensed his narrative and concentrated his attention upon the more important matters. For this class of readers, Dr. Lansdell is too generous, he gives them more than they will thank him for. The numerous biblical illustrations will, however, be found of extreme interest, and the writer's entry into Bokhara and his intercourse with the natives will be found instructive and entertaining. Political matters the author wisely avoids for the most part, though it is clear he sympathises with the Russians and gives them credit for the good they have effected, and are effecting, in introducing civilisation and settled government in place of barbarism and anarchy. Religious discussions of a sectarian character are also strictly avoided: an earnest religious principle and a high sense of duty pervade the volumes.

The second and third classes of readers are allied by so many bonds that they can hardly be definitely divided, but we think the author has succeeded admirably in giving such a general idea of the country traversed, the manners of its inhabitants, the climate and natural productions, as is required by the student; while for the specialists the appendices relating to the fauna, flora, and literature of the subject, and in some of which the author has had the assistance of various men of science, will of themselves cause the name of Lansdell to be held in grateful memory for many a long year. A copious index, numerous illustrations, and one or two maps serve to render this one of the most complete works of its kind—works that we are accustomed to expect as the outcome of long years of research on the part of specialists, but which in this case has been accomplished almost as speedily as the journey itself. We should willingly, did space permit, make some extracts of a general character; but limited as

we are, we must confine ourselves to a few extracts relating to the vegetation of Turkistan. Readers of this journal will be more or less familiar with the harvest of novelties collected by Dr. Albert Regel, the son of our excellent friend and colleague, the Director of the St. Petersburg Botanic Garden. Many of these have been described and figured in the *Garten Zeitung*, whence we have from time to time made extracts. Dr. Regel the elder has also published numerous papers on the flora of Turkistan, in illustration of the plants collected by Fedchenko and many others; but these papers are scattered through numerous publications, which are not to be met with in general libraries, and not even in all botanical collections. We have, then, to thank Dr. Lansdell for bringing together in one of his appendices a summary of what is known of the flora of Russian Turkistan—a summary in which the several botanical collectors, from Sievers and Ledebour to Regel and Capus, are duly alluded to; and the list given by E. Regel and F. von Herder of Semenoff's plants printed in full. We must not, and do not, complain, but we should have been glad if this list had been extended by the inclusion of the published lists of other botanists and travellers. A relatively small amount of labour would have sufficed to frame a general list of names which would have been of the utmost service to those who desire to know what has been published, and invaluable to the scientific botanist whose duty it will presently be to found a proper catalogue. It is time, however, to let Dr. Lansdell speak for himself, and this we may most appropriately do by quoting at some length what he has to say as to the vegetation of Turkistan.

"The surface of Russian Turkistan, viewed with reference to vegetation generally, may be conveniently divided into the mountain country, oases, steppes, and deserts; and of these last I shall speak when they come in my path. I have already touched upon the arboreous vegetation of the mountains in Semirechia, quoting such authorities as Semenoff, Osten-Sacken, Regel, Severtsoff, and others. To those travellers in the eastern portion of the Thian-Shan must be added Dr. Capus, who travelled in the western portion, preceding me by one year only, and to some of whose papers, since published, I am indebted for information.

"'Taking first the upper and lower limits of the growth of trees they run,' says Dr. Capus, 'parallel to the line of perpetual snow, which varies in the western Thian-Shan, according to MM. Kaulbars and Osten-Sacken, from 8800 to 9800 feet.'

"At Issik-Kul the Juniper (Juniperus pseudo-sabina) is found, according to Dr. Regel, up to 14,000 feet. Dr. Capus found its lower limit in the Bokhariot mountains of Baisoune to be 4000, and in the Karaf-Shan Valley about 3800 feet. In the Alexandrof range, the farther to the west, the larger is the tree. In the Kirghese Ala-Tau at Urianda the trunks are about 14 feet high. The 21 feet stems in the Badam heights are from 14 to 18 inches thick. The high-stemmed Junipers seen by Severtsoff had generally a bare trunk for half their height, the sparse branches measuring about one-fourth of the altitude of the tree, the top of which is generally broken. Above a certain height this tree becomes stunted, and becomes almost horizontal, with the branches only jutting upwards. Towards the south, where the woods decrease, the Juniper grows higher, but it is replaced on the mountains by Firs and Birches. The limits of the Birch tree (Betula, sp. not European) are from 3200 to 8800 feet. Its lower limit depends upon the nature of the valley in which it grows, and the specimens are small, crooked, and with broken tops, probably from the snowfall. In the Kirghese Ala-tau the inferior limit of the Birch nearly coincides with that of the Fir, whilst in the Kara-Bura mountains at the sources of the Chatkal, the superior limit of the Birch and the tall-stemmed Junipers coincides with that of the Sorb Apple. The Willow, of which there are upwards of nineteen varieties, is found in the valley of the Talas and in the Kara-Bura at heights varying from 5200 to 9900 feet, whilst the Picea Schrenkiana, one of the rare Conifers of the Thian-Shan, descends in the Alexandrof range to 5300 feet, and ascends in the Ala-Tau to 8000 feet. Of five kinds of Poplars, that like the Russian Aspen is found in the woods along the Talus; and on the river Kara-Bura are two thickets of similar large old trees, but of an intermediate form between the Black Poplar and the Aspen. The Turanta Poplar (Populus diversifolia) is found in the woods on the Arys. To these trees may be added two species of Ash in the gorges along the Boroldai and its affluents.

"Among the Turkistan shrubs are found two species of Hawthorn in the valley of the Talas. In some places it grows to the dimensions of a tree with a straight trunk 18 feet high and 18 inches thick. About the sources of the Tchaian it attains to 20 feet in height. In Semirechia M. Semenoff found two species of Buckthorn, the Spindle tree, and three varieties of Cherry, the Cotoneaster and Mountain Ash. The Tamarisk, too, is there represented by six varieties.

"To the foregoing may be added the rare shrub called Boialysh (Atraphaxis), found in the dry sandy clay lands at the mouth of the Boroldai; also the insignificant Ephedra, or Jointed Fir, in the grey parched soil of the steppe between the canals of the river Asa. In the valley of the Kitch-Knie Kara-Bura are several small prickly shrubs, like those near the Syr-daria, and with the same reddish flowers. They grow principally at an altitude of between 4000 and 5000 feet. I was surprised not to find in the gardens of Turkistan either Gooseberry or Currant bushes. Black Currants, however, are said to grow wild at the source of the Chatkal, and in Semirechia there are red Currants, and four others of the Ribes tribe. Dr. Capus mentions also in Kohistan the Honeysuckle, Barberry, Medlar, and Sea Buckthorn, growing in great abundance at a height of about 8000 feet; whilst in the Chirchick Mountains the wild Plum, Pistachio nuts (Pistacia vera), and wild Almonds are found 4000 feet lower. In Ablatonne the same explorer found the superior limit of the Nut and the wild Apple to be about 4500 feet, with the Ash (Fraxinus Sogdiana), and a species of Maple. In the same valley wild Apricot trees grew up to 4000 feet, and on the shores of the Iskander-kul even to 7000 feet. Lastly, I must not omit to mention one shrub which grows abundantly in the valleys of the Syr-daria, because on its thorns there collects a sugary material called vantak-shakar, or târan-jobin; but it is remarkable that the same shrub, when growing on the mountains, yields no saccharine matter. It resembles vaia-lig, is acid in taste, and liked by the camels. From this plant, after rain, târan-jobin or manna is collected, of which, with the Pistachio, are made ruckta and other well-known Bokhariot confections. Concerning this manna the Bokhariots have a story that beyond the Syr the steppe is covered with dust of a grey-yellowish colour, called târan-jobin. This dust is supposed to fall early every morning during the three summer months, specially near the holy city of Turkistan, along the left bank of the Syr-daria, where it is collected by the natives up to sunsise, but with the first rays of the sun it becomes mixed with the soil and sinks.

"Turning from forest trees to those of the gardens, one meets in Central Asia with a kind of Elm called Karagatch, frequently planted, I observed, for the shade it affords, near pools of water. Its trunks yield timber, often to be met with as carved pillars in native mansions. There is also a species of Plane (Platanus orientalis) called Chinars, and a wild Olive called Jida (Elæagnus hortensis et E. angustifolia). We often saw the latter, with its yellow-reddish Olive-like fruit, hanging over the garden walls. I recalled having met with it in the Trans-Caucasus, near Etchmiadgin, where I did not care for the taste sufficiently to eat it. When growing wild in thickets the Jida has smaller fruit, which, when ripe, is of a greenish-grey hue. The wild Mulberry (Morus alba) is one of the commonest trees in Turkistan, and is cultivated along the first river we crossed—the Chirchik—chiefly for the sake of its timber. It attains to a height of 35 feet, and to 14 inches in diameter. North of Tashkend the tree is less common, and is particularly small at Aulie-Ata. Dr. Schuyler mentions four distinct varieties—the Hassak, or wild Mulberry tree; the Shahtut, brought originally from Persia; the Balkhi, introduced from Balkh, the largest and most beautiful variety of all; and the Khorasmi, from Kharezin or Khiva. Of some species the fruit is so little esteemed that the natives in Bokhara told me they did not take the trouble to gather it; but they use for food the large white berries, both fresh and dried, as well as made into a flour and mixed with water for a beverage, or with Wheat flower for a paste, called tut halvah. The chief use of the Mulberry tree, however, is for feeding silkworms, for which purpose not the twigs merely, but all the branches are cut off, and the tree reduced thereby to a pollard.

"In the gardens of Kurama grow, in addition to the forementioned, Peaches, Apricots (which form the staple of Khokand gardens), Pomegranates, Apples, Pears, Quinces, Plums, Almonds, more than a dozen varieties of Grapes, and Figs. Some of these last, of a whitish colour, and smaller than the green Fig commonly seen in England, were offered us in the Tashkend bazaar. Cucurbitaceous plants abound in Turkistan, among which the Melons are of exquisite flavour. Gourds (Cucurbita lagenaria) are grown in large numbers, and serve the various purposes of tobacco-boxes, pipes, and water cruses. Among umbelliferous plants Coriander is used as seasoning for food, and as a carminative. For seasoning or against flatulence Shabit, or Sweet Fennel (Anethum fœniculum dulce) is used, which does not grow wild in Turkistan, but is cultivated in kitchen gardens, as is also another kind of Fennel (Nigella Romana). The grain is green and oily. To these should be added certain plants for dyeing, such as Khana, giving a green powder, containing an essential oil. On blotting paper it gives a stain that evaporates, whilst cold water infusion easily extracts from it a pigment of a reddish colour. The colouring matter of Spariak (or Isparíak, a recent addition to the Larkspur family), is dissolved in boiling water, and produces a yellow mixture with a peculiar smell and bitter taste. It is procured from the dried flowers of a species of Larkspur (Delphinium ochroleucum, Mey.), growing wild in the neighbourhood of the Turkistan mountains, and also throughout Turan. Like the English species it grows about 2 feet high. Byzgunj is also a vegetable dye, used for making substances black, and is obtained apparently from galls of the Pistachio tree. Madder (Rubia tinctorum) is sown in submerged places; and Saffron (Carthamus tinctorius) grows in the fields.

"I have said that the district of Kurama is the granary of Tashkend. Now land under culture in Central Asia is of two kinds—that which lies near the mountains and receives the rain is called 'lialnii,' and that which is watered by irrigation 'abi.' Comparing an average Barley harvest on rain-land with one on irrigated land, the result, according to the Turkistan calendar, appears to be the same, but whilst a batman of Wheat sown on 3 acres of rain-land yields from 17 to 20 cwt., it gives on irrigated land in the same locality 17 to 23 cwt.

"Turkistan Wheat (Budia) is of two kinds—red and white, or winter and spring. Maize is cultivated, but in small quantities. Oats will not grow, it is said, in Central Asia; they, and Barley also, to a considerable extent, are replaced by Pigara (Holcus sp.), a kind of sugary Sorghum or Indian Millet, the grain of which is used for gruel, and the old stems for fuel, whilst the young stems and leaves, which are not very sweet, make good fodder for cattle. One species of Oat-grass, being considered less heating than Barley, is cultivated principally for horse fodder, as also is Kunak, which resembles Fox-tail grass. The tablelands of the Boroldai and Kzturnan are said to be the true native land of Rye. Here it grows luxuriantly, and, with full ears, flowers in May and ripens in June; but the crop does not appear to have been cultivated before the advent of the Russians, who raise a little for their own use. Rice is sown on land where water abounds, and also Millet, of which there are three varieties. Millet ripens early, and is therefore used for the second crop after winter Wheat. Flax and Rape are cultivated, but chiefly for the sake of the oil they yield. In Kohistan, both Flax and Wheat were met with by Dr. Capus at an altidue of 10,000 feet. The

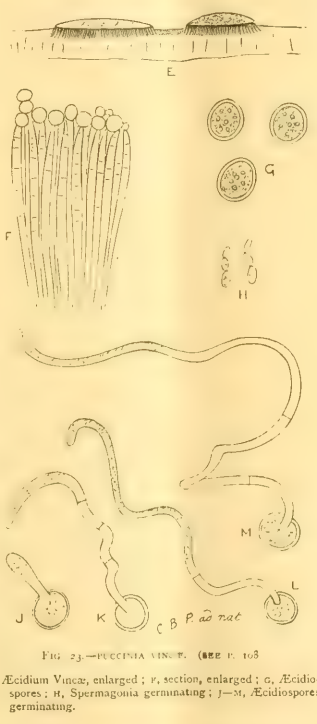



FIG. 23.—PUCCINIA VINCÆ. (SEE P. 108

E, Æcidium Vincæ, enlarged; F, section, enlarged; G, Æcidiospores; H, Spermagonia germinating; J—M, Æcidiospores germinating.

cultivation of Hemp has been introduced into certain suburbs by lovers of the intoxicating hashish.

"There are yet one or two seed plants to be noticed, such as Anjir, or Anise, which grows wild. The seed, when candied, is called Candalat khili, and constitutes an article of exportation. Sesamum also is cultivated. Santolina seed, an anthelmintic, is obtained from a wild plant from 10 to 14 inches high, found in abundance both in the plains and in the mountains of Central Asia. The Tashkendians employ the Kuramas and the Kirghese to cut and harvest the green stems, at the extremity of which is a sort of purse, or little bag, about 4 inches in length, and a finger thick, containing the seed. These native gatherers, to facilitate their work, often pull up the plant by the roots, and thereby lessen the abundance of future collections, but in a fruitful year there is exported from the district between Tashkend and Turkistan from 2500 to 3000 camel-loads, or from 570 to 730 tons.

"Among the varieties of steppe vegetation that serve for fodder is a poor one called Ibelek (Ceratocarpus sp.), on which the Khirghese, in winter, feed their herds; also in other places of limited extent are met with Kyiak (Polygonum latifolium), and Jusan (Absinthe), both of which serve as fodder for sheep and goats. A more nourishing fodder, found on the Myn-bulah, is called Kipets, and another, not so good, is Kamys-chob, or reed-grass. This latter grows so abundantly on the swampy banks and islands of the Turkistan rivers that it chokes other similar grasses. It is used as food for cows and horses, but it is so tasteless and little nourishing that the cattle eat it very unwillingly, and animals unaccustomed to it, especially Russian horses, are often made sick thereby. This Reed serves as a common article for fuel, and a similar plant, called Shye, furnishes material for the double matting with which the Kirghese cover their kibitkas. There is yet another class of fodder grasses, known by more than a dozen different native names, that grow wild abundantly in unwatered localities in Turkistan. In taste they are sour and salt, though somewhat succulent. The majority of them have prickles and thorns, and of domesticated animals the camel alone eats them. One is called Jantah or Camel's-tail (Alhagi camelorum). The roots of another, Kuk-pek, are collected in large quantities for fuel in winter, as also are a species of Lily called Sura and Alabyma or Goose-foot. Jungurcha or Clover is cultivated, but there is also a kind called Jan-shikah (Medicago sp.), that grows wild along the canals of some of the rivers. Another allied species is the Dlany-shkeh, possibly the same as the Chinese Mu-sue."

The Dairy of the Farm. By James Long and J. C. Morton. (Bradbury, Agnew & Co.)

This is one of the Handbook of the Farm series, which has won so high a place in public estimation. As Mr. Morton has long been known as an authority on such matters, the public will be interested in obtaining here, in a condensed form, the results of his experience, and the history of that change which has "lifted what used to be the homeliest and most stagnant of all departments of our agriculture into the very foremost rank of all, so far as energy, activity, and all the other evidences of life are concerned." Mr. James Long contributes to the present volume much information on foreign dairying. The work is written for the dairyman rather than for the farmer, whose requirements have been considered in other volumes of this series. As so many of our readers are interested in the cow and her produce we shall be doing them a service by recommending this work to their perusal. We cannot pretend in this place to give a critical analysis of its contents, it must suffice to say that the chapters give statistics as to the quantity of food, the yield of butter, cheese, and milk, the management of the cow, and of the dairy, and the manufacture of dairy products.

The Woods of the United States: *with an Account of their Structure, Qualities, and Uses: with Geographical and Other Notes upon the Trees which produce them.* By C. S. Sargent. New York: Appleton.

This is a detailed catalogue of the collection of woods of the United States, got together in the first instance, at the instigation of Mr. Morris K. Jesup. Mr. Jesup's collection in the American Museum of Natural History, is the outgrowth of an investigation into the forest wealth of the United States commenced by Mr. Sargent five years ago, and the results of which are published in the ninth volume of the *Reports of the Tenth Census*, recently reviewed by us. We need only refer to our notice of that magistral publication to remind the readers of the magnitude and importance of that publication and its accompanying maps.

The trees of the United States are represented in the Museum by large and characteristic trunk specimens arranged in the sequence of their botanical relationship, the sections being made in different directions, polished and unpolished, with and without the bark. The catalogue now before us is condensed from that fuller list which is given in the Census Report, and as it contains sufficient information for most purposes, it will be available where the larger and more costly volume would be unattainable or inconvenient. A carefully compiled index shows that nothing has been omitted to make both the collection and the catalogue as serviceable to students as possible.

# Orchid Notes and Gleanings.

## ORCHIDS AT OLDFIELD, BICKLEY.

THE collection belonging to F. A. Philbrick, Esq., has always been noted for the excellent manner in which the Phalænopsis have been grown. Visitors who used to admire their vigorous growth and profusion of flower when they were in their old quarters near Regent's Park used to say that there was something in the house in which they were grown which was particularly suitable to the plants, but the fact of their doing equally well at Bickley, in a house of a totally different kind, proves that to the general treatment of the plants may be attributed their success, and not to any peculiarity in the structure in which they are grown. Mr. Philbrick's house of Phalænopsis is a pleasant thing to look at in these days when so many unhealthy lots are to be found in collections, and it will be well to note a few of the conditions under which they are grown so as to form large plants bearing many great fleshy leaves on which trace of spot or disease has never been seen. The house in which the plants are kept is a span-roofed one with a walk down the middle; on either hand the beds are raised to the height of the staging in plant-houses generally, are planted with Cyrtodeira fulgida, C. chontalensis, Fittonias and Pilea; and these, growing naturally together, form a pretty and desirable carpeting which is no doubt of great service in keeping up a healthy and unvarying atmospheric moisture around the plants. The Phalænopsis, which are grown in baskets, are suspended about 2 feet from the glass, and just midway between it and the carpeting of Gesneraceous and other plants beneath. The plants are kept tolerably cool in winter, at which season they are carefully watered but never allowed to get very dry. In spring and summer the house in which they are is kept warm moist and shady, and the plants when watered are thoroughly soaked by being dipped; but this is never done until they are becoming dry, so that they are never in danger of having stagnant moisture about them, which is often so fatal to Phalænopsis. The plants are never syringed overhead, but the syringe is used occasionally to moisten the baskets and roots protruding through them, the sides of the house, and the plants planted out in the beds. So managed the Oldfield culture of Phalænopsis leaves nothing to be desired in that direction, and Mr. Heims, who so well carries it out, says that there is nothing more simple when it is properly done. P. Schrœderiana, P. violacea, and P. Sanderiana are well in bloom now in the house.

The Cattleyas, which are grown in a large span-roofed house, having a tank for rain-water the whole length of the central stage, are in excellent condition, clean, vigorous, and remarkably well rooted; with them, too, the plan of having living vegetation on the staging, which is so extensively carried out at Oldfield, is adhered to, the shell gravel on the close staging being completely covered with Selaginella, and the plants raised over it by being placed on bricks or inverted flower-pots; so arranged, they seem to exhibit a great liking for the living moss growing beneath by sending out a great quantity of roots over the sides of the pots. This certainly indicates that the right course is being adopted, as a healthy and plentiful supply of sound roots is one of the surest signs of the present good condition of the plants, and the best guarantees for their future health. Some few of the fine specimens of Lælia purpurata yet have blooms on them; the grand masses of the varieties of C. gigas have some exceptionally fine flowers. A good mass of a very richly coloured C. Leopoldi, and a huge specimen of a superb form of Sobralia macrantha splendens are grown, and Odontoglossum hastilabium, O. roseum, Epidendrum Wallisi, Trichopilia hymenanthera (with four flowers on a spike), Cypripedium Dominianum, and various other odd novelties are in bloom.

The East India house has Palms, Pitcher plants, and Orchids arranged together, and the Cypripediums especially, by their great vigour, seem to say that they like the arrangement; those of them, too, which are in flower exhibit marked excellence in the quality of their bloom. In particular may be noted C. Veitchii, and Messrs. Veitch's hybrid improvement on it, C. superciliare, which has very large and handsome flowers; C. selligerum majus, C. Ashburtoni, C. marmorophyllum, C. Lawrencianum, C. Stonei, C. vexillarium, and C. Lowei, all of which are well bloomed. Some few Vandas, Aërides and Saccolabiums are also in flower. The cool-house Orchids are in as good condition as formerly. Some Odontoglossums, Masdevallia ephippium, M. rosea, M. Veitchii, and the many forms of M. Harryana, and M. ignea, being in flower in this department, and the whole of the varied collection bears evidence that neither Mr. Philbrick nor his gardener have lost their love for the Orchids nor their skill in growing them.

### ODONTOGLOSSUM VEXILLARIUM AT BLENDON HALL.

When one meets with a well grown and flowered lot of Odontoglossum vexillarium the fact is worth recording. It is a pity we are so often used to see failures, even in the hands of experienced men, in growing this beautiful Orchid. I lately saw a fine batch at Blendon Hall, Bexley. Mr. Moore told me he bought them very small imported stuff two years ago, they are now in 6-inch pots, beautiful plants with fine strong bristling growths and without a spot on them. I noticed each plant carried seven spikes with at least six flowers, giving forty-two flowers to each plant—good results in so short a time. Mr. Moore keeps these in a moderately warm house during the winter months, taking care to use water of the same temperature at the roots, and that very sparingly, also carefully avoiding the least drop on the leaves. As the season advances they are gradually transferred to cooler quarters, with more air and water. Any extra care bestowed on them is now well repaid by their present highly satisfactory state. *A. I.*

### CYPRIPEDIUM PARISHII

is not usually rated as a first-class species, but it is to be seen in capital form in Messrs. Veitch's nursery at present. One plant has two spikes, with six flowers on each. They are quaint in appearance, and quite distinct. Cattleya Gaskelliana in the same nursery has been and still is beautifully in flower, some large specimens being furnished with more than a score of flowers. It is a distinct species allied to C. Mossiæ, but quite different in habit of plants, and flowers in June and July. *J. D.*

### DENDROBIUM MACCARTHIÆ.

The large drooping flowers of this fine species bear, on superficial examination, a striking resemblance to a Barkeria, but as a matter of course the construction is altogether different. It is rather difficult to treat successfully under cultivation, but its bold striking appearance renders it a fitting subject to have in any well-ordered collection of Orchids. The pseudobulbs are slender, and bear the flowers in short lateral racemes. The spreading sepals and petals are of a pale rosy-purple colour, while the long scoop-shaped lip is characterised by a large deep purple blotch in the throat, with numerous spots and stripes of the same colour lower down. It is furthermore just such a sort as a grower would desire to possess; but its individual likings constitute it an exceptional species, very unlikely, on that account, ever to become common. There is a figure of the species in the *Botanical Magazine*, t. 4886, and a flowering specimen may be seen in the Orchid-house at Kew.

### SACCOLABIUM AMPULLACIUM.

A small species with oblong leaves, truncate and bilobed at the apex; flowers numerous in dense cylindric racemes, magenta-rose, with a white centre, each about ¾-inch across, segments oblong spreading,

lip with a linear blade and a blunt spur. *Orchid Album*, t. 191.

BULBOPHYLLUM LOBBII.

This, together with a few more, such as B. siamense and B. Dearei, form a sectional group of the genus, and are, from a horticultural point of view, the most important and ornamental of the genus. The species under notice belongs to the Sarcopodium of Lindley, not the Sarcopodium of the *Genera Plantarum*, which comprises a group or section of the genus Dendrobium, under which it is sometimes placed. The flowers are yellow, more or less spotted externally with purple. They are produced singly on peduncles at the side of the pseudobulbs, and are distinguished from any section of Dendrobium by the lip being articulated with the foot of the column, and movable, while the petals are shorter and narrower than the sepals, which are also unequal. The above-mentioned species are frequently included in large collections of Orchids, and the one under notice flowered lately at Kew. There is a figure of it in the *Botanical Magazine*, t. 4532.

ONCIDIUM VARICOSUM.

One of the free flowering species with long loose racemes of yellow flowers with a relatively large sub-orbicular two-lobed lip, the small sepals and petals are pale green veined with brown. *Orchid Album*, t. 192.

# The Flower Garden.

THE summer bedders are growing splendidly. Alternantheras have coloured beautifully, as have the different kinds of tricoloured Pelargonium, and the flowering kinds are just now in perfection. Calceolarias will require great care in watering and mulching to keep them in perfection during the warm dry weather, and the beds of them are likely to become patchy if not shaded during the heat of the day. In light soils liquid-manure is found to be of great benefit; but I find from experience the safest and best plan is to remove the old soil from the beds for a depth of 14 inches every two or three years, and replace it with good rich mould, mixed with half its bulk of good dung.

Continue to peg down and trim into form all plants requiring such manipulation to make the patterns and designs as effective as possible. Ageratums, Petunias, Verbenas, Heliotropes, and similarly habited plans require going over at least once a week to keep all in perfect order.

HERBACEOUS BORDER.

This will require attention; all tall growing plants should be tied up, and all old flowers and dead leaves removed, so as to give all a clean and neat appearance. They should be well supplied with water, to encourage and prolong the blooming season. The spring bedding plants which were removed to the reserve garden should now receive attention; all bloom should be removed from them, and propagation either by cutting or division of the roots of many of the subjects should be done at once. A north border is the best and the most convenient place for this kind of work at the present time. Most border plants will strike root at this season of the year if watered and shaded for a week or two. Cuttings and layers of Carnations and Pink and Picotees should now be made, as by striking them thus early good strong plants fit to stand the winter will be obtained. Now is a good time to sow in pans East Lothian, Intermediate, and Brompton Stocks, as well as the various hardy biennial and perennial plants required for next year's display. The tenderest varieties should be sown in pans, and placed in cold frames, but the hardier ones will do better sown in the open.

ROSES.

Roses should now be propagated by budding and by cuttings; for budding, care should be taken to operate when the sap of the stock flows freely, so as to enable the bark to be easily separated from the wood. If deferred too long the bark adheres firmly to the wood, the operation cannot then be properly executed, and many failures occur in consequence. Another frequent failure is caused by the fermentation arising after the bud is inserted, owing to the operation having been performed in wet weather; dry dull weather should if possible be taken advantage of, and if bright hot weather should occur a few extra strands of worsted over the buds will be found advantageous in preventing too great evaporation of moisture therefrom. In propagating by cuttings, care should be taken to select sound, well-ripened shoots of moderate strength: such as have a point or keel at the base should be selected. Cut close to this with a sharp knife, and plant the cuttings in a frame, or under a handlight in rich sandy soil, under a north wall and shaded from the bright sun so as to retain the foliage on them as long as possible. Remove shading and glass lights in the evening, so as to expose them fully to the night air and refreshing dews. They should be sprinkled every morning with a fine rose water-pot. The soil must be sandy, and made very firm round the cutting, or failure will be the result. Most kinds of Roses can be easily propagated as above directed. *Wm. Smythe, The Gardens, Basing Park, Alton.*

# Plants and their Culture.

SUCCESSION OF FLOWERS FOR THE CONSERVATORY.

THIS is a matter that, in order to maintain the desired supply, must not be allowed to escape our notice. Annuals of the tender type are invaluable for the conservatory during the summer, when shading has to be employed to protect the permanent plants. At this season plants that are farthest from the glass, and that are oftentimes overshadowed by dense foliage, causing them to become drawn and consequently soon fit only for removal, are not at all satisfactory. When this has to be contended against such plants as can be thrown away when past their best will be found an advantage. A good stock of Balsams, Globe Amaranthus (Gomphrena purpurea), Celosias in variety, Petunias and other quick growing plants will be then of much service. Humea elegans and Campanula pyramidalis are also most useful during the summer. Seed of both of these biennials should be sown at once for next season.

STOVE AND INTERMEDIATE-HOUSE PLANTS FOR AUTUMN AND WINTER DECORATION.

The earliest struck stock of most of these indispensable subjects should now be making good progress. Do not let any of them become pot-bound until they are put into their last shift. This is particularly to be avoided with such as Poinsettias that have been propagated singly in thumb-pots; these will shift well into 4-inch pots, thence into 6-inch ones if required, and in most cases it will be so, for some stronger plants, even if tall in the stem, are still desirable. Selection of the strongest and most promising should be made for these purposes, but beyond a 6-inch pot it is hardly advisable to venture with plants of this season's propagation. Feeding them with stimulants will be a better plan. This resource will be found ample, bearing in mind that all the soil in which they are growing is, or should be, fresh and full of the elements necessary to sustain plant life, with the aid of a stimulant at the finish. Grow the Poinsettias by all possible means in the full sunshine, and as near the glass as possible. During warm evenings and nights give a little ventilation, except when newly potted, then for a few nights they may be closed up with a more humid atmosphere till fresh root-action commences. Our early stock will now soon be placed in a Melon pit that has been cleared out. The old stools have kept much better than usual this year, and will yield quantities of cuttings for dwarf plants, some of which will be struck as late as September for the very dwarfest. We have not touched upon old plants, these, however, are very valuable for large conservatories or lofty stoves, and when furnished with half a dozen or more well-developed bracts they are a fine sight. Such as these should ere this be making good breaks after having been cut down. We have grown these in the open air when in a more favourable locality for several weeks of our warmest summer weather. They succeed well under this treatment, and the plants are retained in a much dwarfer state.

EUPHORBIA JACQUINIÆFLORA.

This companion of the Poinsettia will thrive well in the same pits or houses as the latter, but if a slightly warmer temperature can be granted them, so much the better for obtaining a vigorous growth that will eventually become well ripened and productive of extra fine racemes of bloom. Given a sunny corner of a warm house and the convenience suitable for turning out a few plants, we advise a trial to be made of this method; the extra return will remunerate any such trouble taken. The best grown Euphorbias I ever remember seeing were in a Pine-stove of three-quarter span; these plants were placed on shelves, and partly overhung the back path, making a most vigorous growth, and were productive of the best results.

BEGONIA INSIGNIS, B. KNOWSLEYANA,

and other winter-flowering varieties, should soon be in their blooming pots, and when established therein be kept freely ventilated by night as well as day, until the chilly evenings of autumn are found to reduce the temperature somewhat lower than is desirable, thereby endangering the plants by excess of humidity in the atmosphere when at its lowest point.

THYRSACANTHUS RUTILANS.

Our stock of these are mostly 4 and 5 feet high, and are at present tied to the back trellis of the earliest vinery, which is well aired. They are doing very well in that position at present, but later we shall have to find a place more exposed to the sunlight.

ERANTHEMUM PULCHELLUM.

This species, unsurpassed in its colour at its season of the year, may still be struck, and will be found to yield a stock of serviceable dwarf plants; the earlier stock of plants will probably need another shift yet, 6-inch pots will be large enough in any case to secure a good display. *James Hudson, Gunnersbury House, Acton. W.*

# Fruits Under Glass.

THE STOCK OF YOUNG PLANTS.

EXCEPTING under exceptional circumstances our climatic influences at this season of the year are so propitious that if properly u ilised they will alone afford the necessary warmth for the cultivation of this section of the Pine stock. Assuming therefore the plants are placed in moderate sized houses or pits—the best kind of structures for this purpose, at this season—within a moderate distance from the glass, and the pots plunged in a fermenting bed, having a genial heat of about 80° at the base of them, they will with ordinary good treatment speedily grow into sturdy plants and be far preferable for fruiting the subsequent season than those of larger size. In the ordinary course of management the plants intended for fruiting next May and June should be in their fruiting pots before the end of the current month, and every inducement should be afforded them to make growth and develope it properly before the middle of October; therefore utilise to the fullest extent solar heat by closing the place at 95° in the afternoon, and at this time lightly syringe the plants overhead and other available places about the house; this will produce a genial state and secure sufficient warmth in the place throughout the night, for the plants at their present state. Ventilate the place at 80° and open it freely in sunny weather until closing time in the afternoon arrives. Whenever necessary water the plants with weak guano-water in a tepid state, not indiscriminately but judiciously, as herein lies the chief source of success.

THE FRUITING DEPARTMENT.

The growth and development of the fruit will also derive benefit from the same kind of treatment, although in the case of these artificial heat at certain times must not be dispensed with. Pine-apples swell off very freely in a somewhat low and moist temperature at this period and onwards for a considerable time yet; still, these conditions are not the best to employ for the purpose, because the lack of heat tends to impair the quality of the fruit, which often, when cut, reveals a discoloration that reduces its value and renders it next to worthless, a defect that is seldom found in fruits that have been ripened in a higher and drier temperature. For these reasons I recommend the temperatures in this division to be well sustained, by artificial means if necessary, rather than that they should be constantly low at night—75° at night should now rule, and 80° in the daytime, with an increase of 15° during sunny days, with plenty of air in the house. Keep the plants free from useless suckers, by screwing them out as soon as they can be handled, leaving one on each plant to increase the stock. Discontinue the syringing of the plants when they are in flower, and at all times use the purest water possible wherewith to wet the fruit. Attend to moistening the pathways and other surfaces in the house in the morning and at closing up time each day. *Geo. Thos. Miles, Wycombe Abbey.*

## APPOINTMENTS FOR THE ENSUING WEEK.

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| TUESDAY, | July 28 | Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.<br>National Auricula and National Carnation and Picotee Society (Southern Section), Show of Carnations, Picotees, &c. at the Royal Horticultural Society's Gardens.<br>Sale of Orchids in Flower, at Protheroe & Morris' Rooms. |
| WEDNESDAY, | July 29 | Aberdeen Horticultural Show (three days). |
| FRIDAY, | July 31 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Aug 1 | Southampton Horticultural Show (1st and 2d).<br>Liverpool Horticultural Show (1st and 3d). |

THE APPLE CROP in NOVA SCOTIA is a matter of so much concern to British consumers and British merchants that we hasten to lay before them the following communication from our correspondent in Nova Scotia, and in which the prospects of the Apple crop are spoken of very favourably :—

"The spring season was a very favourable one for cultivators of the soil this year; the heavy covering of snow last winter prevented the frost going very deep, and in April we had the unusual phenomenon of the frost being out of the ground (as it is commonly expressed) before the covering of snow had left us. All crops started early; we had fine weather for seed-time. Our Apple orchards profited by the genial weather. Blossoming was abundant, and the early growth strong, but we had a long course of unmitigated dry weather in June. This seemed to shrivel up some of the newly formed fruit.

"The most reliable reports I have received from the several counties in which fruit is raised correspond very well with a very explicit statement made to me by Colonel W. E. STARRATT, of Paradise, Annapolis County, who is himself owner of one of the finest orchards in the Annapolis Valley. He says that there will be an ample, if not unusually abundant, crop of fall (autumn) and early winter Apples, and that the clean, healthy appearance of the trees gives every indication of good quality of fruit. We shall thus be able, it is hoped, to hold our own in the English market as regards quality and beauty of sample in early winter Apples; and as regards quantity the number of barrels will certainly not be less than heretofore, as new orchards are coming into bearing every successive year. As regards late winter or spring fruit we cannot say as much. There is a decided deficiency in quantity, and what the quality will be remains to be seen. Nonpareils are in many orchards a complete failure. (The Yellow Bellefleur, or "Bishop's Pippin," as it is commonly called in Nova Scotia, has of late years become so spotted and small in size that its vocation as one of our leading market Apples is well nigh gone.)

"Our small fruits had a hard time during the June drought, but we have had abundant warm showers so far during the present month (July) which has brought about a great change on all our crops in field and garden. We are now in the midst of our Strawberry season. The Sharpless appears to be the most showy one offering on market. Strawberries are now selling at from 10 to 15 cents a box (supposed to contain a quart), say from 5*d.* to 7½*d.* per quart."

THE following letter, relating to the INDIAN and COLONIAL EXHIBITION of next year, has been addressed to us for publication :—

"I am desired by the Council of the Royal Horticultural Society to ask you to allow them to make known through the medium of your columns that they are prepared, at the request of, and in concert with, the Royal Commissioners of the Indian and Colonial Exhibition of 1886, to offer their co-operation and assistance to such of the colonies as may desire to avail themselves of it. Some of the colonies have already expressed a desire to have as a feature of their courts illustrations of the indigenous flora in vestibules or plant-houses. In addition to these the Council believe that collections of ornamental and economic plants in a growing state and of fruits would be of much interest and value. The Royal Horticultural Society will be ready to give advice and practical assistance in preparing, arranging, and carrying out such illustrations to any of the colonies who may apply to them. But they desire to point out that it is essential for even a very limited display of growing plants that not a day should be lost. I shall be glad to answer any inquiries. The Assistant-Secretary and the Superintendent of the Society's gardens will be ready to meet and consult with the Colonial Commissioners, and to take forthwith the necessary steps in conjunction with them.

"F. MASON, Secretary,
"Royal Horticultural Society,
"South Kensington, S.W.

—— BENTHAMIA FRAGIFERA.—If the memory of the late GEORGE BENTHAM depended for its perpetuation on its association with any particular plant it would be a real misfortune that the plant which in gardens bears his name should by botanical law be hereafter called a Cornus. A Cornus, however, it is; but we suspect in gardens it will remain Benthamia. It is a shrub with large lanceolate leaves, of a grey colour, like those of the Olive, but much larger, and its flowers, surrounded by large white bracts, are succeeded by a red fleshy fruit, not unlike in superficial appearance to a Strawberry. In the Northern Counties it is a tree of doubtful hardihood, but in the milder climate of the South-west it forms a large tree. Our present illustration (fig. 25) is taken from some trees in the gardens of R. G. LAKES, Esq., Trevarrick, St. Austell, Cornwall, and believed to be the largest in the country. They exceed 35 feet in height, and the trunk of one is 5 feet in circumference at 3 feet from the ground. They are now in flower, and will shortly be covered with their Strawberry-like fruit.

—— CHARLES MORREN.—We object to unnecessary alterations in the names of streets almost as much as to similar changes in the nomenclature of plants, but the fact that the Municipality of Liège has decided that one of the streets leading to the Botanic Garden of that city shall henceforth be called Rue CHARLES MORREN, is notewothy as a mark of appreciation on the part of the burghers.

—— "GREENHOUSE AND STOVE PLANTS, &c."—This is the title of a work on the cultivation of these plants, which demands, and will receive, the consideration which the well-earned reputation of the author (Mr. T. BAINES) necessitates. After a few generalities the author proceeds to give in alphabetical order an account of the several genera selected by him. We must reserve a further notice of the work till we have been enabled to examine it more thoroughly; meanwhile, as a book on the cultivation of plants, we have no hesitation in at once recommending it to the notice of our readers—the more so, as a considerable portion of the practical matter was originally published in our columns. The work is published by MURRAY.

—— THE FLORAL COMMITTEE.—Pretty frequently we hear complaints of the doings of this body, but we do not hear so much of the good work that its members do gratuitously, and at a great sacrifice of time and labour. That the work is not done so badly is shown by the fact that Ghent not long since established a similar tribunal, which we believe works well, and now we are informed Amsterdam follows suit. As the Royal Horticultural Society was the parent of most of the similar societies, so its committees seem destined to be the progenitors of like institutions elsewhere.

—— ANTWERP BOTANICAL CONGRESS.—The opening meeting will be held on Sunday, August 2, in the hall of the "Cercle Artistique, Littéraire et Scientifique." On the same day the Horticultural Exhibition will be opened. At 3 P.M. a visit will be made to the Musée Plantin. At 8 P.M. a concert will be given in the gardens of the Exhibition in honour of the members of the Congress.

On Monday, August 3, there will be meetings of the Congress, and at 8.30 P.M. an official reception by the Burgomaster in the Town Hall.

On Tuesday, August 4, the Congress meetings will be resumed, and in the evening there will be a banquet at the Cercle Artistique Littéraire et Scientifique.

Wednesday, August 5.—Excursion to Ghent :—1, Visit to the Botanic Garden; 2, Reception at the Town Hall; 3, Visit to the Winter Garden of the Countess Kerchove de Denterghem; 4, Lunch at the Casino; 5, Visit to the principal horticultural establishments; 6, Concert in the Zoological Garden in honour of the members of the Congress.

Thursday, August 6.—Botanising excursion in the Campine.

Friday, August 7.—Excursion to Brussels :—1, Visit to the Botanic Garden—*déjeûner* given to the members of the Congress by the Société Royale de Belgique; 2, Visit to the Royal Winter Garden at Laeken; 3, Reception at the Town Hall.

The second part of the preliminary reports sent in in answer to the questions proposed on numerous points of horticultural and botanical interest has been published, and will form the object of comment on a future occasion. Nothing seems to have been left undone so far to secure the success of the Exhibition and Congress.



FIG. 24.—FLOWER OF BENTHAMIA FRAGIFERA.

—— PHACELIA CAMPANULARIA.—We have frequently had occasion to mention this Californian annual, but its merits are so great, while as yet its reputation is so limited, that we do good service by calling attention to the plant, whose rich blue, bell-shaped flowers, often with a metallic sheen upon them, render it one of the very best annuals that can be grown. In habit it is like a Nemophila, and requires the same treatment. It was introduced by MR. THOMPSON, seed merchant, of Ipswich.

—— THE ROWE ORPHAN FUND.—In addition to the sums mentioned in our previous issue we have received the following amounts:—G. MONRO, £1 1s.; A Gardener, Poole, Dorset, 10s.; J. YOUNG, 5s.

—— FLOWERS IN SEASON.—Miss OWEN, of Knockmullen, Goree, sends flowers of Antirrhinum bellidifolium, a curiosity hardly worth a place in any other than a botanist's garden. Carmichaelia australis is even more curious, and would attract attention even from lovers of gay gardens, from its singular structure, the leaves being conspicuous by their absence or minute size, the branches being flattened and leaf-like to compensate for the deficiency of true leaves. The flowers are small, yellowish, and papilionaceous. Meconopsis Wallichii, with its tawny hairs and purple flowers appeals to a larger circle of admirers; and Tropæolum speciosum is sure to obtain universal suffrage. Miss OWEN sends it to show that growers should not be disheartened by one or two failures, but continue to try it in various positions. Miss OWEN, after several failures, has succeeded in growing it on the rockery almost equally well in sunshine and in shade; but thinks that it flowers best in the sunshine, and so we have found it in Wales and Scotland.

—— THE BERMUDA LILY.—Some time since we gave an illustration showing how freely this beautiful variety of L. longiflorum grew under cultivation in the Bermudas. Lilium Harrisi (so called in gardens) has made its way to favour both in this country and in the United States, but it is clear that there is considerable variation in it. Mr. BULL showed some fine examples at the recent meeting at Kensington, and Mr. KENDALL has now favoured us with specimens which are the finest of the kind we have seen.

—— ASTRANTIA MAJOR.—All lovers of herbaceous plants know this old plant, and many must have gathered it in Germany and Switzerland, and admired its frill of white bracts picked out with green. Theoretically, each flower in the umbel should have its bract, and a specimen sent by Miss OWEN goes far to realise the theoretical structure, inasmuch as, in addition to the outer frill or involucre, there is a second inside the first, and separated from it by several rows of flowers. By patient selection, no doubt, a "race" might be procured which would be very effective and which gardeners would surely offend the botanists by calling double.

—— PAPAVER UMBROSUM.—Poppies have a tendency—why, we cannot say—to turn their stamens into pistils. Cases of the kind have been figured in this journal, and now Miss OWEN sends us illustrations of the same kind in Papaver umbrosum.

—— ARAUCARIA EXCELSA.—M. CARRIÈRE describes in the *Revue Horticole* an instance wherein a lateral branch has assumed an erect direction like a leader shoot. The production of leader-shoots other than the primary one is very rare in Araucarias, and indeed in some other Conifers. Others again, like Picea Menziesii and ajanensis, frequently produce them.

—— SOUTHWARK PARK.—This park, which forms an "oasis" in the desert of Rotherhithe, and which, although quite unknown to the majority of Londoners, is fully appreciated by the many thousands who dwell within a stone's-throw of its boundaries, has recently been made still more attractive by the addition of an ornamental lake. For many years the want of water has been felt, and as long ago as September, 1883, the Vestry of Rotherhithe, in which parish the park is situated, memorialised the Metropolitan Board of Works on the subject, praying that a lake might be formed in the park, and it was not until last December that they unanimously agreed to recommend the Board to construct the lake. This result was, we believe, brought about mainly through the exertions of Mr. JOHN TOLHURST, the member for Rotherhithe. Designs and working drawings were then prepared by Mr. GEORGE VULLIAMY, the architect of the Board, and submitted to and approved by the Board. Tenders for the work were advertised for and opened on February 25 last, when out of the tenders (the highest being £4855) that of Mr. GEORGE BELL, of Tottenham, which was the lowest, was accepted, for the sum of £2665. The work has since been carried out by Mr. BELL, under the superintendence of Mr. J. J. SEXBY, the Surveyor of Parks



FIG. 25.—BENTHAMIA FRAGIFERA AT TREVARRICK. (SEE P. 112.)

and Open Spaces. The lake consists of a concrete basin, well puddled with clay as a foundation, and neatly finished around the margin with a coping of blue rounded bricks. The outline both of the mainland and the islands, which are three in number, consists of a succession of graceful curves, so arranged as to give the appearance of continuity, and we could find no point of view from which the whole extent of the lake could be seen. The advantage of this is apparent, as although the total area, including banks and islands, is, we understand, only about 2¾ acres, the indefiniteness of the view would lead an observer to suppose it might be very much greater. Planting has been executed by the Board's own labouring staff, under the supervision of Mr. COPPIN, the Superintendent of the park. The islands have been thickly planted with suitable trees and shrubs.

—— EUCALYPTUS GLOBULUS IN FLOWER IN SCOTLAND.—Mr. DUNN, of the Dalkeith Gardens, kindly forwards a branch of this in flower, with the following note :—

"The plant, or tree, was raised from seed I received from Melbourne, Australia, in 1879, and sown in the early spring of 1880, and grown under glass for two years. In 1882, when about 5 or 6 feet high, it was planted out, in the month of June, in the middle of a Rose bed in a sheltered spot in the grounds, where it has grown freely and uninjured since. It began to show its adult leaves last season, and on the branches on which they were borne the flower-buds appeared in May this year. The first flowers opened on the 16th inst., and they are now opening freely, and present rather a striking appearance on the young tree. The tree is about 18 feet high, and the flowers are produced on the branches from the middle upwards. I am not aware that it has flowered out-of-doors in Scotland previously."

—— THE PROMENADE AND BOULEVARD ASSOCIATION.—This useful body has just added another open space in a populous part of the metropolis available for the recreation of the people. Wilmington Square, Clerkenwell, is a comparatively quiet, retired area, lying a hundred yards to the westward of the highway from Mount Pleasant to the "Angel" Inn at Islington. The houses of well-to-do folks surround the square ; but beyond these are the closely packed dwellings of the more needy. The area of Clerkenwell is redolent of rural names, to wit, Sadler's Wells, London Spa, Clerkenwell Green, and Mount Pleasant, and many names of streets and lanes suggestive of a time when all that is now covered with dwellings was outside the boundaries of London, and was resorted to by her citizens with about the same consumption of time as required to get to Tunbridge Wells at the present day. The garden, which has been nicely laid out with broad well-made walks, turf spaces, flower and shrubbery beds, a fountain, and many seats for those who are weary, or whose playtime is gone by, was opened by Her Grace the Duchess of SUTHERLAND, on Saturday last, July 18. Lady ALEXANDRA GOWER, Lady MARGARET SANDHURST, Lord BRABAZON, Lord COMPTON, the Bishop of BRISBANE, and many of the clergy and friends of the Association were present.

—— MR. G. S. JENMAN, F.L.S.—This gentleman, who spent some years in Jamaica, is now the energetic Government Botanist in the colony of British Guiana, at present in England on leave of absence.

—— LABISIA POTHOINA.—An undershrub with erect stem about a foot high, with alternate stalked leaves, lance-shaped in form, finely notched at the edges, and traversed by a prominent deep red midrib. The small whitish flowers are borne in long densely-set axillary clusters. The plant is so like some of the Aroids in the shape of the leaves that it was at first sight taken to belong to that order. The venation and the sheathing base of the leaf-stalks give rise to the illusion, speedily dissipated by the examination of the flowers, which are like those of an Ardisia. The plant is a native of the Malayan Islands, and is figured in the *Illustration Horticole*, t. 561.

—— HÆMANTHUS CINNABARINUS. — Several of these Amaryllids might with propriety be included in select collections of bulbs, and it is desirable that the reaction which has set in lately with regard to bulbs may continue ; for although their season is, as a rule, comparatively short compared with the continuous blooming of some popular garden subjects, there is a freshness and a charm about them that is always attractive. H. cinnabarinus will compare favourably with most of the species in cultivation as regards flowers, but in foliage is inferior to H. sanguineus. Another property, however, which must not be forgotten is the presence of leaves with the flowers, a circumstance which brings it on a level with such excellent species as H. Kalbreyeri, natalensis, and Katherinæ. The flowers are produced in dense subglobose heads, and tube and segments of the perianth, together with the stamens, are of a brilliant vermilion fading to a pale purplish-red colour. The perianth segments are broader, and the stamens stouter, than those of Kalbreyeri, tipped with short golden-yellow anthers. A flowering specimen may be seen in the Palm-house at Kew, and a figure in the *Botanical Magazine*, t. 5314.

—— TREES IN KENSINGTON GARDENS. — The course followed a few years back in the removal of the numerous old half dead trees that stood in the north-west end of Kensington Gardens, the necessity for which was at the time urged in the pages of the *Gardeners' Chronicle*, already gives a forecast of the advantages gained. The young trees, which have been judiciously planted in groups of limited numbers, with sufficient open spaces intervening, are thriving well, and thus early convey an idea of the marked improvement in effect that results from this kind of arrangement in contrast with the continuous wood-like aspect which existed before with the whole surface occupied. In the original planting in this part of the grounds, in place of the trees from the first being allowed enough room to admit of their assuming their natural spreading habit, the mistake had been committed of putting them in thickly in the way usual when the object is to produce timber. This was further aggravated by the evident absence of any attempt at thinning out afterwards ; the result of the overcrowding being that the whole were reduced to a state of decay through starvation. In the planting of the young trees this has been guarded against by giving them room enough from the first. This is a wise course, as in such places the reluctance to thin out usually outweighs better judgment. It is gratifying to see that in the selection of the young trees there has been some departure from the Elms of the past, and the never-ending Planes of the present generation of London tree planters. Yet still more variety might with advantage have been introduced, and in place of Horse Chestnuts we would have used more Sycamores. This fine old British tree is not enough planted about the metropolis and other towns. It thrives almost anywhere where the London Plane will succeed and in a good many places where the latter will not. It is quite equal to the best of the Planes in appearance, and nothing in the shape of insects affects its leaves in a way to cause their early falling. The way that the young leaves of the Horse Chestnut suffer in spring with the stunted appearance of the established trees in Hyde Park, and most other places near London, are sufficient cause for steering clear of it. The North American Pavias seem to generally thrive better near London than the Horse Chestnuts.

—— HOMALOMENA INSIGNIS. — Please note, gentle reader, that this should not be written "Homalonema" as most writers seem instinctively to do. H. insignis is a Bornean Aroid with tufted leaves, scarlet leaf-stalks, supporting a broadly lanceolate deep green blade, the ribs of which are prominent on the under-surface, and of a deep red colour. It comes into the section Curmeria, and is a stove plant of value for decorative purposes. It is figured in the *Illustration Horticole*, t. 560.

—— SAWBRIDGEWORTH FRUITS.—A most interesting group of these was staged by Messrs. THOMAS RIVERS & SON, of the Sawbridgeworth Nurseries, at the Saffron Walden Flower Show on the 15th inst. There were a dozen or so plants of various kinds of fruits, all admirably grown and fruited, the following being well represented :—Peach Albatross, a very fine-looking fruit ; Sea Eagle, and Nectarine Peach. Nectarines Gordoni, extra fine in appearance, and an admirable exhibition variety ; Orange, and Pine-apple. Plums, Kirke's, Early Transparent, and Jefferson, all bearing good crops of excellent fruit ; and Bigarreau Gros Cœur Cherries. In addition there was a collection of gathered fruits, consisting of fine examples of Dr. Hogg and Conkling Peaches, Prince Albert, Gordoni, Humboldt, and Byron Nectarines ; large red Bigarreau and Early Rivers' Cherries, the latter represented by fine fruit of the highest quality. The highest commendation was awarded to this interesting collection.

—— GREAT YORK GALA AND HORTICULTURAL FÊTE.—The balance-sheet of the exhibition in June last has been published, and shows the year's income to have been £1794, and the expenditure £1577 18s., which includes £535 for prizes, &c. The greater portion of the balance of £217 will be handed to the charities of York. The Gala was favoured with fine weather and was in every way a success, and the speedy winding-up of affairs and issue of a balance-sheet is highly creditable to the committee, and to the Secretary, Mr. JOHN WILSON. The accompanying figures convey a tolerably correct idea of the interest which is taken in the annual exhibition at this fine old city :—First day's attendance, 4351 ; second day, 25,635 ; third day, 10,924 ; making a total of 40,910 ; and this notwithstanding that it threatened rain on the third day. This result is well deserved by the committee, and their indefatigable Secretary, Mr. WILSON, who during the twenty-seven years this great horticultural gathering has taken place have worked together with a will and fixity of purpose that has alike gained the confidence of exhibitors and the appreciation of the public.

—— THE SUN.—Professor LANGLEY, who recently gave an account at the Royal Institution of his ascent of Mount Whitney in Southern California, for the purpose of making investigations as to the nature of sunlight and the earth's atmosphere, concludes that the sun is blue. The apparent yellow colour is due to the fact that the atmosphere through which the light passes has absorbed or sifted out the other colours to a greater extent than the yellow. The solar heat is calculated to be capable of melting a shell of ice 60 yards thick annually over the whole earth. The total loss by absorption from the atmosphere is nearly double what has been heretofore supposed, and the human race owes its existence and preservation to the heat-storing of the atmosphere even more than has been believed, for if the planet were allowed to radiate freely into space without any protecting atmospheric veil, its sunlit surface would probably fall, even in the Tropics, below the temperature of freezing mercury. The apparently limpid aërial sea above our heads and about us is carrying on a wonderfully intricate work on the sunbeam and on the heat returned from the soil, picking and sorting out selected parts in hundreds of places, and as one result changing the sunbeam on its way down to us in the manner indicated.

—— BILBERGIA BREAUTEANA ×.—The *Revue Horticole* of July 1 gives a coloured figure of this beautiful hybrid between B. pallescens and B. vittata. The plant is tufted with numerous oblong obtuse leaves, provided with fine red spines at the margins. Inflorescence pendulous, shorter than the leaves, with numerous rosy-pink oblong bracts and clusters of numerous flowers, each about 2 inches long, with red calyces and violet petals twice the length of the sepals. M. ANDRÉ, by whose gardener, M. BRÉAUTÉ, the plant was raised, speaks very highly of it for decorative purposes, and recommends it to amateurs and market-growers by reason of its easy culture and abundant bloom.

—— PITTOSPORUM UNDULATUM. — Some handsome plants of this Australian evergreen shrub are now growing freely on a south border by the side of Hanger Hill House, Ealing, and are very striking and elegant objects. The seeds of this, and of several species of Gum trees, were received from New Zealand by Mr. E. M. NELSON, and the plants raised from them were planted out, during 1884, in a warm recess on the high ground on which the mansion stands. They came through last winter, without taking harm, but as it was a very mild one—it scarcely furnished a sufficient test of the comparative hardihood of the Pittosporum in the open ground near London. At present there is no appearance of the plants blooming, but they have made a free growth, and their elegant habit and undulated silvery leaves are in striking contrast to other types of vegetation surrounding them. The position the plants occupy is one eminently favourable to their coming through the winter with safety, but should it prove severe some

protection will no doubt be afforded to these interesting subjects. At present they appear to be doing as well as the most fastidious could desire.

—— MARKET GARDENING.—M. GILLEKENS, the Director of the National School of Horticulture at Vilvorde, has published a lecture given by him on the subject, and which will well repay perusal. M. GILLEKENS' object is to show how by developing market gardening among the small peasant proprietary a profitable industry may be developed, to compensate for the loss on agricultural operations proper. M. GILLEKENS gives details as to the culture of vegetables, and statistical estimates of the cost of so doing, but in the latter estimate he does not, so far as we see, include the cost of getting the products to market—a cost which must, in proportion, be heavier for the small grower than for the large.

—— THE HARTZ MOUNTAINS.—Those who are contemplating a holiday should purchase No. 3 of the *Holiday Handbook* (125, Fleet Street), and those who are not should expend a penny for the same purpose. In neither case are they likely to be disappointed, for the guide is both pleasantly written and contains a large amount of miscellaneous information useful alike to the traveller and to the sedentary reader.

—— HEMLOCK BARK EXTRACT.—The manufacture of the extract from the bark of the Hemlock Spruce (Tsuga canadensis) is assuming very large proportions in America. It is chiefly carried on in the eastern townships of the province of Quebec, where the tree abounds. It is, however, found over a very extensive area in North America, and grows to a height of from 70 to 80 feet. It is said to be found far better to manufacture the bark into a merchantable article of current value at the place of growth than to send it bulky, as it is in the rough, to foreign markets. The Custom returns of America show a very marked increase in the export of Hemlock bark extract during the past four years. To manufacture the extract the bark is put through a process of "leaching," and thus the principal watery portion is evaporated, so that a concentrated solution of tannin is the result. The wholesale destruction of Hemlock trees for the manufacture of extract threatens to seriously diminish the future supply of this wood, which will become more and more useful as Pine disappears. In a report of a committee of the Canadian Parliament so far back as 1868 it was estimated that an extent of 10,000 acres of the best Hemlock land was stripped every year for supplying bark to the extract factories, the timber being left to rot on the ground.

—— GENTIANA TRIFLORA *Pall.*, tab. 1189.—This plant belongs to the handsomest of this widespread genus, and has the particular advantage of blooming in September and October, when almost all other perennials have ceased flowering. The large, handsome flowers resemble those of G. pneumonanthe, but it is to be preferred to that species in that the small, tender foliage permits the bloom to be better seen. The cultivation of this Gentian is exceedingly easy, as it requires merely loamy soil enriched with humus, and a sunny open site. It can be propagated by cuttings, divisions, and by seed.

—— GARDENING APPOINTMENTS.—Mr. W. A. COVE, Gardener to J. ALLEN, Esq., Stowford Lodge, Ivybridge, Devon, for the last five years, has been appointed Head Gardener to Colonel S. CORYTON, Pentillie Castle, Saltash, Cornwall.—Mr. S. LYON, for the last six years Gardener to Lady SCOTT, Sundridge Park, Bromley, has been engaged as Head Gardener to Viscount Lord BRIDPORT, Cricket St. Thomas, Chard, Somerset.

## PLANT PORTRAITS.

AZALEA INDICA VAR. HARLEQUIN, *Illustration Horticole*, t. 559.

CYCLAMEN REPANDUM, *Garden*, June 13.

MORÆA ROBINSONIANA, *Garten Zeitung*, April 9.

ROSA ALPINA PYRENAICA, *Garden*, June 13.

SAXIFRAGA AVENOIDES, *Garden*, July 13.

STATICE BONDUELLI, *Revue Horticole*, June 16.

STATICE THOUINI, *Revue Horticole*, June 16.

TOXICOPHLÆA THUNBERGII, *Illust. Hort.*, t. 543, April.

TRISTANIA CONFERTA, R. Br., *Gartenflora*, t. 1188.

VERBASCUM PHLOMOIDES.—*Garden*, Feb. 28.

## TREVARRICK, ST. AUSTELL, CORNWALL.

MR. LAKES, the genial owner of this rich estate, is a well-known patron of horticulture, as were his fathers before him. There are very few places that can vie with Trevarrick for remarkable specimens of exotic trees and plants. The two trees of Benthamia fragifera there are said to be the largest specimens in Britain. They exceed 35 feet in height, and the one I measured has a trunk 5 feet in circumference at 3 feet from the ground (see fig. 24). Towards the end of summer they are clustered with their large red Strawberry like fruit, and just now they present a very striking appearance, being literally covered with thousands of heads of white flowers. Directly in front of the mansion is a Camellia which has produced upwards of 16,000 blooms during the past spring. It is in the open ground, and is 84 feet around, and is dense, from the bottom rising in a cone to a height of some 10 or 12 feet. Not far from this huge specimen is an original plant of Cupressus Lawsoniana, 50 feet high, and 65 feet around, a perfect beauty: Fabiana imbricata is treated as a shrub here, 7 to 8 feet high; its Erica-like flowers are just now at their best: alongside is the Ozothamnus rosmarinæfolius, of similar dimensions, and a sheet of white. Taxodium sempervirens, as well as the deciduous kind, T. distichum (the deciduous Cypress), tower to a height of 70 feet, the trunk of the former being 8 feet 7 inches in circumference at 3 feet from the ground, and 40 paces around. Pinus palustris (very scarce) is 25 feet high; Cryptomeria elegans is 30 feet and 53 feet around; and the Lucombe Oak at the entrance gates is finer than that grand original specimen at Messrs. Lucombe, Pince & Co.'s nurseries at Exeter. Mr. Lake's tree is about 100 paces around, and the trunk at 3 feet from the ground is 12 feet in circumference. The rock garden is well furnished with rarities, and it almost took my breath away when I saw here the Mitraria coccinea quite 14 feet across and covering a small hillock. This plant is usually found in the greenhouse, but at Trevarrick it luxuriates outdoors, and its brilliant flowers are now coming in. *W. Napper, June 27.*

## HARDY TREES AND SHRUBS.

CLEMATIS CŒRULEA ODORATA.—Messrs. Veitch send us flowers of this fine old hardy Clematis with its deep violet-purple flowers and yellow anthers. The flowers measure about 1½ inch across, and have a rich perfume of prussic acid.

SPIRÆA PALMATA ALBA.

The rich crimson flowers of the Japanese Spiræa palmata are known to most gardeners, but the white variety is much less frequent. Messrs. Veitch send us fine sprays of it, which show that the plant is to the full as ornamental as the ordinary variety.

SPIRÆA LINDLEYANA.

A loose-growing shrub, with elegant pinnate leaves and large triangular panicles of white flowers, is very lovely just now. Those who have plenty of room should certainly grow it, but its rampant habit does not commend it for small gardens. Moreover it is somewhat tender, and large branches are apt to die and look unsightly. Nevertheless, the shrub is so lovely when it blooms, and its foliage so graceful, that we should be sorry to discard it.

CASSINIA FULVIDA

is a plant no lover of hardy shrubs should be without. Its slender thickset branches are covered with tawny scales, the minute leaves are dark green above and tawny beneath, the flower-heads small, white, clustered in dense masses at the ends of the branches. Some recognise it under the name Diplopappus, but under whatever name no one will do wrong to grow it. Messrs. Veitch send us a fine spray of it from Combe Wood.

LIGUSTRUM SINENSE.

A hardy shrub of graceful habit and most profuse flowering tendency. The leaves are yellowish-green, borne on long slender arching shoots, and the numerous white flowers fill the air with a fragrance which to some folk is objectionable.

LARGE CONIFERS.

At Flete (Mr. H. B. Mildmay's home), near Ivy Bridge, where Mr. Salway is the gardener, there is a fine example of the weeping English Yew (Taxus baccata Dovastoni). Its trunk is 9 feet in circumference at 3 feet from the ground, and its entire height is at least 40 feet. It is about 50 paces around, and it is remarkable for its symmetry and gracefulness. Close at hand stands a noble tree of the Pinus insignis, quite 100 feet high, whose trunk is 11 feet 6 inches in girth, and the spread of its dense branches, which sweep the ground, is some 50 feet across. *W. N.*

BUDDLEIA GLOBOSA.

It is perhaps noticeable that although this plant has been in this country for more than a century, it appears to have been sparingly planted. It is not often met with in gardens, but it is just now a noteworthy object in the gardens of Gunnersbury House, Acton, where Mr. Hudson has it growing in a shrubbery border under the friendly protection of some tall trees, and where it is flowering very freely, throwing out its flowers in bright yellow globular heads, brilliant and fragrant, and decidedly striking. Hard frost will sometimes cut back this showy plant to the very ground, but that the root is not killed, and that it springs up again luxuriantly. [We lost ours in 1880-81]. The position given to it at Gunnersbury House is no doubt favourable to its preservation, and another purpose is served, for the plant has a straggling habit of growth which is not noticed where it can spread its branches among other shrubs. It is said that it will hardly stand the ordinary English winter north of the Trent, and when planted beyond this line should have the assistance of a wall, and be further protected druing winter.

CERCIS SILIQUASTRUM.

The finest Judas Tree, or Love Tree (Cercis siliquastrum) I have ever met with is at Saltram-Plympton, Lord Morley's seat. It stands apart from the other trees in the park, within a gunshot of the mansion, and on the occasion of my visit, a short time since, was clustered over with its purplish-coloured flowers, and its leaves of singular form were just appearing. The trunk, at 3 feet from the ground, measures 5 feet 4 inches in circumference, above which it soon forks out into a well-branched head, the circumference of which is about 30 paces. Its height is about 35 feet. *W. N.*

## THE POTATO CROP OF 1885.

(*Concluded from p. 75.*)

SCOTLAND.

ABERDEEN.—The Potato crop looks very promising but this season everything is about from ten to fifteen days later than usual. All those above-ground before May 10 were cut off by the frost of that morning (10°). There is no appearance of disease. I find that Sharpe's Victor, as an early Potato, still holds its ground out of about sixty sorts I have on trial. *V. Farquhar, Fyvie Castle.*

—— Potatos in general came up well, and are looking well, but are very late. Early sorts, such as Ashleaf Kidney, &c., will not be ready for use for at least two weeks yet, unless such as have been forced and carefully protected. *J. Forrest, Haddo.*

BANFF.—Potatos are everywhere looking healthy in this district, but owing to the long track of ungenial weather are backward in growth for the period, especially amongst the late sorts. *J. Webster, Gordon Castle.*

EAST LOTHIAN.—Potatos look well and promising, both in field and garden. Early kinds are smaller than usual owing to the long drought. *L. Dow, Prestonkirk.*

FIFE.—The Potato crops are very healthy at present, and no doubt with fine weather they will give satisfaction to the grower. *John Proctor, The Gardens, Donibristle.*

FORFAR.—All looking well in this quarter, gentle showers now and again and brilliant sunshine bring them on very fast, and I hear no complaints about them at all. *J. Mitchell, Carnoustie.*

MIDLOTHIAN.—Potatos do not look nearly as well as last season; they are very late, especially garden

varieties. The Potatos here were all frosted on their appearance above-ground. Field varieties seem healthy but late, with warm weather they will make rapid progress. *C. Johnstone, Dalhousie Castle Gardens, Bonnyrigg.*

—— It is too early to give a safe guess at what the Potato crops may be, but the earliest garden Potatos are turning out well, and the field crops are looking exceedingly promising. Of course there is no disease yet. *M. Dunn, Dalkeith.*

SUTHERLAND.—Potatos, particularly kidney varieties, come up very irregularly. Owing to the cold, wet spring, a good many sets rotted to the ground, otherwise they look promising since warm weather set in, but will be later than usual. *D. Melville.*

WIGTON.—The Potato crops are generally looking well in this district, but ten days later than average years. The breadth planted is less than in most former years, owing to the low prices of last year's crop. *A. Fowler, Castle Kennedy, Stranraer.*

## ENGLAND.—NORTHERN COUNTIES.

CUMBERLAND.—Potatos are looking well in the fields, and those that we have been taking up in the gardens are a fair crop, and of average quality, and free from disease. *J. Hammond, Brayton, Carlisle.*

WESTMORELAND.—Both early and late sorts look healthy, none being out of the ground when the frosts visited us; but both are later than usual. *W. A. Miller, Underley Gardens.*

DURHAM.—Potatos look well, and free from blast or disease up to the present. Early crops were cut down on three different nights, and to all appearance the crop is damaged, the tops being of a weak nature, and the tubers small. Field crops, although late, are clean, and likely to turn out well. *J. Hunter, Lambton Castle.*

YORKSHIRE.—The early Potato crops will be very light, they were cut off so much with the frosts, which make them quite a fortnight later for the markets. The late field Potatos look very well, and if fine dry weather should continue we shall have good crops again. *J. Shaw, Nunappleton.*

—— Potatos look very well, and have made wonderful progress since we had the 1.92 inch of rain on June 24 and 25. Schoolmaster is a great favourite here; we are still using that sort, and find them most excellent. *T. Jones, Wetherby Hall.*

LANCASHIRE.—With the exception of a few plots of Magnum Bonums, Potatos in this locality are looking well and growing rapidly. The above-named sort is a patchy and irregular crop, owing—as I believe—entirely to the sets having been planted without due preparation. *F. Harrison, Knowsley Garden.*

—— Potatos are about two weeks later than usual, came up irregularly, but are now improving, and, with a continuance of fine genial weather will, I fancy, turn out well. *A. Jamieson, Haigh Hall Garden, Wigan.*

—— The Potato crops are looking extremely well. Early sorts were nipped by frost, are now looking in good order, but will be late. All crops in this locality are a fortnight later this year than last. *H. Lindsay, Huntroyde Gardens.*

## MIDLAND COUNTIES.

STAFFORD.—Potatos are turning out well, but earlies are quite a fortnight later than last year. Field crops are in fine time—there is every likelihood of a big turn-out. Sutton's Early Regent seems to me to be one of the most promising of the newer sorts. *J. Loudon, The Quinta, Chirk.*

—— It is rather early to say much about the Potato crop; they are looking wonderfully well in this district, I never saw them looking better. Having had a good supply in frames, I have only lifted a few outside, and they promise well. *J. Wallis, Keele Hall Gardens.*

SALOP.—We commenced lifting Veitch's Ashleaf Kidney here on June 15, which are very good both in quality and crop, and I think I may venture to say I never saw the Potato crop look more promising, both in field and garden, than it does at the present time. *R. Milner, Sundorn Castle.*

NOTTS.—Potatos are looking well, but are late. No disease to be seen amongst early ones in the gardens, those in the fields very strong and healthy, but on Saturday morning we had 2° of frost. At a small village 2 miles from here had Potatos cut down. *A. Henderson, Allerton.*

BUCKS.—Very promising in every respect. Began digging Early Bird outdoors on south border on June 8. This Potato was sent out by the late Mr. Turner, and is a first-class early variety. None have been injured by frost. Later varieties are looking healthy and strong. Schoolmaster is one of our main crop varieties. No appearance of disease at present. *J. Smith, Montmore.*

OXFORD.—Early Potatos are a very light crop, but of good quality. With very cold nights and a light rainfall the growth has never been free. Late sorts look promising at present, but want rain very much. *J. Watson, Nuneham Park.*

HERTS.—I grow between twenty and thirty varieties, all growing remarkably well. The earliest now lifting are very clean, and of fine quality. At present this promises to be a good Potato year. *J. C. Mundell, Moor Park.*

## EASTERN COUNTIES.

LINCOLN.—Potato crops look very promising, no disease as yet; first earliest are turning out fairly well, but not many are lifted yet. Earliest crops were cut down by 8° of frost on May 12, which they have never got over. *D. Lumsden, Blaxholm Hall.*

NORFOLK.—Potatos at present looking remarkably well, though being cut back with the late frosts, but now no sign of the check. Not many at present have been lifted, but the early ones, though small, lifted by myself, are very good, showing no sign of any disease. *J. Forder, Hillington Hall, Kings Lynn.*

ESSEX.—Owing to the long drought we are having in this district, early Potatos are small, but good in quality. Up to this time I have not heard of or seen any disease. The late crops look promising at this date, but are wanting rain. *J. Mill, Woodbridge.*

—— Our first crop, Beauty of Hebron, was very good both in size and quality. We are now using the varieties of Ashleaf, which are not so large, but clean, and of good quality. Other sorts of the later kinds look favourable, and we have not seen any disease amongst them. *D. Donald, The Green, Leyton.*

## SOUTHERN COUNTIES.

BERKS.—Potato crops are most promising; our early kinds are very good, late sorts strong and very vigorous. I found Potato disease on early kinds on June 24. The dry weather setting in will have an effect on its spreading. *J. Tegg, Bearwood, Wokingham.*

MIDDLESEX.—The Potatos look very well up to the present time, and the early ones turn out well. The later ones, I hope, will be as good. *W. Bates, Poulet Lodge, Twickenham.*

—— Potatos are looking very well indeed, and hundreds of acres of ground are covered with them in this locality; though planted earlier than usual, owing to the dry, open nature of the weather in March, yet the germination seemed to have been unusually retarded, and in many cases there are breaks in the rows, not so common where the sets were put in much later. Still growth now is robust, rapid, and healthy with all kinds, and they are legion. Plants are producing bloom early and abundantly, and its free appearance may be taken to indicate health and early tubering. No doubt in consequence the season will be prolific in seed, and in future years of seedling kinds. The value of these, however, must be largely dependent upon the nature of the crosses made. Something marvellously good is now required to constitute a new first-class Potato. *A. D., Bedfont.*

—— Potatos are very promising in appearance, but want rain very badly; unless we get a plentiful downfall at once there is every prospect of super-tubering, should much rain occur later on. *T. Baines.*

KENT.—Promise well and are of fairly even appearance. Very early growths were cut back by late frosts. *Correspondent, Bedgebury.*

—— The Potato crop is very promising at present, a good rain would still much improve it; the land is getting very dry, especially where there is free drainage. There is no sign of the blight, which makes its appearance later on as a rule. *A. Waterman, Preston Hall, Aylesford.*

SUSSEX.—Potatos, up to this time, I have not seen looking better in any past season. They are in a splendid promising state. I have not seen any blight as yet. *S. Ford, Leonardslee.*

WILTS.—The Potato crop is very satisfactory in every way. Early varieties in this neighbourhood are an excellent crop, of good quality, and perfectly free from disease. Late sorts with us are promising well—I think better than last year. *W. Phipps, Bowood.*

—— Potato crops are looking remarkably well—rather late in this neighbourhood, owing to the cold weather in May, with continual frost at night. Should we be favoured with warm growing weather I am in hopes we shall have an abundant crop. *T. Beck, Crichel House, Wimborne.*

## WESTERN COUNTIES.

HEREFORD.—At the present time early Potatos are looking remarkably clean and healthy, with no sign of disease. Late Potatos in the field are also looking well, and, with fine weather, we may expect a grand crop. *J. C., Downton Gardens.*

—— A fine dry time for getting in the sets and tolerable freedom from frost have favoured a bold healthy growth of haulm. The ground being fairly covered, the fine rains we have lately had must tell in favour of full crops of good tubers. So far there is no sign of curl or the dreaded disease, and the plant being forward for the season, vigorous and healthy, the prospect is better than it has been for some years past. We grow only those which do well on our soil—Mona's Pride, Veitch's and Myatt's, as being our earliest; Lady Paget, a fine cropper and fairly free from disease. Tubers of last year, although a second early, are still sound. *W. Coleman, Eastnor Castle.*

—— The Potato crops are well advanced and are very healthy and promising. A few of the early sorts have been dug and have turned out very satisfactorily. Given an immunity from disease, an abundant crop can be anticipated. *K. McKenzie, Allensmore Court.*

WORCESTER.—We are lifting Myatt's Ashleaf for use, of very good quality, but rather smaller than usual. Mid-season and late varieties look wonderfully clean and healthy; I never remember them looking so well, and should not the disease make its appearance the yield will, I imagine, be enormous. *W. Child, Croome Court.*

CORNWALL.—On the whole Potatos are looking fairly well, early ones are of good quality, but the crop is not enormous. Second earlies are looking well, so also are the field crops. No disease has appeared yet, should that keep off another month, we hope to lift an average crop. *C. Lee, Boconnoc.*

—— Early Potatos are a very good crop, late ones look very promising, but sorry to see disease in White Elephants and Champions, "imported seed." *Cornubian, Tehidy Park, Camborne.*

DEVON.—Potatos are looking remarkably well at present. We have been taking up Myatt's Ashleaf and Beauty of Hebron for the past fortnight; very good crops of each. Disease has not appeared very much for these two years past. It is rather too early to expect its appearance yet. *D.C. Powell, Powderham Castle Gardens, Kenton.*

## WALES.

PEMBROKESHIRE.—The early crops turned out fairly good, and were a little later than usual. The second earlies are very good, and the late crops look remarkably well. The disease appeared in this district on the 15th. Some early Ashleafs were observed on that day, on a dry, warm south border, to be badly affected. Previous to its appearance we had had a few days of hot, muggy weather. The disease had never been observed in the border before. Wood ashes have been used as manure, and the seeds were healthy, so under the above conditions the early outbreak is rather unaccountable, unless it be the weather. *G. Griffin, Slebech Park.*

GLAMORGAN.—We have been digging early kidneys in the open since the latter part of May, and they are very abundant, of fair size, and very good quality. We had no late spring frosts to injure them, but owing to the weather being very backward in the fore part of May general crops are later than usual. There is no indication of disease, and the crops in the whole district promise well. *J. Muir, Margam Park.*

## CHANNEL ISLANDS.

JERSEY.—The early Potato crop has been a comparative failure here this season owing to the cold weather in May; when the growth was stayed over a period of three weeks; many pieces of ground have not produced more than double the quantity planted for seed. The second early and later crops have a better appearance, and are producing a fair crop as

they are being taken up; and should fair weather continue, the late crops will help to counterbalance the growers' losses in their early crops. *C. B. Saunders. St. Saviour's.*

### IRELAND.

FERMANAGH.—Potatos are looking fairly well. Rain is very much needed at present. With a favourable season will be plentiful. *W. Magee, Gardens, Florence Court, Enniskillen.*

—— Numerous other reports from Ireland are of a similar character.

## COCA.

ACCORDING to a report quoted in the *Pharmaceutical Journal*, Coca (Erythroxylon Coca), the leaves of which are used as a stimulant, and also for their anæsthetic effects on mucous membranes, is produced along the whole length of the Andes, from Ecuador to the Argentine Republic, forming a valuable source of revenue.

The general method of cultivation seems to be common to Peru and Bolivia. The best Coca is said to be produced on hill sides which are from 3000 to 6000 feet above the sea-level, and it is grown upon terraces of various widths on the sides of deep narrow valleys called "yungas." The seed is sown during August in beds, or boxes filled with earth, and by the following June, when the plants are 8 or 10 inches high, they are transplanted on the terraces about 3 feet apart, in a soil kept free from shade and from any other growths. By November the first or lower leaves are of the deep olive-green colour, which marks maturity. A rich soil is needed, but fertilisers are not used, and, however good the soil, it is said to be rather rapidly exhausted by the plants, so that a succession of fresh plantings is kept up. The shrub grows to the height of from 2 to 6 feet, but the largest plants do not yield the best leaves. Each bush yields, as a rule, three crops a year, or in exceptional localities four crops. The first is called the March crop, the gathering commencing in January. The second is the St. John crop, beginning in May, and the third is All Saints, collected in October, and then the shrub is completely stripped of leaves. Moist seasons produce the most delicate leaves of finest quality, and droughts are very destructive to the crops; but as droughts in these mountains do not extend over very large districts, the total crop is not often seriously varied from this cause.

The crops are gathered leaf by leaf, chiefly by Indian women and children, who stoop in front of each bush, and collect only the leaves which are mature in their aprons. Minister Gibbs' authority tells him that the women are careful not to touch the top of the bush, for, if this be touched by man or animal, "it withers and dries up." Men visit the women from time to time, and take the gathered leaves in large sacks to an enclosed yard, which is paved with smooth flat stones or slates, laid with very close joints and kept very clean. These pavements are so situated as to get the full force of the sunshine, and the first gathering of leaves is not brought to them until they are very hot from the sun's rays. The leaves are then spread thinly over the hot pavements, and being loosely raked and turned from time to time, are dry in from three to four hours in favourable weather. Sometimes, however, they have to be left overnight, and are then liable to be damaged by dew. No gathering is done in very cloudy or damp weather, and damage only occurs from changes during the day after the collection has begun.

When dry, the leaves are packed at once by means of a rude wooden press in square bales of coarse cloth, of a cesta, or about 25 lb., each. Two of such bales are put together, under another envelope, generally made from the bark of the Banana tree, and such a package, of about 50 lb., is called a tambor, or drum, and measures about 11 × 15 × 17 inches. When these parcels have to be sent across the coast range of mountains for exportation three are put together in a tarpaulin-covered package of 150 lb., and two of such packages make a load for a mule, or other pack animal, for this transportation of several hundred miles through mountain passes.

Coca is very easily damaged by the combined effect of heat and moisture, and is therefore always stored in cool, dry warehouses, and rarely handled or transported in damp weather, or during the rainy season. This rainy season is from January to April, and therefore that stored on the west side of the coast range is alone available for export during the rainy season. When exported it is said that it usually starts in very good condition, and will reach its destination in the same condition if carried in a cool dry place. The only absolute security for it in transit is therefore to have it soldered up in tin or zinc.

## SUMBUL.

MR. WARE has been good enough to send us a flowering shoot of Ferula Sumbul, an umbelliferous plant growing to a height of 10 feet, with very large deltoid thrice-pinnately cut leaves. The flowers are small, polygamous, yellowish in colour, borne in compound umbels destitute of involucre and of involucel. The fruits are sub-globose and smooth. Like all the taller Umbellifers this is a handsome decorative plant, but its chief interest consists in the abundance of milky juice it contains and the powerful aromatic bitter and musky principle by which it is pervaded. A plant with so potent juices would naturally be expected to possess medicinal virtues. Accordingly we find that it has been recommended in cholera, and with better reason as a stimulant and antispasmodic like its near allies Asafœtida and Galbanum. The odour of the present plant, however, though powerfully musky, is far more agreeable than that of the plants just named. The Sumbul was jealously protected for a time by the natives of Turkestan, who were very unwilling that the Russians should gain information concerning it. Dr. Lansdell, in his recent work on Russian Central Asia, mentions that M. Borshtchoff was authorised to promise twenty half-imperials for a



FIG. 26.—FERULA SUMBUL.

specimen, but the reward was for some time unclaimed. By close-questioning, however, he ascertained that it grows in mountain valleys watered by overflowing rivers, such as the upper courses of the Chir-chik and Syrdaria. Fedchenko obtained a portion of the plant and planted it in the Botanic Garden at Moscow, where it blossomed, thus rendering possible a detailed investigation of the plant, and rejoicing the heart of the explorer, who said that if the Bek of Maghian (the potentate who had tried to prevent the Russians from discovering the whereabouts of the plant) "chose to go to Moscow, he might see there in perfection the plant he had tried to keep so exclusively in his own mountains." Dr. Lansdell speaks of the plant as producing a bulb, but that of course is a technical error. It was found by Fedchenko near Maghian in the mountains south-east of Samarkand, at a height of 3000—4000 feet. It has been described by Kauffmann in the *Nouveaux Memoires* of the Imperial Society of Natural Sciences at Moscow (1871), t. 24, 25; by Sir Joseph Hooker in the *Botanical Magazine*, t. 6196, and by others. The history of the plant from a pharmaceutical point of view is given in Flückiger and Hanbury's *Pharmacographia* (1874), p. 279. The large size of the "vittæ" or canals containing the milky juice in the seed-vessels, is very remarkable.

SCARBOROUGH FLORAL AND HORTICULTURAL SHOW.—The forthcoming meeting of this Society will be held in the grounds attached to St. Nicholas House, Scarborough, on August 5 and 6. The funds are not in a prosperous condition, so that the results of a good attendance would be greatly appreciated.

## METROPOLITAN PARKS AND OPEN SPACES.

THE parks, commons and open spaces now under the control of the Metropolitan Board of Works are, according to the annual report for 1884, as follows:—

| | Acres. |
|---|---|
| Finsbury Park | 115 |
| Southwark Park | 63 |
| Gardens on the Victoria, Albert, and Chelsea Embankments, and in Leicester Square | 14 |
| Blackheath | 267 |
| Hampstead Heath | 240 |
| Shepherd's Bush Common | 8 |
| London Fields | 27 |
| Hackney Downs | 50 |
| Well Street Common | 30 |
| North Mill Field | 29 |
| South Mill Field | 28 |
| Clapton Common | 9¼ |
| Stoke Newington Common | 5½ |
| Waste Land at Dalston Lane, &c. | 1 |
| Tooting Beck Common | 144 |
| Tooting-Graveney Common | 63 |
| Clapham Common | 220 |
| Bostall Heath | 55 |
| Plumstead Common | 110 |
| Shoulder of Mutton Green | 4 |
| Wormwood Scrubs | 194 |
| Eel Brook Common | 12 |
| Parson's Green | 3 |
| Brook Green | 6 |
| Peckham Rye | 64 |
| Goose Green | 6½ |
| Nunhead Green | 1½ |
| Streatham Common | 66 |
| Total | 1835¾ |

### FINSBURY PARK.

This park, which is on the northern outskirts of the metropolis, in the parish of Hornsey, and which derives its name from the circumstance that it was intended mainly for the benefit of the inhabitants of the parliamentary division of Finsbury, was opened to the public in August, 1869. It has year by year been growing in attractiveness and popular favour, and the Board has neglected nothing which could contribute to make it a place of healthful recreation and intelligent enjoyment for all classes. Its value for these purposes continually increases, for, whereas, when it was first laid out, there was open ground on every side of it, the town has of late years so extended that the park is now nearly surrounded with streets and houses.

The Board has for about three years past allowed music in the park on Sundays during the summer months, and as the performances appear to give satisfaction to the public, and there has been no complaint of misconduct or disturbance of any kind, there has been no reason for altering the arrangement. Last summer the Board also allowed music to be played in the park on one other evening in each week. A stand has been erected for the musicians, and the space around it tar-paved.

### SOUTHWARK PARK.

This park, which when originally planned and laid out was to a great extent surrounded by open ground used for market gardening, is now in the midst of a large population, and is a much valued place of resort. The same care is bestowed upon it as upon Finsbury Park, although, owing to less favourable conditions and surroundings, it may not present quite so attractive an appearance. One feature which has hitherto been wanting, that is, a sheet of ornamental water, is about to be supplied, the Board having given directions for the formation of a lake at a cost of about £2500.

(See p. 113.)

### THAMES EMBANKMENT GARDENS.

These are plots of ornamental ground of various size, situated at intervals adjacent to the public thoroughfares along the Victoria, Albert, and Chelsea Embankments. They are kept up with great care, are abundantly supplied with flowers and plants at the proper seasons, and most agreeably diversify the urban surroundings.

Some open ground adjoining the northern abutment of the Chelsea Suspension Bridge has this year been ornamentally laid out, planted, and enclosed with wrought-iron railings, at a cost of about £1400.

### HACKNEY COMMONS.

As has been stated in previous reports, the Board has been much impeded in its efforts to keep these commons in good condition by the existence of various rights, the assertion of which prevented the Board from exercising complete control over the

commons. It has accordingly been necessary to obtain special statutory powers to purchase and extinguish these rights.

The plots of waste ground in Dalston Lane and Lauriston Road (formerly Grove Street), which were placed under the Board's control by the Act confirming the scheme relating to the Hackney Commons, have been ornamentally laid out and enclosed at a cost of about £400, and handed over to the Hackney District Board of Works, which has accepted the charge of them.

With a view to avoiding any future question with respect to public meetings on the commons and open spaces under the Board's control, the Board has recently decided that upon a certain defined part of every common large enough for the purpose, orderly public meetings may be held without the necessity of applying for the consent of the Board.

## GLASNEVIN.

THE following extracts are taken from the report of Mr. F. Moore, Curator of the Royal Botanic Garden, Glasnevin, Dublin, for the year 1884 :—

### NUMBER OF VISITORS.

It is very satisfactory considering the condition much of the garden was in, owing to new works and changes in progress during 1884, to be able to report a small increase in the number of visitors.

1884.

| | | | |
|---|---|---|---|
| Total number of visitors | .. | .. | [illegible] |
| Sunday visitors | .. | .. | [illegible] |
| Weekday visitors | .. | .. | 296,830 |
| Highest monthly attendance | June | .. | 56,006 |
| ,, weekly ,, | week ending June 7 | .. | 17,249 |
| ,, Sunday ,, | June 15 | .. | 4,009 |
| ,, weekday ,, | June 2, Whit Monday | .. | 7,640 |

### CONSERVATORIES.

In the indoor department the past has been a year of much anxiety and extra work, owing to the large number of plants that had to be moved about to make room for workmen. All the conservatories have been numbered as follows :—No. 1, Tree Fern-house ; 2, house for aquatic plants ; 3, cool end, 4, central compartment, 5, stove end, curvilinear range ; 6, Orchid-house ; 7, large Palm-house ; 8, Camellia-house.

Having been informed that the new Palm-house would be commenced early in spring, I lost no time in removing the rockwork in order to leave space for the excavation of the foundations, &c , and had a new rockery erected in a picturesque situation with the excavated material, as well as extra stones and materials supplied by the Board of Works, and collected from various places in the garden.

Messrs. Boyd (the contractors for the work) commenced operations on March 19, and the house was sufficiently completed for the reception of the plants by October 1.

The house is a handsome structure, 100 feet long by 80 broad ; it is heated by ten rows of hot-water pipes round the sides, and four round the central portion ; there is also a hot-water pipe round the springing of the upper roof, which is of the highest importance, as it prevents condensation.

Light iron galleries run round both on the inside and outside of the house. The shelves are constructed of slate with iron uprights. The principal portion of the house is of iron ; the lower upright sashes are, however, of teak wood.

I am happy to say that, notwithstanding the delicate nature of the plants, they have by various expedients been practically saved from injury. About thirty large specimens, weighing from 1 to 5 tons, were successfully removed to the new house from the other houses, and about twenty-six, including all the largest plants in the garden, were retubbed.

### LIBRARY AND HERBARIUM.

This department is now in a fairly satisfactory condition, but more space is required. The front room was taken from the ladies' waiting-rooms, and a new entrance to the latter was made in a less conspicuous position. The Board of Works partially furnished this room, and enough herbarium cases were purchased to hold the present collections, which were then removed from the unsuitable presses in which they had been stored away. By this means space was also found for many books which had been stored away unbound, and the library was rearranged.

Dr. McNab re-arranged the collection of dried plants in the new cases, and they are now easily available for reference purposes. He also had all these specimens remounted. Some modern works are urgently required for the library, and also some good bookcases ; however, these cannot be purchased out of the ordinary funds of the gardens.

### OUTDOOR DEPARTMENT.

Owing to the erection of the new Palm-house much additional work was created, and therefore several contemplated changes were abandoned.

By the end of May the new rockwork before alluded to was completed. In planting it, only the choicest plants from the old rockwork being used ; these, with about 2000 plants from the alpine yard, and the British Ferns which were removed from an unsuitable position and planted on its north side, leave but few vacancies to be filled up.

### PURCHASE OF PLANTS.

The amount expended on purchase of plants and seeds was £200 3*s.* 10*d.*, considerably less than last year's expenditure under this head, the reason being that several exceptional items caused by the new works in the gardens had to be provided for out of this year's vote for incidentals.

1884.—*Number of plants purchased, &c.*

| | | |
|---|---|---|
| Indoor Ferns, Orchids, &c... | .. | £157 11 8 |
| Seeds, bulbs, bedding plants, &c. .. | .. | 32 15 4 |
| Hardy plants, trees and shrubs | .. | 10 1[illegible] |
| Total | .. | £200 3 10 |

### EXCHANGE OF PLANTS AND SEEDS.

Some changes having been made in the hardy plant arrangements at the Glasgow Botanic Garden the Curator applied for some plants from Glasnevin. He sent his foreman here in March, and he packed and forwarded to Glasgow over 1200 plants.

Owing to this the number of plants given from Glasnevin this year is exceptionally large. A valuable donation of plants was received from the Director of Kew Gardens, and many of the leading English plant merchants were exceedingly generous in giving contributions of plants to the various collections. Messrs. Veitch, Backhouse, and Low gave specially valuable donations of indoor plants, and Mr. Bull reduced to one half the catalogue price the prices of many rare plants which would otherwise have been too expensive to purchase. Messrs. Ware and Barr & Son gave many valuable hardy plants. Herr Max Leichtlin gave many rare plants and seeds, as did the directors of the following botanical gardens :—Kew, Edinburgh, Cambridge, St. Petersburg, and Leiden.

The number of donations was 149, from 102 donors, residing in the following countries :—Ireland, 39 ; England, 29 ; Scotland, 6 ; Germany, 11 ; Italy, 3 ; Holland, 3 ; India, 2 ; America, 2 ; Australia, 2 ; Switzerland, 1 ; Denmark, 1 ; Spain, 1 ; Ceylon, 1 ; Russia, 1.

1884.—Number of donations, 149 ; number of donors, 120. Plants received, 1129 ; plants distributed, 2666. Seeds received, 1925 packets ; seeds distributed, 1467 packets.

## FRUIT NOTES.

CLAPP'S FAVOURITE PEAR.—In reference to Mr. Coomber's remarks on p. 19, while I fully endorse the good opinion he entertains of Clapp's Favourite Pear, it has not, as far as I know, been shown from here. It has fruited several times, and is very handsome, in the style of the old Windsor, and it comes in between Beurré Giffard and Jargonelle, and as it is also a first-rate grower we consider it one of the best. The Pear Mr. Coomber refers to was probably Triomphe de Vienne, which we have grown very large, and it is a most delicious variety, but owing to the date of the Kensington meetings being a month apart in September, it was not in condition. It is a most beautiful grower, and the fruit is very large and handsome, and the tree is fertile, while the quality leaves nothing to be desired. Its season here is after Beurré d'Amanlis, and before Doyenné Boussoch and Madame Treyve. When it first bore fruit we considered it the best Pear of that season, which was a cold one. Our fruit was from a pyramid tree, upon a cordon or wall. It would probably weigh over a pound. *George Bunyard, Nurseries, Maidstone.*

—— I have no experience of Clapp's Favourite Pear under pot culture. Our-of-doors, on the Quince, it was a strong grower, but a very meagre bearer. It is a nice quality fruit, but is not nearly so tasteful as the Bon Chrétien. It ripens almost simultaneously with Williams', and keeps in condition about as long. Of early Pears Beurré de l'Assomption, and Souvenir du Congrès, except in warm situations, too frequently crack, and the latter is not a good flavoured Pear. Among the most prolific of the early sorts are Jargonelle, double worked on the Quince, and Beurré d'Amanlis, Madame Treyve, and André Desportes. One of the nicest Pears grown, but which must be eaten at the nick of time—for in a day or so after yellowing it is mealy and decayed as to the core—is Nouveau Poiteau. It is a mid-season variety, large, and very prolific as an espalier or west wall tree. *C. A. M. C.*

### APPLE GLOSSY REINETTE.

There is not anything known with certainty regarding the origin of this Apple, which is otherwise called Borsdorfer Reinette, except that it comes from the Austrian Tyrol. The form is regular, smooth, globular, and sometimes pyramidal, the greatest diameter being about the middle, or towards the eye. It is of middling size. The eye is half-open, or closed ; the eye (sepals) long, pointed, and slender ; the stalk of medium length, ligneous, thin, woolly, lying in a deep russetty cavity. The rind is fine, smooth, but slightly yielding, very shining, straw-yellow on the sunny side, marked sometimes with faint carmine. Flesh white, fine in grain, rather firm, juicy, and with a pleasant flavour. The core-axis is hollow, sometimes open ; seed well developed, long, egg-shaped, and dark brown. The fruit is ripe in November, and continues good till spring without shrivelling. The fruit is to be recommended for culinary uses. The tree is a moderate grower, but obtains to a large size, and is easily distinguished by its long, slender fruiting shoots. *Garten u. Blumen Zeitung.*

## ALFA IN ALGERIA.

THE following is an abstract of an interesting account of the growth of Alfa (Macrochloa tenacissima) in Algeria. The plant is described as being found in calcareous soil or siliceous clay, but not in compact clay or pure sand, unless at a short depth below them siliceous clay is found, or soil impregnated with sea salt. The thin, circular and shallow roots of the plant require air and a little moisture ; thus the Alfa is never found in the white sand near the *chotts*, nor in the depressions of compact soil scattered about the high plateau.

The tuft of Alfa presents at its base the appearance of a central axis, around which, at a short distance, proceed horizontal ramifications ; these then spring up vertically, and produce bunches of flowers, sheathed in narrow falling leaves, measuring about 2½ feet at maturity. After the first year's growth each ramification sends out from its base a shoot which descends into the ground, producing a small root ; then other ramifications are produced at the base of previous ones, and become rooted in their turn. The tuft thus increases from the centre to the circumference, each addition being united to the central mass, but forming gradually its own roots, so as to be able to live when the central part dies and disappears. It is only in the third year from the sprouting of the ramification that the flower seems to be developed.

If the plant is allowed to grow unchecked its flowers and leaves vegetate during the spring, they ripen in summer, and they commence to decompose from the point downwards under the action of the autumnal rains, fading progressively during the winter. In proportion as the sap of spring developes new leaves those of the previous year fall over inert and partly dried up without becoming detatched from the stem, on which they continue to decompose during the following years. After several years the dead leaves form a thick central mass impenetrable to the shoots at their base ; all around the new leaves pierce this plume-like form, and the little roots continue to develope outside the circle. If the tuft is burnt such of the central shoots as have been preserved from the action of the fire, being no longer smothered by dead leaves, speedily produce new ones.

Alfa grows abundantly in Algeria, and a large population, both of Spaniards and Arabs, is engaged in collecting it. The workman generally twists round his hand, or round a small stick, the upper parts

the leaves, which he tears out by a sudden jerk and puts under his left arm; this he continues to do till he has made a small sheaf, which he ties up. A number of these small sheaves are made into a larger one, and these are placed upright to dry.

To preserve this plant as much as possible an ordinance of the Governor-General was published on March 13, 1884, prohibiting the collection of it during a close period of about four months every year, varying according to the climatic conditions of the district where it occurs. The best part of this Alfa is exported to Spain, where it is mixed with the Esparto-grass of that country; the ordinary quality is almost all sent to England, for the manufacture of paper. Of late the exportation has greatly diminished, owing partly to the competition in Spain, Morocco, and Tunis, but partly to its excessive price and the introduction of wood-pulp in the paper trade.

The extent over which Alfa is found in Algeria is about 1,797,952 hectares, and it is calculated that upwards of 8,000,000 quintals were collected during the year 1883. *K. F.*

## PLANT-GROWING AT BRIDGEN PLACE.

This place, the residence of Mrs. Arbuthnot, is nicely situated on elevated ground overlooking one of those pretty slopes of which much of the fertile county of Kent is composed. It lies southwards from, and about a mile distant from Bexley Heath—one amongst the ever-increasing number of growing suburbs that keep stretching out from London in every direction. Gardening is successfully carried out here in each department, plants especially being well managed. A pretty conservatory attached to the mansion has the roof completely clothed with Tacsonias, the shoots of which are allowed a good deal of freedom, so as to form a graceful hanging canopy over the whole. An arrangement of this kind has a charming effect, but as a natural consequence most of the plants required to keep up a display of flowers except shade loving things like Camellias, have to be grown elsewhere, on account of the limited amount of light which the roof climbers admit to the body of the structure. Throughout the various other houses devoted to fruit and other things, soft and hardwooded plants nicely grown, in considerable quantities were coming on to keep up a succession. Achimenes, so useful for summer display, were well in bloom, the plants stout, short in the stems, and not too much crowded in the pots, as one often sees them, and through which their flowering is of shorter duration than where they are allowed enough room. Of tuberous Begonias there were a number in fine flower. Represented as this continuous blooming and useful class of plants now is by all but endless variety in forms and colours, they commend themselves to all who have to keep up a display of blooms. Lilium auratum in various stages was coming on, some in flower, with others to follow. This species, and others of the now numerous family of Lilies, have the merit of not only producing beautiful flowers of the most varied character both in form and colour, but beyond this there is the advantage attending their cultivation, that even with a large stock they require comparatively little room under glass for much of the growing season, and they can be kept in winter in places where many things of less decorative value would not succeed.

In a span-roofed house filled with stock of various kinds were some Tuberoses just about opening their flowers. These favourite plants are as desirable for cutting, as they are for general decorative use. Where used in association with dwarfer, more compact-growing things, their tall, erect stems go to relieve the often otherwise too even surface. A roomy span-roofed stove contained, along with a general assortment of flowering and fine-leaved plants, a number of large and well-managed specimens, trained in the usual way, beautifully in flower. These Mr. Mitchell, the gardener, here grows well; they included Allamanda Hendersoni, of which there were several examples bearing larger flowers than usual, and the yellow colour deeper than it is often seen; A. grandiflora, equally well flowered. This distinct-looking species is not easily matched when, as here, in good condition. Dipladenia profusa was full of flower. This is one of the hybrid varieties in the way of D. amabilis; it is a free bloomer and equally free grower. A large and well-manged plant of Anthurium Scherzerianum bore from thirty to forty flowers. Of Ixoras, including the fine old I. coccinea, there were several varieties coming into bloom. Amongst ornamental foliaged plants were a large, densely-clothed specimen of Croton Queen Victoria, the leaves beautifully coloured; C. Johannis, one of the best of the narrow-leaved section, a nice companion plant to the first-named; a large example of Pandanus Veitchii, Areca Baueri, conspicuous for its fine arched leaves; and a healthy thriving example of Cycas revoluta. Of Ferns there is a nice assortment, well grown. They comprise several of the best kinds of Adiantum and others that can be confined within moderate space, and which it must be confessed are more generally useful than the large tree species, which, noble in appearance as they are, require much space to accommodate them. In another house, amongst a variety of plants, was one of the best grown examples of Asparagus plumosus I have met with. It was trained bush fashion round a few sticks.

A moderate sized house is occupied by a nice little collection of Orchids, which collectively are doing well, having that strong robust appearance in their leaves and bulbs that denotes their liking the treatment they get. Several examples of Dendrobium Wardianum have produced bulbs 4 feet long and unusually thick; D. crassinode, comparatively little inferior; as also D. thyrsiflorum and D. densiflorum. Several plants of Vanda tricolor and V. suavis, with stems 4 feet high furnished with leaves down to the bottom. Some of these were in flower. Phalænopsis grandiflora, and P. Schilleriana were growing freely. In Aërides there are a number of examples of A. crispum in excellent condition, with every leaf perfect down to the surface of the pots; a large specimen, in beautiful condition, of A. odoratum was carrying some twenty spikes of bloom. Cattleyas and Lælias thrive equally well in company with the warm species named Lælia purpurata, L. crispa, Cattleya Trianæ, C. Mendelii, C. speciosissima, C. Mossiæ, and others, several of which were in flower, are growing in a way that leaves nothing to be desired, as also numerous representatives of other genera including Cypripedium villosum and C. Stonei, very strong.

A large number of Chrysanthemums were coming on, which from their vigorous appearance promise to do good service in the conservatory when their time of flowering comes round.

Of fruit, the first crop of Grapes was about over; second house, mostly consisting of Black Hamburgh, bearing a heavy crop of medium-sized bunches, was just in, with others later to follow. In two Peach-houses, filled with good trees in free bearing condition, there were heavy crops of fine fruit. Outside, Apples and Pears were about an average. Mr. Mitchell speaks highly of the new Raspberry, Baumforth's Seedling: the fruit is good in quality, it comes in early, and is a profuse bearer. *T. B.*

## HOME CORRESPONDENCE.

**Large Vegetables.**—There are some who delight to "run down" certain flowers and vegetables because of their large size. A short time since I noticed in your columns that some one was running down Stott's Monarch Rhubarb, not because of any deficiency in its quality or productiveness—for on both these points it is unassailable—but because of the immense size of its stalks and their greenish colour. Now, I think the following is incontestible, certainly as regards Rhubarb, if it does not hold good with all other vegetables; viz., that where quality is satisfactory, large size can be no drawback, rather indeed, the reverse, and colour should be no drawback. It is said with regard to horses, that a good horse cannot be a bad colour: in other words, if a horse is good, peculiarities of colour in no way detract from his real value. The same writer who ran down the Rhubarb a week or two later while praising Champion Scarlet Runners because of their superiority in size over the old kinds, had no good word to say for Laxton's Girtford Giant Scarlet Runners, because this kind produces pods very much surpassing in size the Champion. Now, if the Champion is the better for being bigger, why are not the Girtford Giants the best for being the biggest? Something further was also said about the Girtford Giants, however, and this was, that they do not set their fruit freely, many of their blossoms producing no fruit. If this should be confirmed by further experience of this new kind it is, of course, a serious defect. Quite possibly, however, the best method of growing this kind has not yet been found. If, on further trial, it is found that, with suitable treatment, it is capable of setting as many pods as the old common kind, and these pods are on an average from two to three times as large as the old kind, and of equal quality, the correct inference to draw will be that this sort is two to three times as good as the old kind, less any extra expense of cultivation that it may be necessary to incur, to bring about the best results. Let it be taken as a general rule that plants (as well as other things) with a great predominance of good qualities over bad, are good, and likewise that other plants, equal in all other respects to these, but larger in size, are better. In a Rose, for instance, size of bloom, combined with fragrance, good form, fine shape, substance of petal, and hardiness of constitution, is a merit; and a Rose with similar good qualities, but with even larger-sized blooms, is even more meritorious. There may, of course, be exceptions to this rule, but that it is a rule few persons with a reputation for common sense will be disposed to deny. Let us by all means in our power endeavour to improve all good "strains" of flowers, fruits, vegetables, &c., in all their good points, by no means neglecting size. *J. E. E., Hants.*

**Pelargonium Growing at Foxhill, Westwood, Leeds.**—There used to be a commendable sort of pride which gardeners took in excelling in the cultivation of plants that required much skill and attention to grow them up to the best condition, and which there is reason for supposing is not now so prevalent as it once was. Amongst the plants that were looked on as a test of the cultivator's ability were the large flowered and the fancy kinds of Pelargoniums. At the time when the Chiswick and the Regent's Park shows came into existence considerable progress had been made in the raising of new varieties of the show and fancy kinds of these plants. Several growers who took an interest in this sort of work set about in earnest to make still further advance upon what had already been done. Pelargoniums then became one of the leading features of the London exhibitions. Exhibitors were encouraged by the offer of liberal prizes to aim at a higher standard of cultivation than had up to the time prevailed. With these, as with most other things subject to pot cultivation, the old course of culture had oftener than otherwise done little more than keep the plants alive in a neglected, miserable-looking state, consisting, as they usually did, of a few tall, straggling shoots, the result of their being crowded together as close almost as the pots would stand in dark, unsuitable houses, their condition still further affected by being kept much too far from the glass. A study of the habits and requirements of the various kinds of plants taken in hand with close attention to their wants soon resulted in the production of specimens that attained a size and vigour, combined with a disposition to flower profusely, such as had not before been looked on as possible, equalling, or in many cases exceeding that which the plants attained in their native countries. The increased vigour of growth and extraordinary development in the size of the flowers with their matchless combination of colours made these hybrid Pelargoniums favourites with plant growers and with the public, the outcome of which was the all but unequalled banks of soft and brilliant colours which an assemblage of these plants when well managed present. Gaines, Parker, Staines, Cock, Foster, Nye, Fraser, Dobson, Wiggins, James, and Ward were the chief growers, the last named when gardener to Mr. Wilkins of Leyton, for some years exhibited plants which for size and excellence of cultivation were quite equal to the magnificent examples shown by Messrs. Turner and Bailey, when at their best. The cultivation of Pelargoniums in the way that they used annually to be brought to the London exhibitions by the growers named, appears to have moved northwards, especially to Lancashire and Yorkshire; in the former county, Rylance, of Ormskirk, near Liverpool, for a long series of years has shown quantities of large, finely grown plants. In Yorkshire, May, of Bedale, Edwards, Steward, and Lazenby, of York, and last, but not least, Mr. Eastwood, gardener to the late F. W. Tetly, Esq., at Westwood, still at the same place with Mrs. Tetley, took up the cultivation of these splendid flowering

plants which have gradually been on the wane in the metropolitan district until those now forthcoming do little more than serve as reminders of times past to old frequenters of the London shows who still attend these gatherings. The effect produced in the tents devoted to Pelargoniums at the York and the Leeds shows is well known by those who have been in the habit of attending the exhibitions at these places. The immense number of these plants that are yearly brought into competition at the above-named shows differ in no way from those that used to be present at the metropolitan displays, except that the specimens are not usually quite so large as the largest that used to be shown in London. Mr. Eastwood's exhibiting has been confined to the York and Leeds shows; during the twenty-five years he has competed he has held the prominent position of leading prize-taker, frequently scoring 1st in nearly the whole of the numerous classes devoted to Pelargoniums, both open and those confined to amateurs, and this, moreover, with the competition of the keenest description. During the last twenty years he has taken 130 1st, seventy 2d, and thirty 3d prizes for Pelargoniums. With pot Roses Mr. Eastwood has also been very successful, having won with them fifty 1st, thirty 2d, and twenty-five 3d prizes. It often happens that those who see the various plants shown by the leading exhibitors of the present day, and still more so of the past, but who have no further acquaintance with them, are under the impression that those who grow them have every convenience in the shape of houses especially constructed for their cultivation, than which frequently nothing could be further from the fact. The Westwood Pelargoniums and Roses are a case in point. There is not a single house on the place devoted to plants. The whole of the Roses and the large collection of Pelargoniums are grown in vineries and Peach-houses, of which there are six of the former and four of the latter. They are all span-roofed structures, not very wide, with steep pitched roofs. For the greater part of the year the Pelargoniums occupy a wide shelf under the ridge immediately over the central path that runs the entire length of the houses. It is sometimes supposed that if gardeners are allowed to exhibit the plants or whatever they show will absorb attention to an extent that will cause other things to be neglected. Where the gardener is made of the right material there is no danger of this occurring, as he will naturally exert himself to the utmost, and in a way that would not be likely to occur were he not allowed the privilege of showing. The garden at Fox Hill collectively, both inside and out, gives evidence of this view being correct; everything in addition to the exhibition plants being well managed, with an air of order and cleanliness about the place that shows there are no shortcomings. *T. B.*

**Lilium Krameri.**—When this beautiful Japanese Lily was first introduced and for some time afterwards, it was single flowered. I ventured to predict that it would grow into having several flowers. We have bloomed it with five flowers to the stem, and I lately saw at my friend, Mr. McIntosh's, at Oatlands, a magnificent specimen growing in a Rhododendron bed. It was more then 6 feet high, and had eight fine flowers. I fancy this Lily does not like cold situations. A friend, a first-rate grower of many Lilies, tells me it will not thrive in his cold garden. With us at Oakwood, it grows well in several soils and situations, but I think it prefers shade and shelter. L. californicum, which grows in an orchard-house, was for many years a single-flowered Lily, is now blooming in the wood garden with as many flowers as the ordinary L. pardalinum. *George F. Wilson.*

**Passion-flowers.**—Noticing Dr. Masters' remarks on the infertility of Passion-flowers with their own pollen in a recent number, I am able to state, on the contrary, that hundreds of plants have been raised by Messrs. Lucombe, Pince & Co.'s propagator recently from seeds saved from a plant which covers the side of an old cottage in their neigbourhood. There is no other plant to my knowledge in the locality, and this one I planted, when quite small, some seven or eight years ago, but it has grown wonderfully, and was blooming finely when I passed that way a short time since. *W. Napper, Alphington Cross.* [This is a very interesting exception to the rule laid down by Darwin and others. Are the flowers fertilised by their own pollen, or by that of some other flower on the same plant? ED.]

**Tomato Ne Plus Ultra.**—I was recommended to try this kind by Mr. Garnett, of Bystock Gardens, Exmouth. I did so, and found it to merit all the good qualities attributed to it. It is rather a strong grower, yet short jointed, and of a free-bearing habit. The fruit, which hangs in long clusters, is large and smooth, and of the best flavour. *T. G., Cavendish Gardens, S.W., July* 20.

**How to Preserve Rose Blooms.**—Your correspondent, W. Comfort, (p. 91) will be able to make a very good *pot pourri* if he will proceed according to the directions given below, and the scent will last for three or four years. Mix ½ lb. of common salt, a ½ lb. of saltpetre, ¼ oz. of storax, six cloves, a handful of well dried heads of Lavender flowers and a handful of dried Bay leaves. Then add a considerable quantity of Rose leaves which have been gathered on a dry day, and partially dried on newspapers in the sun. Stir all up well occasionally, and add, if you like, the petals of other fragrant flowers. Some put a few Sandal-wood chips and Cinnamon, others like Orris root and Musk, but I think the last spoils all the rest. *Helen Watney, Wimbledon.*

**Diseased Chrysanthemums.**—The pieces of Chrysanthemums which I send you are infested with some disease, and I should be greatly obliged if, in the pages of the *Gardeners' Chronicle*, you could tell me what disease it is. I have lost two dozen plants by this disease, some of them being attacked close to the ground, and others about 2 feet above it. Small, black, globular bodies roll out of the stems as you will see, some of them being found in the centre of the stems, whilst others appear just under the bark. It is a disease which I have never seen before in Chrysanthemums. *E. E. Perry.* [The examples of diseased Chrysanthemums sent by "E. E. P." are identified with the diseased Potato stems described by me in the *Gardeners' Chronicle* for August 20, 1880. Readers interested in the subject can refer to that article. The Chrysanthemum stems sent are reduced to a state of tinder. On cutting, or pulling them in two longitudinally, they are found to be infested with fungus spawn, or mycelium mixed with dust, the remains of the perished pith. In the centre of each stem numerous black bodies are ensconced: their bodies look exactly like the dung of mice: some of them are embedded in the bark. The black growths are the sclerotia of botanists, compacted masses of fungus spawn in a hard resting condition. These black bodies will rest in a living state in the old Chrysanthemum material till next spring; they will then germinate, and probably produce a fungus named either Peziza ciborioides, P. postuma, P. sclerotiacea, or P. sclerotiorum. These fungi are probably all mere forms of one species, any slight differences being merely in the imagination of the describers. The fungus before us seems to be the same with the sclerotium which causes the so-called Peziza disease of Potatos—a disease which of late has wrought such destruction, year after year, in Ireland. The only way to lessen its ravages is to at once destroy with fire all infected material, for every black body which falls to the ground now will produce two or three millions of spores next spring, and each spore, under favourable circumstances, will be able to invade next season's Chrysanthemum plants. *W. G. S.*]

**Variations in Potato Bloom.**—I have carefully examined all the bloom on diverse kinds of Potatos here, and failed to find one showing any diversity or variation from the normal form of the sheath or calyx, and in every case the pointed lobes are prominent. The particular kind which shows rounded or obtuse lobes must, I think, be from some distinct species to that commonly grown in gardens. Whilst in the common varieties of the Potato we see little diversity in form or size of bloom, there is prominent distinction often found in colour and expansion as in the latter case some corollas almost reflex, in others they are half closed. Looking over the illustrations of species of Solanum found in Mr. J. G. Baker's interesting review of tuber-bearing species, as read before the Linnean Society in January, 1884, I find, curiously enough, that the calyx segments of the flowers of S. tuberosum are far more rounded or obtuse than are those of any other species, whilst those on flowers of S. Jamesii are the narrowest, or most pointed. As the calyx segments of almost if not all flowers borne by garden varieties of Potatos are found to be long, lance-shaped, or pointed, it is worth consideration whether S. Jamesii, or perhaps the species which has the next most pointed calyx segments, S. Maglia, may have some parental connection of perhaps ancient date with our present edible kinds. The subject opens up an interesting field of inquiry for the botanist. *A. D., Bedfont.*

**The Pruning of Orchids.**—No one seems to contradict Mr. N. Blandford's notes on Orchid pruning with regard to Lælia anceps, on p. 41 of July 11 issue. I do not wish to do so either, but I want to lay before your readers a question arising out of the note mentioned, and more especially to ask Mr. Blandford himself, as follows:—Is cutting away old, worn out, leafless bulbs of a Cattleya or Lælia pruning as used and performed on Dendrobiums by some growers? To my mind, Mr. Blandford's pruning is merely taking away an old bulb which has lost its leaf. The leaf probably died naturally, the bulb would follow, and when discoloured any one would take it away. To use his own words, "as a matter of course the old back growths lost their foliage as time passed away," in other words, they lost their natural functions, for years had exhausted their system—they died, and he removed them. I think Mr. Blandford cannot claim these facts to establish the superiority of pruning, for really it is not pruning, but only the ordinary work of cultivation. He says lower down (in the second paragraph) "pruning as I have it is not injurious," and thereby hardly ranges himself under the hard pruners, though he considers he is a pruner. *De B. Crawshay, July* 21.

**Choice Zonal Pelargoniums.**—One of the features of the Manchester Whitsun show was a stand of Chilwell-raised zonal Pelargoniums produced by Messrs. J. R. Pearson & Son. There were several boxes of bunches of massive flowers, remarkable alike for their size, substance, form, and rich and varied colours. Not long since an inquiry was made—Which are the best of Pearson's zonal Pelargoniums? A selection of flowers made at Manchester, and for their obviously excellent character, enables one to answer this question. As a matter of course, the flowers had been produced under glass, but they were so fine as to suggest the admirable material at the command of gardeners for making their greenhouses, say, during the spring and early summer months, while it is a great advantage to have—the Messrs. Pearson have, and as Mr. Cannell has—houses well adapted for the purpose of growing zonal Pelargoniums in the best character, yet a command of heat enables gardeners to do a great deal more than some of them appear to be able to perform in the way of producing zonal Pelargoniums in good character early in the season. The selection of Pearson's varieties consists of Mary Caswell, white, flushed with pink; Lady Chesterfield, salmon, suffused with orange, very fine; Lord Chesterfield, bright magenta; Plutarch, bright scarlet, with bold white eye; Ajax, rich vermilion; Caroline, glowing crimson-scarlet, white eye; Cælia, rose, shaded with magenta; C. H. Swinstead, vermilion; Dr. Orton, dark crimson, old, but still very good; Eurydice, lilac-pink, white eye, very pretty; Herminius, scarlet, shaded with purple; James Douglas, rich dark crimson; Lucy Mason, salmon, suffused with orange; Miranda, scarlet and magenta; Mr. Holford, salmon; Mrs. Miller, dark crimson; Nelly Thomas, crimson; Nerissa, salmon-scarlet; Othello, dark scarlet, white eye; Raphael, scarlet, shaded with rose and magenta; Ruby, rosy-scarlet, white eye; Tristram, crimson-scarlet, white eye; Viola, magenta, with dashes of red, white eye; and Zeno, scarlet, shaded with magenta. Add to these Queen of the Belgians, white, and there is as perfect a selection as one can well desire to have. *R. D.*

**Peaches Eightpence Each.**—I would like to ask any reader of the *Gardeners' Chronicle* if he ever remembers an almost useless Peach to sell for 8*d.*, when the price in the market was from 2*s.* to 8*s.* per dozen. On July 15 I sent thirty Peaches to Covent Garden Market, the consignment arriving there on the next day. The salesman was so kind as to inform my employer by letter that the Peaches arrived in an almost useless condition, and that he would sell them at only 8*s.* per dozen, mentioning that had they arrived in good condition they would doubtless have made double that price. Of course I do not know what may be the opinion of the readers of the *Gardeners' Chronicle*, but I should say that a man who

gave 1s. 4d. each for Peaches in the middle of July would have more money than wit. *Fair Play.*

**Phormium tenax variegata.**—A plant of Phormium tenax variegatum was planted in the garden of Robert F. Wilkins, E.q., Brookhill, Kingswear, South Devon, in the spring of 1881. It has grown to a fine mass, and this year for the first time is flowering three spikes upwards of 12 feet high. Is it usual for it to flower outdoors? [It is in flower out-of-doors at Kew.] This plant has had no protection. Phormium tenax also flowers with us this year. *H. Allen.*

**Exhibiting Orchids.**—I would like to offer a few supplementary remarks to Mr. Douglas' letter on p. 85, July 18. He says it is doubtful if a class for fifty Orchids would bring the best growers to the front. I think it is certain it would not, for the class for twenty-five at the Royal Horticultural Society's Orchid Show only brought one competitor. Surely no greater confirmation is wanted that the class for fifty Orchids as mentioned on p. 16 (in reply to which leading article Mr. Douglas writes) would be useless. While hereon, I would state that the Council of the Royal Botanic Society this year made an error in offering prizes of a higher value to made-up plants than to *bonâ fide* specimens. The object of a society (especially should it be a "Botanic" one), is to further and reward good culture. This was overlooked this year, and the massing of small plants in a big pot for the occasion was bid for, though, strange to say, the 1st prize made-up lot was not an all made-up lot, as Mr. Douglas can tell. If the man who grows a small plant into a big one is to be paid worse than he who buys a lot and pots them up together for a year (or a week perhaps), I maintain that Society is overlooking its main object and had better not do so for its own as well as the exhibitors' interests. *De B. Crawshay.*

**Texture of Soils.**—Everyday experience points to the fact that in the matter of soils successful cultivation depends not alone on the land containing the requisite food elements to supply the wants of the plants grown thereon, but also to the texture of the soil being such as to favour the production of roots, and admit of their penetrating freely through it in search of the elements therein present. It is generally found that the progress made by a plant is regulated by the greater or less quantity of roots it possesses, particularly the small feeding fibres with their absorbing extremities, which where the conditions of the soil are favourable will usually be found ramifying in all directions, acting the part of foragers to supply the army of shoots and leaves aboveground with the water requisite to keep up a healthy existence. Nature does not work in vain, and few, if any, of her children make greater efforts to adapt themselves to circumstances than do plants, and where the texture of the soil happens to be too close to admit of the feeding rootlets entering in their wonted fashion, their ramification is correspondingly reduced, the result of which is, that the progress made by the plants to which they belong is so much slower. In the case of some plants, such, for instance, as are of an enduring nature requiring a long period to reach maturity, the slower growth may be no disadvantage, possibly the reverse; but with most things, particularly those that are of an annual duration, like the majority of kitchen garden crops, slow impeded growth, such as instanced, is much loss—loss from a twofold point of view, in quality as well as in quantity, for it goes without saying that vegetables in any way checked or retarded in growth, are never equal to such as have been grown under conditions favourable to their quick and free development. Cultivation, by which the land is periodically stirred to a depth commensurate with that to which the roots of the plants to be grown naturally descend, aided by the drying influences of sun and air, and the disintegrating action of frost, effect a good deal in the way of pulverising and breaking up close adhesive soils, still, where there is naturally an absence, or all but absence, of sand in the soil, the effects of digging and trenching, helped by the weather influences, do not effect the permanent loosening of the soil in a way that befits it for the full production and extension of roots, as even in the short space of a few months the naturally adhesive nature of the land is such that in garden phraseology it goes together again to an extent that seriously impedes root progress. Additions in the shape of manure or vegetable matter dug in have an influence for a time in keeping heavy soils of a clay-like nature more open, but as this kind of matter decays it leaves little impression of a lasting character on the close compact mass with which it has been incorporated. Nothing short of the addition of some matter that will mix with the soil, but that will not decompose, will suffice, otherwise no more than a temporary influence will be effected. Sand, the material that where naturally present in the soil keeps it permanently in a condition suited to the free action of roots, is the commodity that would present itself as the most suitable for adding to heavy retentive soils, such as many kitchen gardens are composed of, and to these my remarks mostly apply; but unfortunately in localities where the land is of the most stubborn clayey nature there often happens to be a total absence of this material within a distance that admits of its being used in quantities sufficient to fully remedy the evil, and, beyond this, it is generally found that where sand is applied with this object to land that is annually dug it gradually gets washed low down so as to get below the point where most wanted. But there is another and a lasting remedy whereby land of the description under notice can be brought to a right condition, and which moreover in most cases offers the advantage of the material being on the spot in the shape of clay, which simply needs burning to bring it to a state that will correct the evil in a way that nothing else will, as from the time it is dug into the land no perceptible disentegration takes place, and through the fact of its being lighter than the soil with which it is incorporated, it does not descend. In gardens where the land is of a heavy clay nature, the soil is usually insufficient in depth, and here another advantage presents itself by bringing up 8 or 10 inches of that which lies next below that which the spade has hitherto stirred, burning, and then working it in with that which has previously been at the top. The staple is so much deepened, and the whole brought to a condition that befits it for the free unchecked extension of the roots of the different crops to be grown on it, with the further gain that the temperature of the soil is increased by the quicker passage of superfluous water from it consequent on its more open condition. Clay, or, as it is more generally termed, ballast-burning is often looked upon as a formidable operation by those who reside in localities where little or none of such work is carried out; yet it is neither difficult nor expensive, even in places where fuel may be dear. Work such as here described can be done at little if any more cost per acre than the market gardeners often spend on a single application of manure, with this difference, that where the land is too adhesive in nature for the roots of plants to act in it as they should, one may go on indefinitely applying manure to it, which, under the conditions will never be more than half effective from any point of view, whereas the ballast remedy will be complete and lasting in its influence. It is no exaggeration to say that the cost of the work will in future years be quite covered by the saving in labour effected through the much greater ease with which digging, hoeing, and other operations will be carried out through the freer condition of the soil, with the additional advantage that it will admit of being worked in weather that would preclude the possibility of its being stirred if in its original state. The winter season, when the crops in kitchen gardens are cleared off, affords an opportunity for this kind of work being done that does not occur at other times. To those who have not had any experience with this material it may be well to state that the finer condition to which it is reduced before being dug in the more effective it will be. The nature of the clay has much to do with the state of the material after it has undergone the process of burning as to its being fine. Coal-ashes, against the use of which intermixed with the soil there is often a prejudice, is fairly effective in its lightening influences on heavy land; but it is only in the neighbourhood of large towns that it is obtainable in any considerable quantity, and it is not so good as the burnt clay. *T. B.*

**Dendrobium nobile var. Cooksonianum.**—At a meeting of the Floral Committee at South Kensington on March 10 I showed a plant under the name of Dendrobium nobilissimum, and about the same time I sent a flower to Professor Reichenbach telling him the name I had shown it under, and its history, as far as I knew, but not mentioning the source from which I obtained it. I have since been informed, and believe to be correct, that naming it Dendrobium nobilissimum was incorrect, inasmuch as the generic [specific] name should have been retained. The Professor sent back a notice, naming it Dendrobium nobile Cooksonianum, and this notice appeared in your issue of May 30 last. My stock of plants originated from two I obtained in exchange from Mr. T. Lange, of Heathfield Lodge, Gateshead-on-Tyne in April, 1883. The original plant having appeared about five years previously in his garden, which has been under the charge of Mr. Andrew Methven for ten years, and it is by his care and attention that it has been increased, till both he, Dr. Wallace, and I have plants of this grand variety. It was only quite lately (some time after sending up my plant to South Kensington) that I heard that the plants in Mr. Methven's charge have for years been called Dendrobium nobile Heathfieldianum (they certainly were never so spoken of to me either by Mr. Lange or Mr. Methven), but I am now satisfied such is the fact, and I wish to give the entire credit of raising the variety to Mr. Andrew Methven. As my reason for not mentioning Mr. Methven's name at an earlier date may not be apparent, I may state that I was endeavouring to buy up the entire stock of the variety, and did not wish to provide competitors against myself, which such a course would have entailed. *Norman C. Cookson, Oakwood, July 14.* [This is an outcome of unauthorised nomenclature. There is nothing to prevent a grower or proprietor from naming any plant in the manner he pleases; but as a matter of convenience it would be far better, either that he should not name the plant at all, or if, he does so, that he should follow the canon law. The case is one of "regular Peloria," such as we see more or less perfect specimens of frequently in the course of the year; and are glad to see that growers (not raisers in this case) have succeeded in perpetuating the sport. ED.]

**Schedules Again.**—As an exhibitor in a class for "Four pots of annuals or herbaceous plants grown in pots, in flower, and distinct," at the late Wimbledon show, I exhibited two Achimenes and two tuberous Begonias, all distinct, for which I was disqualified. I should feel much obliged if you could give me any reason for my disqualification. *Joseph Law.* [In default of precise instructions in the schedule the judges would fall back on general custom. Now it is not the general custom to include in schedules the Achimenes or tuberous Begonias as annuals or herbaceous plants. Botanically speaking, the judges were wrong, but they were not judging from a purely botanical point of view, but from that of exhibition custom, and in so far they were right. The blame rests with the schedule framer. ED.]

**Galls on Orchid Roots.**—I see another note on "Galls on Orchid roots" in last week's issue at p. 85, but as far as I can see the paper is a discussion of what sort the insect is—that does not help growers. We want to know, if we should happen to get them, are they injurious to the plants? [Obviously.] How are we to kill them except by cutting off the affected root or puncturing it to kill the larvæ? and how are we to stop them breeding if they increase after the roots are cut off? *De B. Crawshay.*

# Reports of Societies.

## THE BIRMINGHAM ROSE SHOW, July 15 and 16,

at the Botanic Gardens, Edgbaston, was a decided success, an excellent display of flowers being staged in the new large glass corridor, and was well set-off by various plants belonging to the gardens. In the nurseryman's classes the following exhibited:—

For thirty-six trusses.—1st, The Cranston Nursery Co.; 2d, Messrs. Perkins & Son, Coventry; 3d, Messrs. Paul & Son, Cheshunt, equal 3d, Mr. Charles Turner, Slough.

For thirty-six singles.—1st, Messrs. Paul & Son; 2d, The Cranston Nursery Co.; 3d, Mr. C. Turner.

For twenty-four trusses.—1st, The Cranston Nursery Co.; 2d, Messrs. Perkins & Son.

For twenty-four singles.—1st, The Cranston Nursery Co.; 2d, Messrs. Paul & Son; 3d, Mr. H. Frettingham, Nottingham.

For twelve Teas and Noisettes.—1st, Messrs. Paul & Son; 2d, The Cranston Nursery Co.; 3d, Mr. C. Turner.

In the amateurs' class for twenty-four singles.—A. H. Griffiths, Esq., Harborne, was 1st; W. G. Mayhew, Esq., 2d; Mr. Brown, Shadon Hall, 3d.

For twelve trusses.—1st, R. Ramsden, Esq.; 2d, A. H. Griffiths, Esq.; 3d, Rev. H. W. Watson.

For twelve singles.—1st, A. H. Griffiths, Esq.; 2d, Rev. J. A. Williams; 3d, J. Richards, Esq.

For twelve Teas.—Rev. J. A. Williams, with a very fine lot, 1st; 2d, R. Ramsden, Esq.; 3d, Rev. H. W. Watson.

Some excellent blooms were staged, and in Messrs. Cranston's exhibits were fine blooms of Deborah, Duchesse de Morny, A. K. Williams, Marquis de Castellane, Merveille de Lyon, E. Y. Teas, Madame Caroline Kuster, Comtesse de Nadaillac, Prince Arthur, Madame Willermoz, Antoine Ducher, Lady Sheffield, Horace Vernet, Lady Mary Fitzwilliam, Reynolds Hole, Madame Ferdinand Jamain, very fine; Duke of Edinburgh, Marie van Houtte, Madame Thérèse Levet, Innocente Pirola, and Jean Ducher.

In Messrs. Paul's stands were very fine blooms of A. K. Williams, Marshall P. Wilder, Madame Alphonse Lavallée, Queen of Queens, Lady Sheffield, Duke of Teck, Star of Waltham, Countess of Rosebery, E. Y. Teas, Merveille de Lyon, Souvenir d'Elise, Marie Baumann.

In Mr. Turner's stands were excellent blooms of Marguerite D'Ombrain, Merveille de Lyon, Comtesse de Nadaillac, very fine; A. K. Williams, King of Bedders, Caroline Kuster, Françoise Levet, Marie Verdier, and Madame Lambard, fine.

In Messrs. Perkins' stands were also good blooms of Duc de Rohan, Mrs. Laxton, Charles Darwin, Souvenir de Thérèse Levet, very fine; Louis van Houtte, E. Y. Teas, Alba rosea, Etienne Levet, Merveille de Lyon.

Messrs. Paul & Son's stand of twelve Teas, which took he 1st prize, were a superb lot, consisting of Niphetos, Catherine Mermet, Souvenir d'Elise Vardon, Souvenir d'un Ami, Perle des Jardins, Maréchal Neil, in superb colour; Innocente Pirola, La Boule d'Or, Caroline Kuster, and others.

The Rev. J. Williams had in his stand of Teas a remarkably fine Madame Lambard, Marie van Houtte, Etoile de Lyon, Jean Ducher, Souvenir de Paul Vernet, Anna Olivier, Perle des Jardins, Caroline Kuster, Madame Hippolyte Jamain, Souvenir d'Elise Vardon, Catherine Mermet, and Madame Furtado.

Mr. Davidson, nurseryman, Hereford, staged a very fine twelve blooms of Merveille de Lyon.

Mr. Hans Niemand set up a beautifully arranged group of plants, for which a special Certificate was awarded, also special Certificates for Caladium candidum and the new double-flowered Abutilon Thompsoni. Mr. Vertegans received a Certificate for a fine collection of alpine and herbaceous plants, and Mr. F. Perkins, Leamington, a Certificate for two handsome bouquets of Roses and Rose sprays. Mr. Perkins also sent examples of the white Pelargonium, Volonté Nationale.

## SHEFFIELD BOTANICAL AND HORTICULTURAL: July 17 and 18.

THE second annual show of the above Society was opened on July 17, in the Botanical Gardens, with every promise of being, in all respects, a much more successful exhibition than that held last year. The committee had done well in taking the advice given them in engaging a gentleman well versed in arranging exhibitions of this description, as everything this year was carried out in a thorough practical manner. Unfortunately financially the show is a failure, owing to the inclemency of the weather, and last year the show suffered equally or even worse than this year.

### PLANTS IN POTS.

One of the principal features of the exhibition was the groups of plants arranged for effect. These classes called forth some spirited competition, but in most cases the groups were far too crowded with plants; however, they produced a good effect looked at as a whole.

The competition with table plants was very keen, the entries numerous, and many good plants adapted for the purpose were staged, both in the nurserymen's and amateurs' classes.

Florists' flowers in pots were poor in numbers, as in quality. Foliage plants were small, but nice and clean, as were also exotic and hardy Ferns.

### ORCHIDS.

The entries were small, both by nurserymen and amateurs. Messrs. Fisher, Son & Sibray were 1st in the former; in the latter some very strong comments respecting the awarding were made: the person placed 2d, who afterwards was made equal 1st, in my opinion, as well as in that of others, was a very easy 1st.

Cut flowers, especially Roses, were very good. Messrs. Cranston & Co., Hereford, easily securing the highest honours by staging some fine clean fresh blooms. Amateurs also showed both numerously and well, the leading prize going to a Liverpool grower.

### BOUQUETS, &C.

Bouquets were well shown, the leading prizes going to Messrs. Perkins & Sons, of Coventry, in the nurserymen's class; also for button-hole bouquets. These were very pretty, and good examples of skill, not being so crowded with blooms as such productions so often are.

### FRUIT

was shown in quantities, but the quality was much below the average of former years, except for Grapes, Peaches, and Pines, and the prize for the best collection of eight dishes went to Mr. Wood, Redding's House, Alfreton, for a good clean collection.

### MISCELLANEOUS.

Cottagers came well to the fore, some very good examples of cultivation being shown in their respective classes,

Messrs. Fisher, Son & Sibray, Handsworth, showed a very extensive collection of hardy trees and shrubs, stove, greenhouse, foliage, and flowering plants, &c., which occupied the whole of a large tent. These were a great attraction in themselves, and were well arranged.

Mr. B. S. Williams. Holloway, sent a good collection of miscellaneous flowering and foliage plants, including some good Orchids, Nepenthes, &c., which were beautifully arranged at one end of the pavilion, forming a feature much admired, especially the novelties.

Mr. Ewing, the enthusiastic Curator, has brought the Botanical Gardens here, by his assiduous endeavours, into a grand condition, considering the fickle nature of the climate of this part. The bedding was very well managed, in fact it was one of the finest displays of the kind that I have seen for some time; he evidently having by long experience succeeded in learning the plants best adapted for the climate, and uses them with great skill and artistic feeling. The various departments in the houses are also well managed, and present a fine display of foliage and flowering plants. (*A Correspondent.*)

## CHISWICK HORTICULTURAL: July 16.

SOME of the glories that clustered round the old Chiswick exhibitions of thirty years ago centred about the gardens on the above date, when the fifth annual exhibition of this Society took place. Some features of the old shows have ceased to be repeated at modern exhibitions, some features of this particular exhibition would not have characterised the shows of a former day—such as the groups arranged for effect; the very fine tuberous-rooted Begonias, the newer forms of Coleus, and the magnificent erect Gloxinias.

A long tent set up on the grass plat, south of the Council chamber, accommodated the leading plants, groups, cut flowers, table decorations, &c.; a supplementary tent took the foliaged plants, &c.; while the fruit and vegetables, unusually numerous, found a place in the great vinery.

### GROUPS OF PLANTS.

In the class for the largest groups, Messrs. Hooper & Co., Twickenham and Covent Garden, were placed 1st, with a most charming arrangement; Messrs. J. Fromow & Son, Sutton Court Nursery, Turnham Green, being a good 2d; 3d, E. H. Watts, Esq., Devonshurst (Mr. Wright, gr.).

The best of the smaller groups came from F. R. Geaves, Esq., Cambridge Park, Twickenham (J. W. Tillswell, gr.), being run very hard by E. M. Nelson, Esq., Hanger Hill House, (W. Chadwick, gr.); H. G. Lake, Esq., Fairlawn House, Acton (Mr. H. Davis, gr.), being 3d.

### STOVE AND GREENHOUSE PLANTS.

The best group of six, a nice lot, came from Mrs. Meek, Poullett Lodge, Twickenham (Mr. W. Bates, gr.), who had Clerodendron Balfourianum, Bougainvillea glabra, Allamanda Hendersoni, Stephanotis floribunda, Dracophyllum gracile, and Dipladenia hybrida; 2d, E. H. Watts, Esq.; 3d, E. M. Nelson, Esq.

The best three Fuchsias came from E. H. Watts, Esq., good bushy well grown plants; H. G. Lake, Esq., coming 2d.

Zonal Pelargoniums were shown in groups of six and three, and being nicely grown and flowered formed attractive patches of colour.

Tuberous rooted Begonias are always well done at Chiswick, and the best six came from J. J. Flack, Esq., Twickenham (Mr. J. Sallows, gr.); J. R. Starling, Esq., The Chestnuts, Gunnersbury, coming in a good 2d. Cockscombs were pretty good, and Gloxinias were numerous and fine; the best twelve plants of the latter came from G. P. Greenfield, Esq., The Spring, Hanwell (Mr. W. Wright, gr.); J. J. Flack, Esq., 2d. Mr. Flack had six admirable plants of Achimenes.

### FOLIAGE PLANTS.

The best six came from Mr. E. M. Nelson, who had fine examples of Croton variegatus, C. angustifolius, Latania borbonica, Alocasia Lowii, Dracæna Youngi, and Areca lutescens; 2d, H. G. Lake, Esq. Mr. Nelson also had the best six exotic Ferns, consisting of fresh well grown specimens of Gymnogramma Lauchearæ, Davallia Mooreana, Dicksonia antarctica, Adiantum Santa Catherinæ, A. cuneatum, and Lygodium scandens; 2d, E. H. Watts, Esq., with a good lot also. No Caladiums were shown, but Coleus were abundant, Mr. J. J. Flack having the best, closely followed by C. J. Waite, Esq., Esher. Lycopods were superbly done by Mr. J. R. Starling, large well-grown specimens in the finest character, the sorts Mertensi, Krausii variegata, Krausii aurea, Mertensi variegata, stolonifera, and uncinata; E. M. Nelson, Esq., was 2d. Plants for table decoration were largely and well shown.

### CUT FLOWERS, ROSES.

Of these there was a good display, some excellent blooms being shown. The best twenty-four came from Mr. W. Rumsey, Waltham Cross; T. W. Girdlestone, Esq., Sunningdale, being 2d, having some fine Teascented varieties in his box. Mr. G. P. Greenfield had the best six; Wm. Lindell, Esq., Ealing (Mr. Wilson, gr.), being 2d. H. J. Atkinson, Esq., M.P., Gunnersbury House (Mr. J. Hudson, gr.), was 1st with twelve bunches of cut flowers, an admirable lot of stove and greenhouse subjects; W. Lindell, Esq., being 2d. Hardy herbaceous flowers were well represented, and in the class for twenty-four blooms of Gloxinias, in pairs, in twelve varieties, Mr. Hudson was 1st with a very good lot, Mr. Nelson coming in 2d. Bunches of zonal Pelargoniums were numerous and very good.

### TABLE DECORATIONS, BOUQUETS, &C.

The best three stands or vases for table decoration came from Mrs. Hudson, Gunnersbury House Gardens, arranged in the excellent style characteristic of this able decorator; Mr. J. R. Chard, floral decorator, Clapham, was 2d; and Mr. J. Prewett, Hammersmith, 3d—both very good. Miss S. A. Fromow had the best single piece; Miss Prewett being 2d. Miss Barron, Sutton Court Road, had the best vase of wild flowers—a very pretty and tasteful arrangement; Mr. D. Bullen, Little Sutton, being 2d. In the class for three bouquets, one bride's and two bridesmaid's, Mr. W. Gardiner, Bayswater, was 1st; Mr. J. Prewett being 2d; and Mr. G. Phippen, Reading, 3d. Buttonhole bouquets were both numerously and well shown.

### FRUIT.

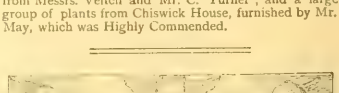
Mr. Hudson had the best two bunches of black Grapes, showing very fine Madresfield Court; Mr. Nelson being a near 2d, with well finished Black Hamburghs; and Mr. Baird 3d, with the same. The best two bunches of white Grapes were from Mr. Baird, who had excellent Duke of Buccleuch, which he admirably finishes in a mixed house. Mr. J. Coombes, Sheen House, Richmond, was 2d, with Muscat of Alexandria. Foster's Seedling was also shown. Strawberries, Cherries, Raspberries, Currants, and Gooseberries were also well shown.

### VEGETABLES.

These were extensively shown, and in good condition. Mr. C. J. Waite, Glenhurst, Esher, was invincible in this department, as he was 1st, with nine dishes of vegetables; also in the classes for six dishes, in which special prizes were offered by Messrs. Carter & Co. and Messrs. Sutton & Sons; and also for three dishes of Potatos. Peas, Tomatos, Cucumbers, &c., were very good.

One special class at this exhibition is always of a very interesting character, namely for the best hand-painted china or terra-cotta vase, tile or plate, handsome special prizes being offered by Mr. J. R. Starling and the Chiswick School of Art. The 1st prize went to Miss A. E. Heritage, South Kensington; 2d, Miss E. Ray, Hammersmith; 3d, Miss A. Fitch, Wimbledon.

Miscellaneous contributions comprised a wonderful collection of hardy ornamental and variegated plants from Messrs. C. Lee & Sons' arboretum at Isleworth; and cut Roses from their Ealing nurseries; cut Roses from Messrs. Veitch and Mr. C. Turner; and a large group of plants from Chiswick House, furnished by Mr. May, which was Highly Commended.




*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, JULY 22, 1885.

| MONTH AND DAY | BAROMETER: Mean Reading Reduced to Sea-level | TEMPERATURE OF THE AIR: Departure from Average of 18 years | Highest | Lowest | Range | Mean for Day | Departure of Mean from Average of 18 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point | Degree of Humidity Sat. = 1000 | WIND: Average Direction | RAINFALL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| July | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 16 | 29 83 | +0.02 | 74 | 54 | 20 | 62 | 0 — | 47 | 60 | S W. | 0 01 |
| 17 | 29 88 | +0 08 | 70 | 54 | 16 | 60 | 6 — | 42 | 58 | S.W. | 0 00 |
| 18 | 29 77 | —0.03 | 73.5 | 54 | 19 | 61.3 | — 1.5 | 54 | 80 | S W. / W S W. | 0 00 |
| 19 | 29 70 | —0 10 | 73.2 | 59.2 | 14 | 63 | + 1 1 | 58 | 84 | S W | 0.00 |
| 20 | 29 78 | —0 01 | 77 | 59 | 18 | 67 | 5 + 2 8 | 56 | 74 | S W. | 0 02 |
| 21 | 30 16 | +0 37 | 74 | 58 | 16 | 65 | 2 + 0.4 | 54 | 75 | E | 0.00 |
| 22 | 30 25 | +0 47 | 75 | 55 | 20 | 65 | 3 + 0 8 | 47 | 57 | E | 0 00 |
| Mean | 29 91 | +0 11 | 74 | 55 | 17 | 63 | 6 + 0 1 | 52 | 70 | S.W. | 0 01 |

July 16.—Dull morning, fine and bright at times in the afternoon
— 17.—Dull day, finer about 5 P.M. Clear night.
— 18.—Dull but fine through out
— 19.—Dull day, occasional sun-light.
— 20.—Dull day, occasional sunshine
— 21.—Dull day, alternately clear and cloudy.
— 22.—Very fine day and night.

LONDON: *Atmospheric Pressure.*—During the week ending July 18, the reading of the barometer at the level of the sea increased from 29.96 inches at the beginning of the week to 30.07 inches by 9 A.M on the 13th, decreased to 30 01 inches by 5 P.M. on

the 13th, increased to 30.24 inches by 9 A.M. on the 15th, decreased to 29.98 inches by 5 P.M. on the 16th, increased to 30.08 inches by 9 A.M. on the 17th, and was 29.91 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.07 inches, being 0.09 inch lower than last week, and 0.08 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 77°, on the 15th; on the 12th the highest was 68°. The mean of the seven high day temperatures was 72°.9.

The lowest temperature was 49°, on the 14th; on the 12th the lowest temperature was 57°.8. The mean of the seven low night temperatures was 53°.5.

The greatest range of temperature was 26°.2, on the 15th; the smallest, on the 12th, was 10°.2. The mean of the seven daily ranges was 19°.4.

The mean temperatures were—on the 12th, 60°.6; on the 13th, 61°.5; on the 14th, 58°.7; on the 15th, 62°.9; on the 16th, 62°; on the 17th, 60°.6; and on the 18th, 61°.3; and these were all below their averages (excepting the 15th, which was 0°.2 above) by 1°.8, 1°, 3°.9, 0°.7, 2°.1, and 1°.3 respectively.

The mean temperature of the week was 61°.1, being 3°.9 lower than last week, and 1°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 135°, on the 15th and 16th. The mean of the seven readings was 117°.2.

The lowest reading of a minimum thermometer placed on grass was 38°.5, on the 14th. The mean of the seven readings was 42°.7.

*Rain.*—Rain fell on three days during the week to the amount of 0°.44 inch, of which 0°.41 fell on the 12th.

ENGLAND: *Temperature.*—During the week ending July 18, the highest temperatures were 78° at Cambridge, 77° at Blackheath and Leeds; the highest at Bolton, 62°, at Newcastle 64°, at Liverpool 65°.1. The general mean was 70°.8.

The lowest temperatures were 39° at Truro, 40°.1 at Bolton, 40°.4 at Wolverhampton; the lowest at Brighton was 50°, at Blackheath 94°, at Newcastle 48°. The general mean was 45°.2.

The greatest ranges were 35°.5 at Wolverhampton, 32° at Leeds, 31°.1 at Cambridge; the smallest ranges were 16° at Newcastle, 17°.3 at Liverpool, 20° at Sunderland. The general mean was 25°.6.

The mean of the seven high day temperatures was highest at Blackheath, 72°.9, at Cambridge 72°.4, at Brighton 70°.3; and was lowest at Bolton 59°.4, at Newcastle 61°.3, at Sunderland 61°.8. The general mean was 66°.3.

The mean of the seven low night temperatures was highest at Blackheath 53°.5, at Brighton 53°.3, at Plymouth 53°.1; and was lowest at Bolton 46°.1, at Wolverhampton 47°.2, at Sunderland 48°.7. The general mean was 50°.8.

The mean daily range was greatest at Cambridge, 20°.9, at Blackheath 19°.4, at Wolverhampton 19°.2; and was least at Liverpool, 9°.8, at Newcastle 10°.8, at Preston 12°.9. The general mean was 15°.5.

The mean temperature was highest at Blackheath, 61°.1, at Brighton and Cambridge 60°, and was lowest at Bolton, 50°.8, at Sunderland 53°.3, at Newcastle 54°. The general mean was 56°.6.

*Rain.*—The largest falls were 0.89 inch at Bolton, 0.84 inch at Preston, 0.72 inch at Sunderland; the smallest falls were 0.01 inch at Nottingham, 0.05 inch at Wolverhampton, and 0.07 inch at Brighton. The general mean fall was 0.33 inch.

SCOTLAND: *Temperature.*—During the week ending July 18, the highest temperature was 69°.1, at Aberdeen; at Greenock the highest temperature was 61°.2. The general mean was 65°.9.

The lowest temperature in the week was 41°, at Glasgow; at Aberdeen the lowest temperature was 48°. The general mean was 44°.7.

The mean temperature was highest at Aberdeen, 57°.9; and lowest at Greenock, 53°.8. The general mean was 55°.4.

*Rain.*—The largest fall was 1.27 inch, at Greenock, and the smallest fall was 0.27 inch at Edinburgh. The general mean fall was 0.64 inch.

JAMES GLAISHER F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, July 20, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been fair generally over England, but showery at the west and north stations; a good deal of fog has prevailed over our south-western districts.

The *temperature* has been below its mean value everywhere. Over England the deficit has amounted to only 1° or 2°, but in Scotland it is 3° or 4°, and in Ireland it varies from 3° to 5°. The maxima (which exceeded 70° at the English stations only) were recorded on various dates, according to the locality of the station, and were, of course, much higher at the inland stations than on the coasts. The minima occurred as a rule on Tuesday (14th), and were very low in some cases, especially over the northern and central parts of Ireland, where they ranged from 34° to 39°.

The *rainfall* was from four to five-tenths of an inch less than the mean for the week at the English stations, while it was about its mean value in Scotland, slightly in excess over "Ireland, S." and "England, S.W.," and largely in excess over "Ireland, N." and "England, N.W." The number of rainy days varied from two in "England, S.," to five in "Scotland, N.," "Scotland, W.," and "England, N.W.," and to six in "Ireland, N."

*Bright sunshine* shows a decided decrease from the values recorded last week. In the south of Ireland only one-seventh of the possible duration was recorded, and in the northern parts of Scotland and Ireland, the quantities recorded show rather less than one-fifth of the possible duration, while over our Midland and Eastern Counties there was only one-fourth, and even in the Channel Islands less than half.

*Depressions observed.*—These were comparatively unimportant; and, until the 19th, were confined to the north and north-western parts of the kingdom. The distribution of pressure then became very complex, and some shallow disturbances passed across Ireland and England, producing little wind, but in some places much rain.

## Answers to Correspondents.

LEAF-MINER ON HOLLY: *H. W.* The work of Phytomyza ilicis. Pick off and sweep up the leaves, and

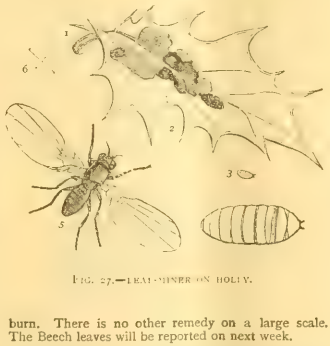


FIG. 27.—LEAF-MINER ON HOLLY.

burn. There is no other remedy on a large scale. The Beech leaves will be reported on next week.

ANTS IN SOIL NEAR A ROSE-BUSH: *A Fifteen Years' Subscriber.* Pour into the ant-hill a small portion of carbolic acid and water, or gas-tar, in small quantities. The ants might prove of service in keeping your Roses free from aphides.

CANADA: *A. H.* For one who is acquainted with gardening generally, and willing to work, the best places are those that have been longest settled, as Montreal, Quebec, and Hamilton, where employment might be found. Later, when better acquainted with the climate and methods of work, a start could be made in business.

CHAMPIGNON: *W. G. S.* The interpolation was misplaced. We have seen sheep eat Champignons.

FERN SEEDLING: *C. Kershaw.* The Fern sent is a very pretty form of Adiantum cuneatum, and one which seems to deserve a name and separate recognition. Mr. Moore proposes to send us a few descriptive notes of it under the name of Adiantum cuneatum elegans.

FERNS: *No name.* 1, Athyrium Filix-fœmina; 6, Blechnum boreale; 8, Lastrea thelypteris; 10, Aspidium aculeatum; 11, Polypodium vulgare. The other numbers we do not find.

JAMAICA FERNS—AN ERROR: *Filix* writes to correct a misstatement that occurs in the report of the Jamaica Botanic Garden cited by us some time since, and in which it is stated that the Jamaica Ferns are ten times as numerous as those of the United States. The approximate numbers, however, are 450 for Jamaica, and 150 for the United States.

LARGEST STRAWBERRY GROUNDS IN KENT: *T. H.* You had better ask Mr. Cannell, of Swanley, for information.

MELONS IN JAMAICA DYING OFF: *L. C. G.* The thin-skinned weakly constitutioned English varieties, which we cultivate most artificially, seldom succeed out-of-doors in any climate, the foliage falling a prey to diseases, and the fruit bursting before it is fully grown, from an excess of moisture. Cashmere, Cabool, Prescott, and the numerous kinds of Cantaloupe Melons, are the best for out-of-doors work in warm countries. English kinds can be made to succeed in low frames of glass without sides, in which they must be slightly shaded in the hottest part of the day, and the vines allowed to run at will beyond the limits of the frame. Under this way of growing them the watering is quite under the control of the gardener.

NAMES OF PLANTS: *J. H.* We cannot name from such miserable scraps.—*S. v. M.* Inula glandulosa.—*C. Y. M.* A Willow; probably a form of S. repens, but the specimen is insufficient.—*P. Z.* Rubus odoratus.—*E. U. Russell.* 1, Cupressus macrocarpa; 2, Thuia pisifera.—*J. Cocker & Sons.* 1, Celsia arcturus; 2, Inula Hookeri; 3, Thalictrum angustifolium; 4, T. majus.—*C. W. Dod.* Inula Hookeri.—*W. Scott.* 1, Centaurea macrocephala; 2, C. dealbata; 3, Cimicifuga racemosa; 4, Isotoma axillaris; —*H.* Centaurea; too scrappy to name, send better specimen.

PELARGONIUM BLOOM WITHERING: *A. H.* It would seem as if the fumigation had been too much for these and the Roses. But you did not say if the withering of the flowers took place before or after the smoking.

PICKLING GLOBE ARTICHOKES FOR WINTER USE: *G. W.* After shortening the stalks, place them in strong brine of the same strength as is used for meat. The vessel used should be of wood, and must be furnished with a lid that will slide up or down the interior. When the Artichokes are put into the pickle the lid is placed on them and weighted with a piece of stone to keep them under the surface of the water. Scum will arise from the Artichokes, which must be wiped off the lid, on which it lodges, with a clean cloth that should be kept for the purpose. Green French Beans, Runner Beans, Peas, and Cucumbers, can be just as readily kept for winter consumption in the same way. The chief points to observe are wiping away of the scum, and keeping them under the pickle. With this amount of attention the articles will keep good for several months.

PLANTS ATTACKED BY INSECTS: *J. B. M.* The buds of your neighbour's Conifers have been attacked by the caterpillars of a very pretty small moth—Tortrix (Retinia) Turionana, figured in the *Gardeners' Chronicle*, 1850. Pick off and burn the infested buds, which can easily be distinguished, although we fear the moths have already escaped. *I. O. W.*—*J. Fraser.* Your Vine leaves arrived in too dry a state to enable us accurately to determine the cause of the numerous blotches and galls upon them, which are most probably produced by the gall-mite (Phyllerium vitis), although the numerous filamentous matters within the galls have not the appearance, under a Zeuss microscope, of animal matter. *I. O. W.*

ROSE AND IRIS: *A. J.* We cannot undertake to name florists' varieties.

THREE-FLOWERED MARGUERITE: *G. W.* Such abnormal blooms are very common.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

COMMUNICATIONS RECEIVED:—G. T. D. (in engraver's hands).—J. Cocker & Sons.—W. Scott.—A. C.—J. S. B.—Professor Martens, Louvain (next week).—B. W.—J. M.—Jas. Veitch & Sons.—A. W. F. W. B.—C. W. (please send another specimen, the other has gone astray).—Nova Scotia.—J. M., Ontario (many thanks).—B. W. S.; *Gardeners' Magazine* Office, Ave Maria Lane, E.C.—E. V. B.—R. D.—C. W. S.—G. H. (no, thank you).—C. Joly (with many thanks).—Prof. Balfour.—M. Boissier.—F. S. & Co.—W. G. S.—N. E. Brown.—W. Iod.—H. E. G. Bunyard.

## Enquiries.

"*He that questioneth much shall learn much.*" BACON.

GARDENS.—Is anything known of the two gardens mentioned by Dr. Kaye in the following passage? "De Ilice, glandem fert, ut quercus, fœmina. Utriusque generis unam vidimus in Britannia, marem in horto parysino in ripa transthamesina, fœminama horto regio Westmonasterii." Johannes Caii Britanni de rariorum animalium et stirpium historia, 1570, p. 29. *Henry N. Ellacombe, Bitton Vicarage.*

VARIEGATED ORIENTAL PLANE.—*W. H. M.* wishes to know where this can be obtained. Please note it is the *Oriental* Plane that is asked for,

# Markets.

*COVENT GARDEN, July 23.*

VERY heavy supplies this week, and prices have been firm at a reduction. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Cherries, ½-sieve | 4 0– | 8 0 | Lemons, per case | 15 0– | 30 0 |
| Currants, red, ½-siv. | 4 0– | 5 0 | Melons, each | 2 0– | 3 0 |
| — black, ½-sieve | 4 6– | .. | Peaches, per doz. | 2 0– | 8 0 |
| Figs, per dozen | 2 0– | .. | Pine-apples, Eng. lb. | 2 0– | 3 0 |
| Gooseberries, ½-sieve | 2 0– | 3 | — St. Michael, each | 2 6– | 5 0 |
| Grapes, per lb. | 0 9– | 2 0 | Strawberries, per lb. | 0 3– | 0 9 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 3 0– | .. | Horse Radish, bun. | 3 0– | 4 0 |
| Asparagus, English, per bundle | 1 6– | 6 0 | Lettuces, Cab., doz. | 1 0– | .. |
| Beans, Eng., per lb. | 0 9– | .. | — English Cos, doz. | 1 6– | .. |
| Beet, per dozen | 1 0– | .. | Mint, green, bunch.. | 0 4– | .. |
| Cabbages, per dozen | 1 6– | 2 0 | Mushrooms, basket.. | 1 0– | 1 6 |
| Carrots, per bunch | 0 6– | .. | Onions, per bushel.. | 6 0– | .. |
| Cauliflowers, English, spring, per doz. | 2 0– | 4 0 | — Spring, per bun. | 0 6– | .. |
| Celery, per bundle | 1 6– | 2 6 | Parsley, per bunch.. | 0 4– | .. |
| Cucumbers, each | 0 6– | 1 0 | Peas, per quart | 1 0– | 1 6 |
| Endive, per dozen | 2 0– | .. | Radishes, per dozen | 1 0– | 2 0 |
| Garlic, per lb. | 0 6– | .. | Small salading, per punnet | 0 4– | .. |
| Herbs, per bunch | 0 2– | 0 4 | Spinach, per bushel | 4 0– | .. |
| | | | Tomatos, per lb. | 1 0– | .. |
| | | | Turnips, new, bunch | 0 6– | .. |

POTATOS.—English, new, 8*s.* to 9*s.*; Jerseys, 8*s.* to 9*s.* per cwt.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0– | 18 0 | Fuchsias, per dozen | 4 0– | 9 0 |
| Arbor-vitæ (golden), per dozen | 6 0– | 18 0 | Hydrangeas, per dozen | 9 0– | 18 0 |
| — (common), dozen | 6 0– | 12 0 | Lilium auratum, per dozen | 18 0– | 36 0 |
| Begonias, per dozen | 4 0– | 12 0 | — longifolium, doz. | 9 0– | 18 0 |
| Bouvardia, dozen | 9 0– | 18 0 | Lobilia, per doz. | 3 0– | 6 0 |
| Calceolarias, doz. | 4 0– | 6 0 | Marguerite Daisy, per dozen | 8 0– | 15 0 |
| Carnations, 12 pot | 6 0– | 12 0 | Musk, per dozen | 2 0– | 4 0 |
| Cyperus, per dozen | 4 0– | 12 0 | Myrtles, per dozen | 6 0– | 12 0 |
| Dracæna terminalis, per dozen | 30 0– | 60 0 | Palms in variety, each | 2 6– | 21 0 |
| — viridis, per doz. | 12 0– | 24 0 | Pelargoniums, per dozen | 6 0– | 18 0 |
| Euonym, in var., doz. | 6 0– | 18 0 | — scarlet, per dozen | 3 0– | 9 0 |
| Evergreens, in var., per dozen | 6 0– | 24 0 | Rhodanthe, per doz. | 6 0– | 8 0 |
| Ficus elastica, each | 1 6– | 7 0 | Spiræa, per dozen | 9 0– | 18 0 |
| Ferns, in var., dozen | 4 0– | 18 0 | | | |
| Foliage Plants, various, each | 2 0– | 10 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0– | 4 0 | Myosotis, 12 bun. | 2 0– | 4 0 |
| Arum Lilies, 12 blms. | 3 0– | 6 0 | Pelargoniums, per 12 trusses | 0 6– | 1 0 |
| Bouvardias, per bun. | 0 9– | 1 0 | — scarlet, 12 trusses | 0 4– | 0 6 |
| Carnations, 12 bun. | 2 0– | 4 0 | Picotees, 12 bun. | 2 0– | 4 0 |
| — 12 blooms | 1 0– | 2 0 | Pinks, var., 12 bun. | 1 0– | 4 0 |
| Cornflower, 12 bun. | 2 0– | 4 0 | Primula, double, bun. | 0 9– | 1 0 |
| Eschscholtzia, 12 bun | 2 0– | 4 0 | Rhodanthe, 12 bun. | 6 0– | 9 0 |
| Eucharis, per dozen | 3 0– | 6 0 | Roses (indoor), doz. | 1 0– | 3 0 |
| Gardenias, 12 blooms | 1 6– | 4 0 | — coloured, dozen | 2 0– | 4 0 |
| Lapageria, white, 12 blooms | 2 0– | 3 0 | — per doz. bunches | 2 0– | 6 0 |
| — red, 12 blooms | 1 0– | 2 0 | — Mrs. Laing, 12 bun | 6 0– | 9 0 |
| Lilium longiflorum, 12 blooms | 2 6– | 5 0 | Spiræa, 12 bunches | 6 0– | 9 0 |
| — candidum, 12 bunches | 6 0– | 10 0 | Stephanotis, 12 spr. | 2 0– | 4 0 |
| — 12 blooms | 0 6– | 1 0 | Sweet Peas, 12 bun. | 2 0– | 4 0 |
| Marguerites, 12 bun. | 3 0– | 6 0 | Sweet Sultan, per 12 bunches | 4 0– | 6 0 |
| Mignonette, 12 bun. | 1 6– | 3 0 | Tropæolum, 12 bun. | 1 0– | 1 6 |

## SEEDS.

LONDON: *July* 22.—There was but little business transacted on the Seed Market to-day. New English Trifolium is now coming to hand, and opens at moderate prices—the quality also is very satisfactory. French Trifolium continues too dear for English buyers. New Rape seed is obtainable at rather low rates. There is nothing doing in Clover seeds. For sowing white Mustard seed there is an improved sale. Feeding Linseed is firmer. The bird seed trade is dull and neglected. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## HAY.

Tuesday's Whitechapel Market report states that trade was very quiet, with small supplies.—Quotations:—Clover, prime, 80*s.* to 105*s.*; prime second cut, 85*s.* to 107*s.*; inferior, 60*s.* to 75*s.*; hay, prime, 70*s.* to 98*s.*; inferior, 20*s.* to 60*s.*; and straw, 28*s.* to 38*s.* per load.—On Thursday there was a fair supply on sale. The trade was dull, especially for Clover, but prices were without alteration.

## POTATOS.

The Borough and Spitalfields Markets reports state that supplies come to hand moderately, and the trade is slow, but prices upheld. Quotations:—Essex Shaws, 120*s.* to 130*s.*; Early Roses, 90*s.* to 100*s.*; Jersey kidneys, 150*s.* to 160*s.*; ditto rounds, 100*s.* to 120*s.*; Cherbourg rounds, 100*s.* to 120*s.* per ton.—The imports into London last week consisted of 2371 boxes from Cherbourg, and 2157 boxes 478 cases from Barfleur.

## COALS.

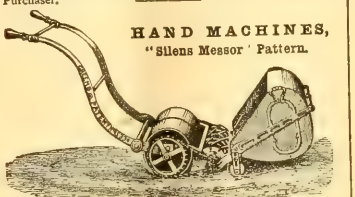
The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Holywell West Hartley, 14*s.* 6*d.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 15*s.* 6*d.*; Hetton Lyons, 13*s.* 6*d.*; Lambton, 15*s.* 6*d.*; Wear, 14*s.*; East Hartlepool, 14*s.* 6*d.*; Tees, 15*s.* 6*d.*


*Appointed by Royal Warrant Makers to*
**Her Majesty the Queen and His Royal Highness the Prince of Wales.**

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**"Silens Messor" and "Multum in Parvo"**
# LAWN MOWERS

Have been proved to be the best, and they have carried off every Prize in all cases of competition.

Every Lawn Mower is guaranteed to give entire satisfaction, otherwise they may be returned AT ONCE, free of cost to the Purchaser.



**HAND MACHINES,**
**"Silens Messor" Pattern.**

To cut 8 in. wide .. £2 10 0 | To cut 16 in. wide .. £6 10 0
To cut 10 in. wide .. 3 10 0 | To cut 18 in. wide .. 7 10 0
To cut 12 in. wide .. 4 10 0 | To cut 20 in. wide .. 8 0 0
To cut 14 in. wide .. 5 10 0 | To cut 22 in. wide .. 8 10 0
To cut 24 in. wide .. £9 0 0

For Donkey, Pony and Horse Machines, see Price List.



**GREEN'S PATENT**
**"MULTUM IN PARVO" MOWER.**
Suitable for Small Grass Plats.
A most useful Machine.
**Prices**, with Grass Box:
£1 5 0
1 13 0
2 0 0

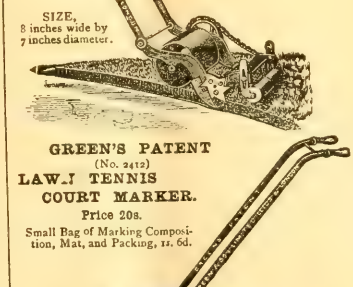
**Prices,**
**Without Grass Box**
To cut 6 in. .. £1 1
To cut 7 in. .. 1 8
To cut 8 in. .. 1 15

It is simple in construction, easily adjusted, is well adapted for mowing small plats, cutting borders, verges, round flower beds, the edges of walks, &c. It is a most handy, serviceable machine, and very easy to work.



**GREEN'S PATENT**
**GRASS EDGE CLIPPER.**
With Chain and Wheel Motion.
A most useful Machine.
**Price, £1 16s.**
Packing Case, 2*s.*

SIZE,
8 inches wide by 7 inches diameter.



**GREEN'S PATENT**
(No. 2412)
**LAWN TENNIS COURT MARKER.**
**Price 20s.**
Small Bag of Marking Composition, Mat, and Packing, 1*s.* 6*d.*

**Price List free on application.**

The above Machines can be had of all respectable Ironmongers and Seedsmen in the United Kingdom, or direct from the Manufacturers,

## THOMAS GREEN & SON
(LIMITED),
**SMITHFIELD IRONWORKS, LEEDS; and SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.**
Carriage paid to all the Principal Railway Stations in the United Kingdom.

# CARSON'S PAINT.
Patronised by
*HER MAJESTY,*
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
15,000 OF THE NOBILITY, GENTRY, AND CLERGY.
Is extensively used for all kinds of
**OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames.**
CAN BE LAID ON BY UNSKILLED LABOUR.
1 *Cwt., and Oil Mixture, Free to all Stations.*
Non-Poisonous Paints for Inside Work, Conservatories, &c.
*Prices, Patterns, and Testimonials, Post-free.*

**CARSON'S,**
LA BELLE SAUVAGE YARD, LUDGATE HILL, LONDON, E.C.;
21 and 22, BACHELOR'S WALK, DUBLIN.
*Discount for Cash.*

## IRON HURDLES, GATES, TREE GUARDS,
**Iron and Wire Espalier, &c.**



*CATALOGUE Free. Please name this paper.*

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VICTORIA WORKS, WOLVERHAMPTON;
And 139 and 141, Cannon Street, London, E.C.

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## S. A. SANDS
(Successor to J. W. HAYTHORN),
**Manufacturer of Hexagon and Chiswick GARDEN NETS.**
Warranted to Protect Bloom from Frost, Winds, Hail, and Fruit from Birds, Wasps, &c.
**Pattern and Prices Free per Post.**
**Address—S. A. SANDS,**
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**TANNED GARDEN NETTING.**
1 yard wide .. ¾*d.* per yard | 3 yards wide .. 2¼*d.* per yard.
2 yards wide .. 1½*d.* per yard | 4 yards wide .. 3*d.* per yard.
500 yards and upwards delivered free to any part.

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SCRIM, TIFFANY and COTTON NETTING.
A set of samples, with prices, post-free.

RUSSIA MATS, RAFFIA, TOBACCO PAPER, PEAT, SILVER SAND, COCOA FIBRE REFUSE, GARDEN TOOLS, &c., at the lowest possible prices.

*Descriptive CATALOGUE post-free on application.*

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**149, Commercial Street, Shoreditch, London, E.**

TIFFANY and SCRIM, for Protecting Fruit Trees and Greenhouse Shading, from 2*d.* per yard. TANNED NETTING, in all widths, at wholesale prices. RUSSIAN MATS of every description. RAFFIA for tying. TOBACCO PAPER and CLOTH, and all Horticultural Sundries. Price LIST on application.
J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

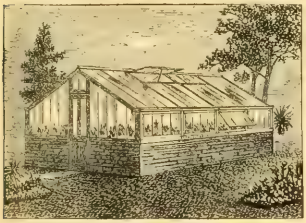
PROTECT YOUR FRUIT from the BIRDS, when you can get 18 square yards of BEST NETTING or 24 yards of SECOND QUALITY NETTING for 1*s.* This Net has been through a process to preserve it from the sea, thereby making it better than new Net, but is shrunk too much for my fishing purpose. Supplied any width, carriage paid on all Orders over 5*s.* Address,
JAMES GASSON, Cinque Port Street, Rye, Sussex.

ORCHID BASKETS, RAFTS, BOATS, &c., including Copper Pins and Wires, 3 inches, 4*s.* 6*d.*; 3½ inches, 5*s.*; 4 inches, 5*s.* 6*d.*; 4½ inches, 6*s.* 6*d.*; 5 inches, 7*s.* 6*d.*; 6 inches, 8*s.* 6*d.*; 7 inches, 10*s.* 6*d.*; 8 inches, 12*s.* 6*d.*; 9 inches, 14*s.* 6*d.*; 10 inches, 17*s.* 6*d.*; 11 inches, 21*s.* 6*d.*; 12 inches, 24*s.* 6*d.* Rafts 1*d.*, Boats 1½*d.*; Cylinders 2*d.* per inch run. Samples of twelve Baskets, Raft, Boat, and Cylinder, 14*s.* 6*d.*
J. E. BONNY, 88, Downs Park Road, Hackney, London, E., Grower of the leading Varieties of Orchids.

**COVERED SHEDS FOR CATTLE.**

## THE GLOUCESTER WAGON CO.
(LIMITED)
Have attached to their extensive works a large Joinery Department with the latest and most improved Machinery, for the Manufacture of
**Covered Sheds or Yards for Cattle, Conservatories, Greenhouses, Garden Seats, &c,**
*at extremely moderate prices.*
Full particulars may be had on application to
**ALFRED SLATER, General Manager, GLOUCESTER.**

# DEANE & CO.'S
## SPAN-ROOF GREENHOUSE.



No. 4.—A plain but substantial Greenhouse, Planthouse, or Vinery of the best construction; a really useful house at a very moderate price.

ESTIMATES.—The prices given are for ERECTING COMPLETE, by our own men, within 15 miles of London Bridge, including building dwarf wall 2 feet 6 inches high in 9-inch brickwork all round, and erecting, painting, and glazing greenhouse in the best style.

HEATING APPARATUS.—This consists of a Loughborough Hot-water Apparatus, complete with syphon, flue-pipe, and a double row of 4 inch pipe along one side of the houses under 12 feet wide one side and one end of houses 12 feet to 16 feet wide, and both sides and one end of houses above this width, all fixed, tested, painted, and left in proper working order.

| Length. | Width. | Price of House. | Heating Apparatus. |
|---|---|---|---|
| 12 ft. .. .. | 8 ft. .. .. | £20 0 .. .. | £5 15 |
| 15 ft. .. .. | 9 ft. .. .. | £30 0 .. .. | £6 5 |
| 20 ft. .. .. | 12 ft. .. .. | £42 10 .. .. | £8 15 |
| 45 ft. .. .. | 15 ft. .. .. | £58 0 .. .. | £10 15 |
| 30 ft. .. .. | 15 ft. 0 .. .. | £71 0 .. .. | £12 5 |
| 35 ft. .. .. | 16 ft. .. .. | £79 10 .. .. | £13 5 |
| 4 ft. .. .. | 17 ft. 0 .. .. | £111 0 .. .. | £21 0 |
| 50 ft. .. .. | 18 ft. .. .. | £146 10 .. .. | £26 10 |
| 60 ft .. .. | 20 ft. .. .. | £195 0 .. .. | £29 0 |

# LEAN-TO GREENHOUSE,

As above, but with Hot-water Pipes from end to end only, in all sizes.

| Length. | Width. | Price of House. | Heating Apparatus. |
|---|---|---|---|
| 10 ft. .. .. | 6 ft. .. .. | £19 10 .. .. | £5 5 |
| 12 ft. .. .. | 8 ft. .. .. | £23 10 .. .. | £5 15 |
| 25 ft. .. .. | 10 ft. .. .. | £29 10 .. .. | £6 5 |
| 20 ft. .. .. | 12 ft. .. .. | £40 0 .. .. | £6 15 |
| 23 ft. .. .. | 12 ft. .. .. | £53 0 .. .. | £7 10 |
| 30 ft. .. .. | 13 ft. .. .. | £66 0 .. .. | £8 10 |
| 35 ft. .. .. | 14 ft. .. .. | £83 0 .. .. | £10 10 |
| 40 ft. .. .. | 15 ft. .. .. | £102 .. .. | £11 5 |

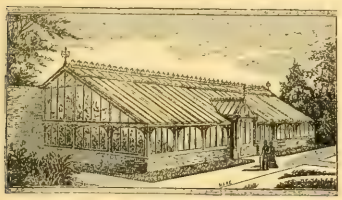
PROPORTIONATE PRICES FOR OTHER SIZES, AND ERECTED IN ANY PART OF THE COUNTRY.

SURVEYS MADE IN ANY PART OF THE COUNTRY, FREE OF CHARGE. Ladies and Gentlemen waited upon at their Residences, and DESIGNS and ESTIMATES for Conservatories, Greenhouses, and Horticultural Buildings of every description PREPARED AND FURNISHED FREE.

ILLUSTRATED SHEETS of Conservatories, Greenhouses, &c., with Prices for Erecting and Heating, FREE ON APPLICATION.

# DEANE & CO.,
Horticultural Builders and Hot-water Engineers,
46, King William Street, E.C. } LONDON BRIDGE.

# RICHARDSON'S



# HORTICULTURAL BUILDINGS

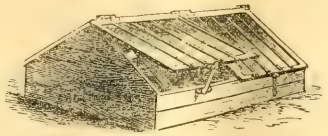
W. RICHARDSON & CO.,

Fixed in any part of the Kingdom with Hot-water Apparatus complete.

Numerous Medals. CATALOGUE free.

NORTH OF ENGLAND HORTICULTURAL WORKS,
DARLINGTON.

GLASSHOUSES & HEATING.
B. W. WARHURST
PRICES & PLANS FREE.
31a, BEAUFORT STREET, CHELSEA, S.W.



## PORTABLE PLANT FRAMES.

The above are without exception the most useful kind of Frame for Plant Growing, and every one with a garden should possess one. The sashes turn right over one on the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

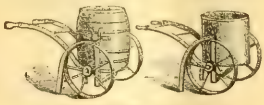
| | | | |
|---|---|---|---|
| 6 feet long, 4 feet wide, packing cases free | £2 | 15 | 0 |
| 12 feet long, 4 feet wide, ,, ,, ,, | 4 | 15 | 0 |
| 6 feet long, 5 feet wide, ,, ,, ,, | 3 | 15 | 0 |
| 12 feet long, 5 feet wide, ,, ,, ,, | 6 | 10 | 0 |

The glass is nailed and puttied in.

R. HALLIDAY & CO.,
Hothouse Builders and Engineers,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

# R. HOLLIDAY,
HORTICULTURAL IRON and WIRE WORKER,
GARDEN IMPLEMENT MAKER.

SWING WATER BARROWS.



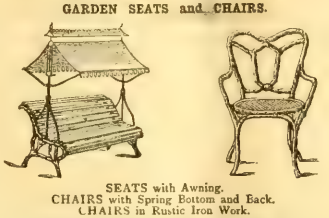
GARDEN ENGINES and ROLLERS.



GARDEN PLANT TRUCK and WHEELBARROW.



GARDEN SEATS and CHAIRS.

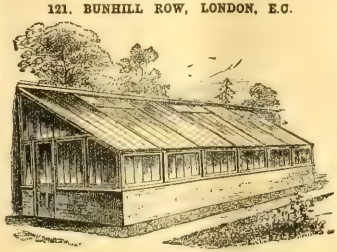


SEATS with Awning.
CHAIRS with Spring Bottom and Back.
CHAIRS in Rustic Iron Work.
A GREAT VARIETY ON SHOW TO SELECT FROM.

For GARDEN and CONSERVATORY WIRE WORK, see Illustrated Catalogue.

R. HOLLIDAY,
*HORTICULTURAL IRON and WIRE WORKER,*
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W. H. LASCELLES & CO.,
HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.

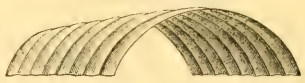


W. H. LASCELLES AND CO. will give estimates for every description of HORTICULTURAL WORK, free of charge, and send competent assistants when necessary.

LASCELLES' NEW ROCKWORK material in various colours. Samples can be seen and prices obtained at 121, Bunhill Row, and 35, Poultry, Cheapside, E.C.

Illustrated Lists of Wooden Buildings, Greenhouses, and Conservatories, and Concrete Slabs for walls, paths, and stages, sent post-free on application.

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# GALVANISED CORRUGATED IRON ROOFING SHEETS.
(*B B CANNON BRAND*).
GUARANTEED QUALITY.



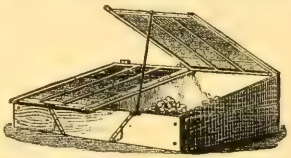
At much Reduced Prices per sheet, per cwt., per ton.

Extra Superior JET BLACK VARNISH.
Not to be Equalled.

PRICES.—In Casks of 36 and 18 gallons, 1s. 6d. per gallon, carriage free to any railway station. NO CHARGE FOR CASKS. May be applied by any one, drying a beautifully smooth and hard jet black very quickly.

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# BOULTON & PAUL, NORWICH.
SMALL, HANDY, LEAN-TO FRAMES.



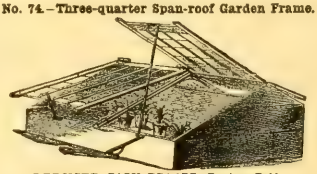
TWO-LIGHT FRAMES, 6 feet by 4 feet, painted three coats, and glazed with 21-oz. English glass. Carriage paid, price £2 2s.

If with hinges, set-opes and prop, as shown, price £2 10s. 6d. Packing 3s., allowed in full if returned.

THREE-LIGHT FRAME, largest size made, 9 feet by 4 feet, price £3.

If with hinges, set-opes, and prop, as shown, price £3 10s. Packing 4s., allowed in full if returned.

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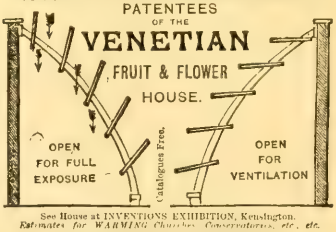


REDUCED CASH PRICES, Carriage Paid.

| Size. | Length. | Width. | Price. | Packing Case. |
|---|---|---|---|---|
| No. 2 .. | 8 feet .. | 6 feet .. | £4 12 6 .. | 5s. |
| No. 3 .. | 12 feet .. | 6 feet .. | 6 5 0 .. | 6s. |
| No. 4 .. | 16 feet .. | 6 feet .. | 8 0 0 .. | 7s. |

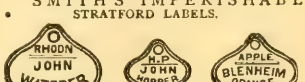
Height in front 11 inches, back 32 inches, centre 32 inches.
Lights made to turn over. Set-opes for ventilating.
Carriage paid to any Railway Station in England and Wales; also to Edinburgh, Glasgow, Dublin and Belfast.
*Price Lists post-free. Illustrated Catalogues 12 stamps.*

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HORTICULTURAL BUILDERS & HOT-WATER ENGINEERS.
PATENTEES OF THE
VENETIAN FRUIT & FLOWER HOUSE.




See House at INVENTIONS EXHIBITION, Kensington.
*Estimates for WARMING Churches, Conservatories, etc., etc.*

Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.




The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.

The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

Samples and Price Lists free.

J. SMITH, The Royal Label Factory, Stratford-on-Avon.

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| 7 „ ... | 0 | 4 | 6 | 18 „ ... | 0 | 10 | 0 |
| 8 „ ... | 0 | 5 | 0 | 19 „ ... | 0 | 10 | 6 |
| 9 „ ... | 0 | 5 | 6 | 20 „ ... | 0 | 11 | 0 |
| 10 „ ... | 0 | 6 | 0 | 21 „ ... | 0 | 11 | 6 |
| 11 „ ... | 0 | 6 | 6 | 22 „ ... | 0 | 12 | 0 |
| 12 „ ... | 0 | 7 | 0 | 23 „ ... | 0 | 12 | 6 |
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**GARDENERS, and OTHERS, WANTING SITUATIONS.**

26 words 1s. 6d., and 6d. for every additional line (about 9 words) or part of a line.

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*Advertisements for the current week* MUST *reach the Office by Thursday noon*

**All Subscriptions Payable in Advance.**

THE UNITED KINGDOM: 12 Months, £1 3s. 10d.; 6 Months 11s. 11d.; 3 Months, 6s

FOREIGN (excepting India and China); including Postage, £1 6s. for 12 Months; India and China, £1 8s. 2d.

Post-office Orders to be made payable at DRURY LANE, W.C., to W. RICHARDS.

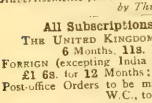
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**Notice to Orchid Growers, &c.**

TEAK-WOOD, for Orchid Baskets; Teak-wood TUBS for Plants; Bamboo CANES, for Staking. P. B. HARKIN, Importer, Dutton Street, Liverpool.

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## WOOD & MILTON'S PATENT.



**The Future Boiler for Nurserymen and Gardeners,**

Heating any amount up to 15 000 ft.

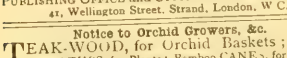
Advantages over all other inventions. Price List free on application.

Please write your addresses plain.

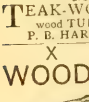
**T. WOOD, Hot-water Engineer,**

RUDGEWAY HOUSE, EASTVILLE, BRISTOL.

**Rosher's Garden Edging Tiles.**



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense,





as do "grown" Edgings, consequently being much cheaper. GARDEN VASES, FOUNTAINS, &c, in Artificial Stone, very durable and of superior finish, and in great variety of design.

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Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES: also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

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WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

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SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

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KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER AND CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves. A liberal Discount to the Trade.

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Samples and Price Lists post-free.

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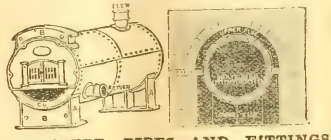
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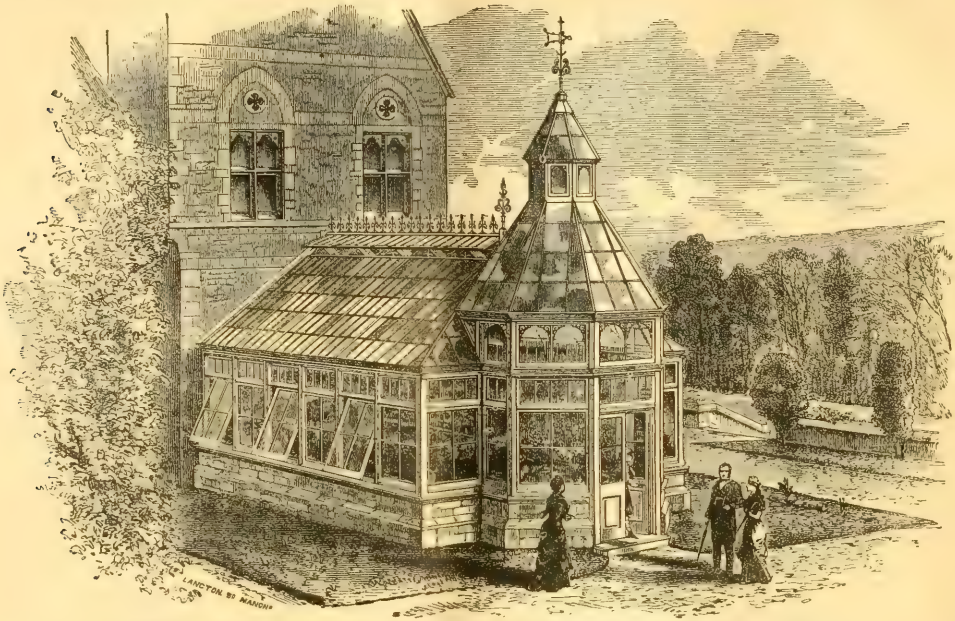
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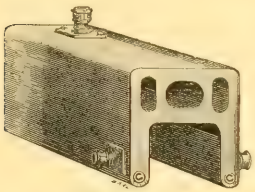
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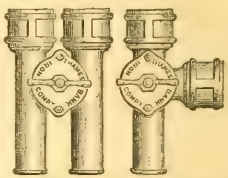
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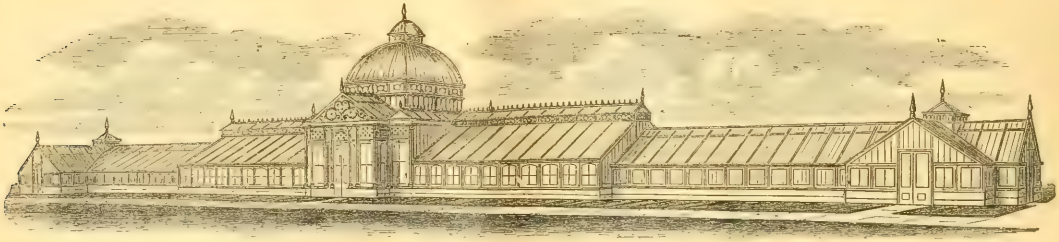
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*NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should be made payable at DRURY LANE.*

SUTTON and CHEAM HORTICULTURAL SOCIETY.—The TWENTY-SECOND ANNUAL FLOWER SHOW, and County Show of the SURREY BEE-KEEPERS' ASSOCIATION, will be held (by the kind permission of H. Lindsay Antrobus, Esq.) in the Grounds of Lower Cheam House, on WEDNESDAY, Aug. 12. Mrs. Cubitt will distribute the Prizes at 6 P.M. The Bands of the W Division Metropolitan Police and S.M.D. Schools are engaged for the occasion. The Grounds will be opened at 2 o'Clock for Subscribers on presenting their Tickets, and to the Public on payment of 2s. 6d. Admission after 4, 1s.; after 6, 6d. Children Half-price. Admission to Bee Tents: Members, Free; Non-Members, 6d. each. For further particulars, apply to the Officers of the Society, or Members of the Committee, or to Mr. W. R. CHURCH, Sec. For information respecting the Bee Exhibition to the Hon. Sec., Mr. WATERER, the Common.

WILTS HORTICULTURAL SOCIETY SHOW, Salisbury, AUG. 20. Division A Open. 12 STOVE and GREENHOUSE FLOWERING PLANTS, 1st Prize, £15; 12 VARIEGATED and FINE-FOLIAGE STOVE and GREENHOUSE PLANTS, 1st Prize, £13. Schedules on application to The Nurseries, Salisbury. W. H. WILLIAMS, Hon. Sec.

HANDSWORTH, SHEFFIELD, HORTICULTURAL SOCIETY. The ANNUAL EXHIBITION will be held at Handsworth, on WEDNESDAY, August 26 Class 4 (open to all England). £20 given for a display of STOVE PLANTS, £14 for 2d, and £6 for 3d. £5 for a COLLECTION of DESSERT FRUITS, and other Prizes. Schedules may be had on application to GEO. LUNN, Sec.

1886. GRAND FLORAL FÊTE, YORK, JUNE 23, 24, and 25 Schedules will be ready early in January next. JNO. WILSON, Secretary.

GARDENIAS.—A quantity of good healthy Plants, in 10-inch pots, 42s. per dozen. J. J. AND W. OAKEY, Pleasure Gardens, Preston.

FOR SALE, very cheap, Two magnificent TREE FERNS, height 11½ feet and 7 feet. For particulars apply GARDENER, Pontamman, Ammanford, R. S. O., South Wales.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application. FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

TO THE TRADE.—CARTER'S WHOLESALE CATALOGUE of BULBS, PLANTS, and HORTICULTURAL SUNDRIES has now been posted to their customers. If not received, another copy will be sent on application to JAMES CARTER, DUNNETT AND BEALE, 237 and 238, High Holborn, London, W.C.

ROMAN HYACINTHS FOR MARKET GROWERS.—Purchasers should call and inspect our samples before buying elsewhere.—JAMES CARTER, DUNNETT AND BEALE, 237 and 238, High Holborn, London, W.C.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s. BARR AND SON, King Street, Covent Garden, W.C.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and for his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same protection and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his free on demand.

PRIMULAS, CINERARIAS, PRIMULAS. Fine plants, ready for single pots, of the same well-coloured and large-flowered strains we have distributed for fourteen years, 6s. 6d. per doz., 100 per 100, 22s. 6d. for 250. WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, and 12, Market Street, Manchester.

Now in Full Bloom.

BEGONIAS.—Gold Medal Prize Plants, presenting an unrivalled floral display. Visitors are cordially invited. Frequent trains from the City and from the West End to Catford and Forest Hill Stations. LAING AND CO., Nurseries, Forest Hill, S.E.

Now Ready.

TEA and NOISETTE ROSES, in pots, of best sorts only, in great quantity, and of best possible quality. Priced LIST gratis. A sample dozen carefully packed for travelling, will be put on Railway on receipt of 13s. 6d. EWING AND CO., Sea View Nurseries, Havant, Hants (late of Eaton, near Norwich).

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

BULBS TO BE SOLD at Low Prices:— Double White NARCISSUS, Pheasant's eye NARCISSUS, and DAFFODILS. A large assortment of these superior Bulbs are offered to the Trade for the Season 1885. Apply to W. A. BARKER, East Sheen, Surrey.

NEW STRAWBERRIES, "LAXTON'S KING of the EARLIES," and "THE CAPTAIN." Orders for these remarkable New Strawberries, which are again being largely taken up by Market and Private Growers, should be sent at once, and will be executed in strict rotation, as the continued drought will materially limit the supply. Particulars with prices from T. LAXTON, Seed and Novelty Grower, Bedford.

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WANTED, good GERANIUM CUTTINGS of Henry Jacoby, Master Christine, Vesuvius, Gold and Silver Tricolors, and other choice Bedders. Send samples and price per 1000 to DANIELS BROS., Town Close Nurseries, Norwich.

WANTED, ARTICLES on GARDENING, from experienced Contributors acquainted with Markets.—Apply to 1781, care of LOUIS COLLINS, Esq., Advertisers Agent, 4, Wine Office Court, Fleet Street, London, E.C.

EUCHARIS AMAZONICA FLOWERS.—Price on application. TURNER BROS, Nurserymen and Florists, Allerton, Liverpool.

PALMS, specially Hardy, grown for cool Greenhouses and Dwelling-houses.—Latania borbonica and Seaforthia elegans, splendidly foliaged, 20 inches high, 12s. per dozen; sample plants, 2s. 3d.; same kinds, 12 inches high, 25s. per 100; sample 1s for 2s. All packages and parcels post free. Postal orders to GARDENER, Holly Lodge, Stamford Hill, N.

To the Trade.

SEAFORTHIA ELEGANS.—Seed just arrived in fine condition Write for lowest Trade price and sample to H. DAMMANN, Jun., Breslau, Germany.

ROMAN HYACINTHS, for Early Forcing. The Bulbs of these being unusually fine this season, early Orders are respectfully solicited. Price, per 100, 13s.; per dozen, 2s. Delivered entirely free in London and other ports. See Catalogue. The CATALOGUE of our immense Collections of New, Rare, and Fine Bulbs and Plants, for 1885 (84 pages, in English), is now ready, and will as usual be sent Post-free on application to ourselves, or our General Agents for Great Britain, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C. ANT. ROOZEN AND SON, Overveen, near Haarlem, Holland.

To Nurserymen, Seedsmen, and Florists.

DUTCH BULBS—Season 1885. WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate the same quality and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

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WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application. It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad. WATKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street, Strand, W.C.

East Lothian Intermediate Stocks.

THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., & 5s. each colour. Price to the Trade on application. By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

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CABBAGE.—CARTER'S HEARTWELL.—Pronounced to be the finest Early Cabbage in cultivation. Very distinct. The heads are extremely firm, weighing from 4 to 6 lb. In sealed packets only. Per packet, 1s. and 6d.; per ounce, 2s. post-free.

CABBAGE.—CARTER'S MAMMOTH BEEFHEART.—The best Main-crop Garden Cabbage in cultivation; very large firm heads, of exquisite flavour, very few outside leaves, and does not readily run. The finest summer Cabbage known. In sealed packets. Per packet, 1s. and 6d.; per ounce, 1s. 6d., post-free

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Strawberries for Present Planting.

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LOVEL'S STRAWBERRY RUNNERS. Strong, healthy, and well-rooted. Sample of Plants, 3d. Price LIST free. W. LOVEL AND SON. Strawberry Growers, Driffield.

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Seeds for Present Sowing.

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## SALES BY AUCTION.

**Dutch Bulbs.—Special Trade Sales.**

MESSRS. PROTHEROE and MORRIS beg to announce that they have now FIXED THEIR SALES OF DUTCH FLOWER ROOTS for the ensuing season. The first AUCTION will take place on MONDAY, August 17. This and the three following sales will consist of lots, specially to suit the Trade and other extensive Buyers, and arrangements have been made for the supply of roots of the best quality

Catalogues will be sent regularly on application. Central Auction Rooms and Estate Offices, 67 and 68, Cheapside, E.C.

**Lynton House.—Clapham Common.**

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises as above, on WEDNESDAY, August 19, at 1 o'Clock precisely, the whole of the Choice STOVE and GREENHOUSE PLANTS, FERNS and PALMS, GARDEN UTENSILS, SUMMER HOUSE, &c.

On view the day prior to Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

**Lælia harpophylla.**—(Sale No. 6944.)

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C.; on THURSDAY NEXT, August 6, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, a very grand importation of CATTLEYA SUPERBA SPLENDENS, the dark flowered Rio Negro variety, in splendid order; also many large and specially fine masses of CATTLEYA ELDORADO, with fine leaves, and in specially grand condition; PAPHINIA CRISTATA GRANDIS and SANDERIANA; a blue flowered variety of LÆLIA PURPURATA, many Mexican and other ORCHIDS.

On view the morning of Sale, and Catalogues had.

**Phalænopsis Schilleriana, &c.**

MR. J. C. STEVENS will include in his SALE on THURSDAY NEXT, August 6, a case of PHALÆNOPSIS as above, just received direct, in fine condition.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

**South Lodge, Southgate, N.**

South Lodge is a mile and a half from Enfield Station on the Great Northern Railway.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on TUESDAY, August 11, at half-past 12 o'Clock precisely, a SMALL COLLECTION of ORCHIDS formed by the late J. S. Law, Esq., including Cattleya guttata Leopoldi, C. speciosissima, C. Skinneri, Zygopetalum Mackayi, nice plants of Epidendrum prismatocarpum, and Cypripedium Sedeni, Dendrobiums, Calanthes, &c.; also STOVE and GREENHOUSE PLANTS, comprising a fine specimen Platycerium grande, several large Eucharis amazonica and candida, Ferns of sorts, including Davallias, Todea superba, &c.; a fine specimen Phormium tenax Veitchii; a few choice tuberous-rooted BEGONIAS, CROTONS, and other FOLIAGE PLANTS, &c.

May be viewed the day prior and morning of Sale, and Catalogues had on the Premises; and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

**Special Sale of Orchids in Flower.**

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY, August 12, and he will be glad if gentlemen desirous of entering plants for this Sale will please send particulars of same not later than Thursday, August 6.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. T. THEOBALD AND CO., 419, California Street, San Francisco, California.

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TO BE SOLD, a MARKET NURSERY, within 7 miles of Covent Garden, and close to Railway Station, where trains run every twenty minutes to Charing Cross. Nursery consists of nearly 4 acres of land, partly walled in, and 440 feet run of Span-roofed Greenhouses, all well Heated and Stocked with Plants for growing Choice Cut Flowers. A good supply of Water. Nearly new Ten-Roomed Dwelling-House. Held on Lease, nearly seventy-three years unexpired, at the very low rental of £35 per annum. Titles redeemed. Retiring from business on account of ill health.

For full particulars apply by letter to G. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**To Nurserymen and Others**

FOR SALE, or TO BE LET, an Old-established FREEHOLD NURSERY, on high road, close to a city. Noted for Roses and Clematises. Nearly 12 acres, 7 acres covered with Fruit Trees, and Fruiting Bushes. Convenient Glasshouses.

Apply to
Mr. G. E. KENNETT, Solicitor, Norwich.

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2 miles from, and 1 mile from a Railway Station on Main Line.

TO LET, with possession at Michaelmas next, a productive MARKET GARDEN and ORCHARD of about 5 Acres, on which are four long Glass-houses heated with Hot-water Apparatus on the newest principle. Also a comfortable Dwelling-house, Stables, Barns, Cowhouses, Piggeries, and other Outbuildings. Excellent water supply. A good business now being caried on.

Apply to CLOWES AND NASH, Auctioneers and Estate Agents, Bank Chambers, Norwich.

**Fifty Nurseries, Market Gardens, Florist and Seed** BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

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TO BE TRADED ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20s. per 100, £9 per 1000.

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ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40s. and 50s. per 100.

The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston Liverpool.

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ALOE INSIGNIS.—A very beautiful and highly ornamental Aloe, raised from A. drepanophylla fertilised by A. echinata. Flowers remarkable and beautiful; requires ordinary greenhouse culture. Described and figured in this volume of the *Gardeners' Chronicle*, p. 40, f. 41. Orders received will be sent out later in the season; every one should possess this plant. Price 3 Guineas.

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Also a large Collection of SUCCULENT PLANTS for sale.

THOMAS COOPER, Exotic Nursery, Brighton Road, Redhill, Surrey.

**To the Trade only.**

E. H. KRELAGE AND SON, NURSEYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale Catalogue (No. 37A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1885-86, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out of this specialty. The prices of Hyacinths in general are considerably lower than last year, and Tulips and other Bulbs, too, are in many instances inferior to former quotations. German and French editions as well as a separate English edition for America, are published.

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My Pansies awarded First Prize at Berlin Exhibition, 1884.

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THE COMMISSIONERS of HER MAJESTY'S WORKS, &c., are prepared to RECEIVE TENDERS for the SUPPLY of GRASS SEEDS for use in the Royal Parks, &c., during the year 1886. Forms of Tender, containing full particulars, may be obtained at this Office any day except Saturday between the hours of 12 and 3. Tenders are to be delivered before 12 o'Clock noon on Saturday, October 31 next, addressed to the SECRETARY, H.M. Office of Works, &c., 12, Whitehall Place, London, S.W., and must be endorsed "Tender for Grass Seeds, Royal Parks, &c." The Commissioners do not bind themselves to accept the lowest or any Tender.

A. B. MITFORD, Secretary,
H.M. Office of Works, &c., 12, Whitehall Place, S.W.—July 29, 1885.

# GARDEN REQUISITES.

**COCOA-NUT FIBRE REFUSE.**

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack 5 sacks 25s.; sacks, 4d. each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton in 2-bushel bags, 4d. each.

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**Notice.**

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| TOBACCO CLOTH, finest important | | 8d. lb., 28 lb. 18s. |
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| **COCOA-NUT FIBRE REFUSE** (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order. | | |

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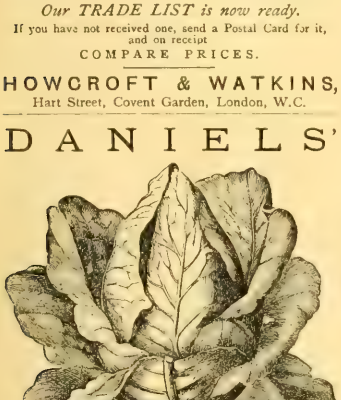
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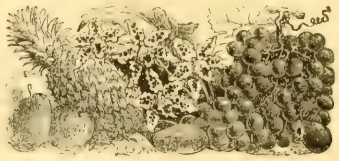
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THE

# Gardeners' Chronicle.

*SATURDAY, AUGUST* 1, 1885.

## HARTWELL.

THE ancient seat in Bucks known from an early period in history by the pleasing name of Hartwell, came into the possession of the present owners by the marriage of their ancestor, Sir Thomas Lee, with the heiress of Hartwell, who was a Hampden, one of the family who owned Great Hampden before the Conquest, the Lees being as old, since they belonged to the ancient family of Leighs, of Legh and Lyme in Cheshire. Sir Thomas built the old house on the site of an older one in 1570, and since the time of his successor—the first baronet, the Sir Thomas Lee who died in 1690, and was a country gentleman of mark, father of a Lord Chief Justice of England—the gardens have afforded examples of the several styles that have been in vogue, from the formal Dutch to the modern English.

The house has been much altered by the improvements of successive generations, while the 70 acres of ground around it have changed, too, by the substitution of fine timber and flower-beds for the clipped and architectural Yews and the artificial parterres and terraces which first came into fashion two centuries ago, and have now been swept away by the broom of improvement as ruthlessly as leaves are brushed from a lawn. The specimens of Oaks and Elms and Planes, Cedars of Lebanon, Limes, and Abies are exceedingly handsome, and render the place as pleasing as any site in this butter-making flat of the Vale of Aylesbury can be.

A very interesting event in the history of Hartwell occurred when it became the refuge of King Louis XVIII. and his court. It was during several years crowded by members of the royal family of France, and of the highest nobility, who were packed away at Hartwell in exceedingly close quarters, including the King, the Queen (who died here), the Comte d'Artois, the Duc and Duchesse d'Angoulême, Duc de Berri, Duc de Grammont, and other dukes and duchesses, besides counts, barons, chevaliers, abbesses, physicians, and their domestics, numbering, all told, 140 as the usual family, and sometimes 200 when company arrived: only the ingenuity of the French could have accomplished such a squeeze. But for six years Hartwell remained a happy as well as overflowing household. Most of the rooms and closets were subdivided, while the adjacent cottages were also occupied by those who had hitherto been accustomed to the best *salons* of Paris. A French gentleman, however, is a cheerful personage, easily amused, "tickled with a straw," and until another Revolution brings to Hartwell another such a company from Paris, such merriment as enlivened that rather dreary neighbourhood will hardly be repeated there. We sometimes say of the residences of farmers in England, *mansit odor*, and the same may be said of the mirth, music, and dancing at Hartwell during the residence of the French. The example of the King was admirable, for the "royal sage of Hartwell"

was not merely a scholar and philosopher, but a gentleman noted for his *savoir vivre* and wit.

During the ownership of the late Dr. Lee, to whom I was introduced many years ago, and who showed me his museum and observatory, his friend Admiral Smyth, an antiquarian and archæologist, prepared a learned volume entitled *Ædes Hartwellianæ*, which I have read and, I fear, forgotten. Another and more popular account of Hartwell and of a visit to the French King, by the well known author of the *Greville Memoirs* (vol. ii., p. 345), by Mr. Greville himself as a youth of eighteen, with his father, is as follows:—"About ten years ago my father and I went to Hartwell by invitation of the King. We dressed at Aylesbury and proceeded to Hartwell in the afternoon. We had previously taken a walk in the environs of the town, and had met the Duchesse d'Angoulême on horseback accompanied by a Madame Choise. At five o'clock we set out for Hartwell. The house is large, but in a dreary, disagreeable situation. The King had completely altered the interior, having subdivided almost all the apartments in order to lodge a greater number of people. There were numerous outhouses, in some of which small shops had been established by the servants, interspersed with gardens, so that the place resembled a little town."

They were conducted by the Duc de Grammont into a small private apartment hardly larger than a closet, where the exiled King received them most graciously and shook hands. Pictures of the late King and Queen, Madame Elizabeth, and the Dauphin, Louis XVII., hung on the walls. The King continued rather oddly during the audience, swaying his body backwards and forwards—a habit which, in so small a cabin, caused in the elder visitor sensations resembling sea-sickness. After the interview the whole party assembled in the *salon*, a large room which, at that time, had a billard-table at one end, and here the visitors were presented to the Duc and Duchesse d'Augoulême, the Duc de Berri, the Prince and Princess de Condé, and a number of other Ducs and notabilities, including the Duchesse de Sirron, a little old *dame d'honneur*; to Madame d'Angoulême, and the Archbishop of Reims, an infirm old prelate, a martyr to the tic doloureux. Soon after six dinner was announced, and the party passed into the adjoining room, the King walking out first. The dinner consisted of a few dishes only, and two sorts of wine—port and sherry, the native vintages of France not being represented. But the King himself did the honours, and the repast, though plain, was agreeable, being seasoned by the civility of a monarch.

Mr. Greville gives an interesting account of the habits of the illustrious exiles and their friends. After dinner, which lasted but a short time, the ladies and gentlemen all got up together. Each lady folded up her napkin, tied it round with a bit of ribbon, and carried it away, and all present, Ducs as well as Duchesses, returned to the drawing-room and drank coffee. After a quarter of an hour's conversation the King retired to his closet, and the rest of the party followed his example, and sought their private apartments—but not for bed! The Grevilles were taken to the Duc de Grammont's apartments, where they drank tea, and in about three-quarters of an hour they went to the apartment of Madame d'Angoulême, where most of the party were assembled, and where they remained about a quarter of an hour. All then descended to the drawing-room, where several card-tables were laid out, and the King played whist with the Prince and Princess de Condé and Mr. Greville, the King settling the points of the game at *le quart d'un shilling*. The rest of the party played billiards and ombre. A very gracious invitation from his Majesty to remain the night instead of returning to the inn at Aylesbury induced them to sleep at Hartwell, after due warning as to the slender accommodation. "I fear you will be *très mal logés*," said the king, "but one offers what one can."

They retired at 11 o'clock, and *tres mal logès* they were! Among their endless experiences some of the family had adopted roof gardening—that is, they had carried up some earth, and had planted some little gardens, and in the morning, just as Mr. Greville, the elder, had arisen from his couch, an old woman on the roof hove in view upon the leads just outside his window, where she remained—an elderly Eve, tending her plants—while he dived hastily beneath the clothes again.

At ten they breakfasted, and at eleven took leave of the King, who then went to mass, according to his custom, while they went to town. And so time slid at Hartwell. In 1811 Gustavus IV., the dethroned King of Sweden, visited the King, two crownless monarchs together! Our "royal sage" remained expectant, and the drama on the Continent proceeded. At the birth of the King of Rome he observed in one of his clever and animated letters, "So then we have a babe in the Napoleon family!—all the babes in the world will not prevent the overthrow of iniquity."

The prediction came true. The Allies entered Paris, and Louis all at once became *Le Désiré*. The family were at prayers at Hartwell on the morning of Lady Day, 1814, when the rumbling of wheels approaching rapidly disturbed them, and two post-chaises and four, followed soon by other carriages, containing deputies from Paris and Bordeaux, bearing the white flag of the Bourbons, dashed up to the door. Louis received his visitors in the library, signed a declaration which Talleyrand had suggested, and presently became king.

Modern gardening on a costly scale is not carried out at Hartwell now, but the beauty of pleasure grounds depends quite as much on shrubs and trees and permanent subjects as on that kind of gardening which is fugitive in its effects; and those owners are fortunate whose predecessors were not unmindful of posterity. *H. E.*

# New Garden Plants.

## ADIANTUM CUNEATUM ELEGANS. *n. var.*

FRONDS triangular quadripinnate as in the type; pinnules (ultimate) very narrowly cuneate, for the most part slightly oblique or incurved, the upper margin undivided or more usually bilobed, occasionally trilobed; sori one, two, or three, on each pinnule, according to the absence or presence of apical lobes, each surrounding the base of an apical notch, roundish reniform; indusium pallid, of the same form, entire.

This is an elegant variety of the old favourite evergreen Fern, Adiantum cuneatum. Its fronds are about the normal size, the specimens before us having a dark glossy stipes of about 6 inches long, and a triangular frond or lamina measuring about 9 inches in length and as much across the base. The pinnæ, which are ovate, triangular, have a distinct stalk, and the whole frond has a light and open appearance owing to the pinnules being rather widely set on the hair-like divisions of the fronds. The pinnules are quite small, the larger ones not exceeding one-fourth of an inch in length, and one-eighth of an inch across the widest part at the tip, while many are not half this size; their form is narrowly wedge-shaped and usually they are slightly oblique or laterally curved, being curved inwards towards the rachis. The smaller ones are undivided and have a solitary sorus, with its roundish reniform, pale-coloured, entire indusium; the medium-sized ones are usually parted into two lobes, each lobe bearing a sorus; and the larger ones are parted into three lobes, all fertile.

The three fronds before us are quite uniform in character, so that the variety may be considered as a fixed one; and the light airy appearance which its small and wide-set pinnules give to it, give it a perfect claim to the title of elegans which we propose to apply to it. Less dense than the typical form and less gossamer-like than the variety gracillimum, it is about intermediate between the two, perfectly distinct and equally effective as a decorative plant. It was raised by Mr. C. Kershaw, of Slead-Syke Nurseries, near Brighouse, who will probably in due time be prepared to distribute it. *T. Moore.*

## SEDUM FORMOSANUM (*N. E. Br.*), *n. sp.*

This an exceedingly pretty and rather graceful species, which is now making a fine show in the Succulent-house ar Kew. It is a native of Formosa, where it was collected in June, 1884, by Mr. C. Ford, and sent to Kew. It is an annual species, and likely to be useful for outdoor effect. The only species known to me with which it is likely to be confused is the Chinese S. Alfredi, Hance, but it is easily distinguished from that plant by its erect carpels, since in S. Alfredi they are widely divergent.

Annual, quite glabrous, growing to about 6 inches high; stem repeatedly branched from near the base in a trichotomous or dichotomous manner, with divergent branches, the ultimate branches recurving, very indistinctly tetragonal, with a groove down two of the faces, very pale green tinged with red. Leaves 1—3 in whorls at the branchings of the stem, with occasionally 1—3 on the long internode between the points of branching, 1—1½ inch long, ⅛ inch broad, flat, spatulate, obtuse, recurving towards the apex, softly succulent, bright green above, paler beneath, midrib distinctly impressed. Flowers sessile (except those in the primary forkings of the stem, which are sometimes pedicellate), bracteate, bracts like the leaves, but smaller; calyx green, sepals unequal, 1—2 lines long, fleshy, spathulate, obtuse, spreading; corolla bright yellow, petals lanceolate acuminate, channelled down the face, very spreading; stamens shorter than the petals, filaments yellow, anthers at first red, afterwards black; hypogynous scales minute, sub-rectangular, pallid; carpels erect in flower and in fruit, with short subulate slightly recurving styles. Formosa; Oldham, 255 (112 Kew distribution)!; Wilford, 523! *N. E. Brown.*

## AËRIDES LOBBII, *Hort. Veitch* (*Mr. Cypher's variety*).

I have seen enough of Aërides Lobbii. It has flat leaves, a panicled inflorescence, and spotted flowers. It is in remarkably great perfection at Hamburgh in the very fine collection of Herr H. von Ohlendorff, under the care of Mr. Blythe, an excellent Orchid grower, once of the establishment of Messrs. J. Veitch & Sons. Mr. J. Cypher, Cheltenham, Queen's Road Nursery, sends a very curious specimen. The leaf is rather narrow for A. Lobbii—of course, flat. The inflorescence is not a panicle, but a very long raceme with large flowers, covered with remarkably dark purple spots and stripes. The lip is so covered with rows of spots that it appears at a distance to be self-coloured purple, with the exception of the white narrow margin. It would be very interesting to learn whether there are many such plants, and whether they will keep constant in future as to the simple, not panicled raceme. *H. G. Rchb. f.*

## MORMODES LUXATUM PUNCTATUM, *n. var.*

A variety, whose whitish flowers have numerous small reddish spots on the inner side of the sepals and petals. It was kindly sent me by Mr. F. Sander. *H. G. Rchb. f.*

## LÆLIA ELEGANS PLATYCHILA, *n. var.*

Near Lælia elegans prasiata; sepals and petals narrow, and without any green paint. Lip remarkably broad, and nearly confluent. I had it from Mr. F. Sander, who tells me it was grown by John Riley, Esq., of Burnley. *H. G. Rchb. f.*

## LILIUM BROWNII (*Miellez*) VAR. VIRIDULUM, *Baker.*

This appears to be a well-marked variety of this species, which is the plant I formerly (*Journ. Linn. Soc.*, vol. xiv., p. 230) supposed to be the Lilium japonicum of Thunberg, but which the authentic specimen in Thunberg's herbarium shows to be really what has of late years been called L. Krameri. From the typical L. Brownii, as figured in the *Flore des Serres*, t. 47, the present differs in the creamy-white colour of its flowers, which are tinged on the outside with yellowish-green, with only a faint dash of claret-brown. The leaves are much broader and shorter than in the type, those of the upper part of the stem being only two or three inches long by an inch broad, oblong-lanceolate instead of lanceolate. It has been imported from Japan by Mr. T. S. Ware. *J. G. Baker.*

## HARDY FLOWERS IN JULY.

The hot sun has made the succession of flowers very rapid, but, with the help of the water-pot, the garden has continued gay through July. I mention a few plants in flower on July 25, selecting some which are not in universal cultivation :—

### Astrantia helleborifolia.

The only one of the genus, as far as I have seen, of which the flowers have a decided colour, and in the species they are good pink. It is a native of the mountainous regions between the Black and Caspian Seas. The leaves are divided in the centre into three equal ovate acute lobes. The flowers are as large as those of A. major, but less freely produced. It runs fast underground.

### Geranium armenum.

A very handsome plant in a sunny season like this. Several plants here, 4 feet high and 6 feet across, make a great display. The flowers are larger than those of any other Geranium, and are produced in abundance. It does best on a dry raised bed, and where it has room to spread to the ground all round the centre. It may be cut up in autumn, and pieces grow rapidly. It ripens seed in good seasons, fertile seed being easily distinguished. The seedlings flower the second year.

### Geranium Wallichianum.

A good Himalayan plant, doing well in a dry and well-drained soil like that of Kew, where it occupies a large share of the Geranium bed in the herbaceous garden. It is a prostrate, wide-spreading plant, doing well on the edge of a bank. The flowers are large and prettily marked with conspicuous black veins. They vary in different plants from dark blue to pink. The kind is increased best by seed.

### Hypochæris maculata.

A rare native plant, and a very effective subject for a sunny border, where the soil is deep and dry. It has large handsome spotted leaves, the shape of those of the common Cat's-ear. The stalk is stiff, and about 2 feet high in cultivation, branching into three or four large flower-heads of bright golden-yellow. It continues long in flower, bearing all weathers well, and is universally admired, though seldom seen in gardens. It is perennial, but should be grown from seed.

### Odontospermum maritimum.

Though not quite hardy this beautiful plant, from Southern Europe, is a most desirable addition to the summer garden. Cuttings may be taken in September and wintered in a cold frame, and the plants put in deep sandy soil in a hot sunny part of the garden in May. The habit of the plant is compact and excellent, and the flowers continue to be produced so abundantly until the end of summer as to overlap one another. They are of remarkable regularity, and bright clear yellow.

### Senecio leucophyllus.

A species from the Pyrenees, with much crimped, very silvery leaves, rising not more than 3 inches from the ground. The chief merit lies in the foliage, the flower being like that of a small Ragwort.

### Senecio macrophyllus.

This plant is often called Ligularia, and is a fine conspicuous subject for a back row. The leaves are large and glaucous, shaped like those of Horse Radish. The flower-stalk is 6 feet high, bearing a tuft of yellow flowers, like a magnified Golden Rod, 2 feet long and 1 foot through. I recollect, when there was a long walk of flowers at Hale Farm Nursery, thinking these the most effective plants in the row. The Caucasus is the native country.

### Senecio japonicus,

called also Erythrochæte palmatifida, or red-haired, with palmate-cleft leaves, a name which describes the orange-yellow of the flowers, as well as the broad characteristic leaves with five deeply cut laciniated segments. It flowers best in sheltered and sunny situations. Like nearly all Japanese plants it is liable to be injured in bud by cold spring winds. It flowers in umbels like a gigantic Ragweed, each flower being quite 4 inches across. The plant grows about 4 or 5 feet high.

### Centaurea glastifolia.

Two fine plants, with large Thistle-like flowers, compete with one another for merit as decorative; both are 5 feet high, and branch from the ground to 3 or 4 feet across; both came to me from Western Asia. One I obtained some years ago at Hale Farm Nursery by the name of Centaurea aurea; but it is not the plant of that name figured in *Bot. Mag.*, tab. 421, but the Centaurea glastifolia of *Bot. Mag.*, tab. 62, described by Boissier in his *Flora Orientalis* under the generic name of Chartolepis. It has a more slender growth than the following, and the flowering season is longer, but the flower-heads are smaller. It ripens no seed at Edge, but is easily divided.

### Centaurea macrocephala,

figured in *Bot. Mag.* 1248, is a stouter and larger plant, having many flower-stalks, each surmounted by one flower; but fifty flowers out at a time make a great display, and plants of three or four years old have as many as that. It ripens seed in abundance, and the seedlings flower the second year. The flowers last for about a fortnight.

### Ox-eye Daisies.

This is the time for the large white Daisies of the "Ox-eye" class—Leucanthemum—now made a subspecies to Chrysanthemum—has usually been their generic name. Several are enumerated which approach so near to one another, and to our wild Ox-eye (C. vulgare), that botanists have been tempted to class them all as varieties of one. Two of these are prominent as the best, and I highly recommend them. Their characters are easily recognised, though they may truly say "by many names men call us." I follow the names adopted at Kew. The best and earliest of the two is

### Chrysanthemum maximum.

A native of the Pyrenees. The flower of this in cultivation is often nearly 5 inches across. The plant spreads widely from a small base; the stalks are of uneven height, varying when the plant is in flower from 2 feet outside the clump, to 3 feet, or even 4 feet, in my garden in the centre. The rays of the flower are unequal in length, giving it the appearance of a decorative star. The leaves are lanceolate near the base of the stalk, 4 inches long and 1 inch wide, and acute, generally serrated at the edges, but sometimes smooth. These become short and narrow as the flower is approached, until the highest are awl-shaped, 1 inch or less long. The plant is much improved by being pulled to pieces in autumn and replanted in good soil. This plant came to me some years ago as C. atiatum, a name it often bears. The true C. atiatum is still nearer C. vulgare, and I do not know it in cultivation. C. tripteris is another of the names, but of no authority, by which C. maximum figures in gardens.

### C. latifolium

comes into flower nearly a month later and is a larger and coarser plant, though the flowers are smaller. It is more commonly called C. lacustre, but its Kew name rightly describes it, as it has leaves fully 2 inches across and obtuse, becoming shorter, but not narrower as the top of the stalk is approached. The stalk is very stout and swells beneath the flower-bud. It is found wild only in Portugal. A botanical friend who lives there tells me that it is by no means common; he found a bed early this summer growing fully 10 feet high, from which he sent me seed. It germinated at once, and I now have a thick crop 6 inches high. The flowering season lasts into September. The ordinary height in my garden is 6 feet.

### Campanula lactiflora,

a native of the mountains of Asia Minor and Armenia, is one of the finest garden plants in cultivation, if properly treated. One of them now attracts attention first of all the plants in a long flower bed here. It is 6 feet high, three years old, and has about thirty flowering stalks; each of these has a dense bunch of flowers 2 feet long and 9 inches through. The colour is clear pale blue, and the whole mass makes a very effective display when properly disposed by staking and tying. Nothing can be more simple than its cultivation. Seedlings which come up here spontaneously, flower the first year at a foot high. Select the colour you like best, as they vary from blue to white, and plant them in any situation in rich soil, giving plenty of room. The root-stock soon becomes large and hard and chokes the plant, which ought not to be expected to do well for more than three or four years.

### Helenium Bolanderi and H. autumnale, var. pumilum

are both excellent plants. The latter is well known and only requires management to keep it vigorous, and to prevent it running too much. The former has been distributed under the wrong name of grandiflorum, which, according to Asa Gray, is a synonym of the large forms of H. autumnale. Our plant is the earliest of its class to flower; has a weak stalk a foot or 18 inches high, a black disc, and is certainly the H. Bolanderi of Asa Gray.

### Aster Bigelovii

was figured in *Bot. Mag.*, tab. 6430, as A. Townshendii, but Asa Gray, whose authority is absolute for the names of North American Composites, says that it is to be A. Bigelovii. It is only biennial, but well worth growing. In cold soils it is not very hardy, belonging, as it does, to the South-Western States. I find it best to sow in summer, and keep the pans in a frame through winter, planting out in May. The plants then flower all July and August. The flowers are 2½ inches across, and have dark purple rays, with a rich golden disc. The habit is branching, and the flower-stalks produce flowers nearly from the ground, growing 4 feet high. It is handsome and distinct.

### Œnothera marginata,

figured in *Bot. Mag.*, tab. 1593, as Œ. cæspitosa, is by far the finest of its class, but many gardeners seem to lose it. I find it not difficult to keep by constant transplanting in light moist soil and an open situation. Each flower lasts only from 6 in the evening to the next noon, but the flowers are abundantly produced, and perfume the night air, showing conspicuously in the twilight. The flowering season is continued for long, the underground runners of spring becoming the flowering plants of autumn, but it must have and deserves to have ample room to develope these.

*C. Wolley Dod, Edge Hall, Malpas, July 25.*

## TERRESTRIAL ORCHIDS OF SOUTH AFRICA.

Whilst epiphytal Orchids are diligently sought after and carefully cultivated, the terrestrial species have been very much neglected, although among them are many that are equally beautiful as a number of the epiphytical species, which are so highly prized and high priced. The reason of this may possibly be because it has generally been found that, after flowering, the plants fail to appear again in the succeeding season; but how far this is due to natural causes, not understood, and how far to ignorance of the proper method of treatment, remains to be discovered. Probably both causes have operated, for it is well known that some species will appear, and flower in abundance during one or two seasons in their native habitats, and then be seen no more for several years; I have observed our English Orchis ustulata do this in the neighbourhood of Reigate. But most species appear regularly every year in their native localities, and with these it is difficult to assign any other reason for failure under cultivation than that they have not been properly treated. The terrestrial Orchids are chiefly natives of the extra-tropical regions, and as some of them grow in dry situations, others in marshy ground, some at low and some at high elevations, some near the sea coast and others inland, they no doubt require different methods of treatment under cultivation to meet their several requirements; but so long as the cultivator has no knowledge of the soil, situation, climate, &c., in which the plants he has to cultivate thrive, especially—as seems to be the case with terrestrial Orchids—if they are not such as can easily adapt themselves to different conditions, he may be a long while experimenting before he succeeds in cultivating them easily. With a view of giving some information upon a few of these points that may perhaps be found of practical utility, I propose to enumerate some of the finest of the South African Orchids (nearly all of which are terrestrial), giving brief descriptions, and what particulars I possess as to the conditions under which they grow, and the locality in which they are found in their wild state; adding at the end some observations as to what may possibly be the best mode of treating them under cultivation. I have chosen the South African species for these notes in preference to those of other regions, because I am better acquainted with them in the first place, and, secondly, because I learn that during the last year or two some importations of them have taken place, but I believe with not very successful results hitherto.

There are, however, in Europe, Australia, New Zealand, and Chili, numerous other terrestrial Orchids of as much interest and beauty as the South African ones. Mr. Elwes has recently drawn attention to some of them in these columns, dealing more especially with the European species, and if desirable I may on a future occasion give some account of those from other regions in the same way as I here deal with the South African species.

For notes relating to the soil, situation, altitude, &c., of many of the Cape peninsula species I am greatly indebted to Mr. H. Bolus, of Cape Town, and the sentences placed between inverted commas are copied from his notes. Mr. Bolus is making a special study of the Cape Orchids, and his information may therefore be taken as about the best that can be obtained.

In South Africa there are about thirty genera of Orchids, out of which only about half-a-dozen contain epiphytical species, the rest being terrestrial. Of the epiphytes there is a Megaclinium, an Ansellia, a few small-flowered species of Angræcum, Mystacidium, and Polystachya, and a Cymbidium, some of which are worthy of cultivation, and a few have already been introduced. Of the genus Cymbidium there are also terrestrial species. In the following enumeration the brief generic characters are chiefly taken from Harvey's *Genera of South African Plants*: and I have arranged both genera and species alphabetically for convenience of reference. As most of the genera belong to the tribe Ophrydeæ (which has granular pollen), the pollen masses are only described in those genera belonging to the other tribes. Besides the species mentioned there are numerous others more or less worthy of cultivation, and likely to be introduced.

BARTHOLINA.

Sepals and petals erect, narrow. Labellum spurred at the base, very deeply cut into numerous thread-like segments. This curious genus contains only the two following species. The leaf is solitary, and the stem bears but one flower:—

*B. Ethelæ*, Bolus.—Resembles the following species in general appearance, but the petals are pale bluish, and the lip pallid, with greenish-brown filaments ending in a white knob. Found in similar places to the following, but rarer: flowering in December.

*B. pectinata*, R. Br. (*Bot. Reg.*, t. 1653).—A curious and interesting plant, which, grouped in a pot, would be very striking. It has but one roundish cordate, glabrous, ciliated leaf, spreading on the ground, and a hairy stem 4—6 inches high, bearing one flower 1½ inch in expanse. All three sepals are erect and green; the petals and pectinate part of the lip are light violet, the middle part of the lip being green. This grows "among shrubs, most copiously close to the sea, in well drained light soil" on the Cape peninsula and elsewhere, flowering in September.

CALANTHE.

Sepals and petals subequal, free spreading. Labellum spurred, rarely spurless, three-lobed, and with the middle lobe notched, lamellate or tubercled on the disc. Pollen masses 8, waxy, much narrowed at the base, adhering in fours to a two-partible gland.

Only one species (C. natalensis, Rchb. f.) in South Africa, confined to Natal and the South-eastern districts. It is a very handsome plant, with broad plaited acute leaves, which are produced at the time of flowering, and a flower-stem, 12—18 inches high, bearing numerous bright lilac-coloured flowers about an inch in expanse; the inner face of the sepals and petals are whitish, and the labellum, after two or three days, changes to salmon-colour. It grows in swamps in forests, and, therefore, requires shade and plenty of moisture. This species is now in cultivation: see *Gardeners' Chronicle*, p. 78 of the present volume.

CERATANDRA.

Odd sepal and petals united into a hood, which is usually in front of the flower, and pendulous; lateral sepals free, spreading. Labellum clawed, reniform or lunate, adnate to the column, with or without a fleshy appendage. Column horse-shoe-shaped. A small genus, natives of the western districts of Cape Colony. The roots are fasciculed and fleshy; the whole of the stem is clothed with very narrow leaves, and the curious flowers are more or less yellow in colour. All of the species are probably worthy of cultivation, but the following appear to be the finest:—

*C. bicolor*, Sond.—About 6 inches high; leaves fewer than in most of the species, linear or linear-lanceolate, lax. Flowers 1—8 in a lax spike, about ¾ inch in expanse; dull yellow, the sepals yellowish-green; labellum reniform, with a quadrate greenish fleshy appendage on the disc. Moist grassy places, in sandy soil, on Table Mountain, &c., at about 2000 feet elevation. It flowers in December.

*C. chloroleuca*. Eckl.—A fine species, 6—12 inches high, stem well clothed with linear-lanceolate leaves. Flower-spike 3—6 inches long, dense. Flowers ¾ inch in expanse, yellow. Labellum with a purple quadrate appendage on the cordate-lunate expanded part. To judge from dried specimens this ought to be an ornamental plant in cultivation. It grows in moist sandy soil on Table Mountain, at 2400 feet elevation, and elsewhere, and flowers in November and December.

*C. grandiflora*, Lindl.—In general appearance this resembles C. chloroleuca, but the spike is shorter and broader, and the flowers larger. The reniform expanded part of the lip has no fleshy appendage upon it. It grows at low elevations on sandy plains in the vicinity of Algoa Bay, &c.

*C. Harveyana*, Lindl.—This resembles C. bicolor in general appearance, but differs in its small triangular-lunate acute lip, which is also provided with a fleshy appendage. The sepals are green, and the rest of the flower yellow. Moist grassy places on Table Mountain, at about 2000 feet elevation, flowering in December. *N. E. Brown.*

*(To be continued.)*

## CHARD NURSERIES.

CHARD, horticulturally, was almost unknown until a few years since, when Mr. Jarman came there and started a nursery business. The seed business was carried on by the late Mr. Jarman and his son, the present proprietor, for upwards of sixty years, but the gradual increase of business rendered the management very onerous, so that it became a necessity for the successful prosecution of the affair to start a nursery. The first tree was planted by Mr. Jarman's eldest son on March 28, 1884, on a piece of land near the town, which has been named Springclose Nursery.

I was not a little surprised recently, on being shown round the nursery by the manager, Mr. Lenge, to see the stock of useful stuff already got together, and ready for sale. A collection of choice Conifers looked very healthy, and, to judge from the quantity of Rose stocks prepared for working this summer, the Rose trade is intended to be made a great consideration; over 250 varieties of the best sorts are already in stock, and about 10,000 stocks will be worked this year. Perennial Phloxes and Pæonies are planted largely; a large space is allotted to Rhubarb—New Queen, Early Albert, Linnæus, and Victoria being the sorts planted. Better soil could scarcely be found for a nursery, being a fibrous loam of great depth and good quality.

I was much struck with the lowness of the roofs of the houses, which from outside seemed to be rather flat; but was informed that the angle adopted was considered quite sufficient to throw off rain and avoid drip. The buildings have been carried out by a builder of the locality from plans furnished by Mr. Jarman, whose great object was to erect houses that would ensure good sturdy growth; and I think this idea will be fully realised. The houses being somewhat scattered three boilers are used for heating, having more than 4000 feet of 4-inch piping connected to them, and are arranged so that each house can be heated separately if necessary. One is a span-roof house, 27 by 10 feet, chiefly filled with Ericas. Another is a span 35 by 16 feet, used for propagating purposes. It contained a fine stock of Ixoras, Crotons, Coleus, Eucharis, Ferns, and a large batch of seedling Gloxinias, and tuberous Begonias, from which some fine flowers are expected. Near this house is a long range of pits and frames filled with various kinds of plants. One span-house, 35 by 16 feet, is used for growing pot Roses, Tree Ferns, Bouvardias, Azaleas, and Camellias. Pelargoniums are cultivated in another large span-roofed house, Adiantums are grown in quantity, and Stephanotis; and in a lean-to was a useful lot of plants for decoration—amongst them fine specimens of Adiantum gracillimum. A lean-to, 25 by 30 feet, was filled with zonal, tricolor, and other Pelargoniums, with Tea Roses in pots. Another span-roof, 30 by 20 feet, is to be used for seedling Calceolarias, Cinerarias, and Primulas.

I hope Mr. Jarman will receive the well deserved support of all in the locality; his energy in starting such a business in such a sleepy place as Chard being most commendable. The good folk of the town and neighbourhood can now buy pot plants, &c., since Mr. Jarman has opened his nursery, but before they could only purchase such things on the weekly market days. To meet the demands of a very fast increasing trade a more central position in the heart of the town has been purchased to erect a commodious seed shop and stores. *R. Andrews.*

## HETEROTOMA LOBELIOIDES.

THIS is at once remarkable for its showy flowers and for their singular structure. It is a Mexican plant, herbaceous or woody at the base, with alternate stalked lanceolate leaves, and numerous flowers in loose terminal racemes. Each flower is about 2 inches in length, raised on a slender stalk, and of an orange-crimson colour, the tips of the corolla being light yellow or greenish. The extraordinary shape of the flower arises from the great inequality of the receptacular tube. The flower-stalk expands at the summit into a flat bowl-shaped dilatation, at one end of which are three small calyx-teeth, while at the other are two smaller ones. The corolla is tubular, split down the back, and ligulate, as in Lobelia, prolonged at the base into a long spur, adherent to the anterior or prolonged part of the receptacular tube. Four of the five stamens originate from the throat of the corolla tube, the fifth is prolonged into the long spur of the corolla. The anthers are coherent, two of them provided with a fringe of hairs at the top, three naked. The anthers open by pairs at the top behind the fringe of hairs, and liberate the pollen prior to the ripening of the stigma. The ovary is two-celled with numerous ovules, as in Lobelia. The singularity of the flower is thus brought about by the disproportionate growth of the receptacular tube on one side, and which drags with it two of the sepals and one of the petals—the latter in the form of a spur. The plant makes a very handsome greenhouse plant, though it is not often met with. Mr. Moore, of the Chelsea Botanic Garden cultivates it every year with a degree of success satisfactory to the gardener, but perhaps not so much to the taste of the botanical pupil, to whom the peculiarities of the flower must prove somewhat formidable. It is not mentioned in Mr. Baines' recent work on stove and greenhouse plants, though amply worth including in any choice collection. Seeds may be raised on a hotbed, and the plant grown in a compost of peat and loam. (Fig. 28.)

## Notices of Books.

**Dictionnaire des Roses, ou Guide Général du Rosiériste** (*Dictionary of Roses, or General Guide for the Rosarian.*) Par Max Singer. Tournai: Max Singer.

In two thick volumes M. Max Singer, a Rose grower of Tournai, has laid before the reader a descriptive catalogue of 6000 Roses. To each Rose has been appended, so far as possible, the name of the raiser, the date of introduction into the trade, the section to which it belongs, a description of the bush, the nature of the foliage, the colour of the flower, &c. The author recognises that his book is not perfect, and submits it to the judgment of the critics. "I shall listen," says he, "to the observations of proficients, I shall follow the advice of competent counsellors, and I shall laugh at those who will find fault and scold for the pleasure of fault-finding and scolding." Thus warned we proceed to cut open the pages of the book, but with a feeling of frank independence as great as that of the author we declare our opinion that the critic who troubled his head about whether the author listened to his criticisms, heeded them, concerned himself with M. Max Singer's hilarity, or cared for anything but the book before him, would be unworthy of his office.

To the book, then. The first fifty-five pages, devoted to what the author calls *races et espèces anciennes*, are probably the worst in the book. The author makes use of the terms species, races, varieties, sub-varieties, in the vaguest fashion. If we were

to say that the town of Tournai was a continent, that the province of Hainault was a village, the kingdom of Belgium a parish, the continent of Europe a commune, we should use geographical terms in the same vague fashion that the author applies botanical terms. It is true that such carelessness is by no means peculiar to the author, but is general in books written by and for horticulturists. By way of illustration we may mention that Rosa rugosa is given as a variety of Rosa ferox, and a native of Japan, from which country it has never emerged (*sortie*)! In like manner Rosa involucrata, Lyellii, microphylla are referred to Rosa ferox "third species, 1 race," and other species are similarly treated. The author is of course entitled to his own opinion, and he may laugh as long as he likes at those who differ in opinion from him. For our parts it is a pleasure to get away from these fifty-five pages and enter upon the more substantial and useful part of the book. This consists of more than 800 pages of valuable information, by the side of which the fifty-five preliminary ones are as nothing. We have, in fact, in alphabetical order, a descriptive list of an enormous number of Roses with indications of the class to which they belong—a brief description of their characters, and frequently the name of the raiser, and of the nurseryman by whom it was first introduced to commerce. The catalogue is very full; but it is remarkable, that of our rich rosarian literature, the author seems only to have seen one English catalogue, and the name of that is misspelt. M. Max Singer ignores *in toto* the excellent catalogues of the National Rose Society; the works of W. Paul, Rivers, Shirley Hibberd, Reynolds Hole; the catalogues of our Pauls, Cranstons, Rivers, Turner, Veitch, Curtis, Prince, and other great rosarians seem not to have been seen, or, if so, they are not alluded to in the list of *ouvrages consultés*.

Glancing down the list of names we find "Madames" occupy seventy-six pages—a proof that rosarians prefer expanded blooms to Rose-buds, for "Mademoiselles" only occupy twenty-one pages, while "Monsieurs" only seven. But then the "Mistresses" and "Misses" and "Misters" are given separately. Still, in any case, the complimentary dedications to the wives are far more numerous than to the husbands or their daughters; doubtless this is done "with an eye to business." There is one "Grand Papa" and one "Grand Maman." Seven pages are devoted to "Generals," almost all French, one or two English, one American, one German. A page suffices for the "Captains;" "Admirals" occupy but little more space, which would seem to indicate that the navy is not very popular in France; "Counts" take up four or five pages, "Countesses" ten or eleven, "Rois" two, not forgetting that Roi d'Yvetot so much better known out of history than in it; "Dukes" six, "Duchesses" eight, "Emperors" one, while of "Empresses" only two are mentioned; but there are some fifteen "Impératrices." Six or seven pages are attributed to "Princesses" and "Docteurs" respectively, while there are thirteen mournful entries in the shape of "Deuils" and eighteen pages of "Souvenirs"—one called Souvenir du Centenaire de Lord Brougham." Happily for label writers there is only one "Fiançailles"—Fiançailles de la Princesse Stephanie et de l'Archiduc Rodolphe.

These figures, apart from any intrinsic interest they may have, will exemplify the scope of the book. Here and there we find illustrations of the same name having been applied to two Roses of the same class, thus there is a H.P. Alfred Colomb, sent out by Lacharme in 1863, and another H.P. of the same name sent out by Ducher in 1852. The latter name of course ought to have priority, but in the topsy-turvey nomenclature of gardens the rules of priority have been honoured in the breach. English names are mutilated in the usual manner, perhaps not more so than foreign names are with us, *e.g.*, Paul Neyron, which we usually but erroneously write P. Neron, or Charles Lefebvre, in which the b is too often omitted. But in a Rose catalogue of this pretension we do not expect to find Reverend H. Dambrain, or Reynolds-Holle, Rhuston Radclyffe, Standisch, Docteur Hoog, Docteur Hoocker, Duke of Edenburgh (p. 260), Duc of Edimburgh (p. 272), or Georges Backer. James Veitch is lucky, but his son "John Weitch" has not escaped the usual fate among those who use the French language.

The following extract, relating to a Rose which has been shown in fine condition this season, will show the author's plan:—

H.P. Merveille de Lyon, Pernet, Sen., 1882.—Growth vigorous, wood with stout straight prickles, foliage fine bright green, thick-set; flower very large, full, cup-shaped, colouring pure white, petals large, rounded, flushed in the centre with satiny-rose, always solitary; a seedling from Baron Rothschild, of fine appearance. The flower sometimes exceeds 4 inches in diameter."

The woodcut illustrations are coarsely executed, badly printed, and apparently not original, though the source whence derived is not given. We have felt it



Fig. 28.—Heterotoma lobelioides: flowers scarlet and yellow. (see p. 136.)

our duty to make some comments on this dictionary in accordance with the invitation in the preface, but we should be conveying a wrong impression if we did not give the author full credit for his diligence. In a book of such scope and magnitude errors are inevitable. We cordially say "Yes" to the author's last question in the preface, and say that he has rendered such service to rosarians by the publication of these volumes that no rosarian can afford to do without them.

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The Science of Agriculture. By F. J. Lloyd, F.C.S. Longmans.

This volume, we are told, consists mainly of a reproduction of some lectures given at King's College, London. The author begins at the beginning, and gives his readers some notion as to the nature and constitution of the earth and the air, proceeding then to manures, vegetable physiology, the management of farm crops and dairies, and terminating with a chapter on climate.

The chapter on physiology is disappointing and not altogether trustworthy. We do not think any physiologist would be satisfied with the definition of the nucleus as that given by Mr. Lloyd, "a small spot of dark matter." Again, though the author probably did not intend it so, his account of protoplasm reads as if that substance were confined to single cells, and that when cells are aggregated together, they either contain no protoplasm, or it is subjected to modification. Seeds are said to "possess two distinct parts—an embryo and a perisperm, enclosed in a coat or covering called the integument." But in the paragraph immediately after the one cited we read of the Bean, which certainly has no perisperm. In another place we are told that the vascular bundles of long cells and vessels run "the whole length of the stem and branches, open up a network of passages, and form a communication between the various parts of the plant, as our veins and arteries do throughout the various parts of our body." The account of stomata is equally curious, as well as the statement that "certain diseases of a fungoid nature invariably commence at the stomata of the leaves." The account of the diseases of plants is meagre in the extreme; the selection and improvement of cultivated plants is not treated of at all. We opened this book in the hope and expectation that we might find a handy manual of chemical and botanical science, as applied to agriculture, but we must say that our expectations have not been realised.

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How to Make the Land Pay? Longman's.

In the preface to the interesting book which lies before us, bearing the above title, and published by Messrs. Longmans, Green & Co., the author, the Rev. H. P. Dunster, M.A., of Woodbastwick Vicarage, tells his readers that his sole object has been to do good. Such a declaration was hardly needed in this case, because it is evident to even the most cursory reader that the reverend gentleman realises to the full the somewhat depressed condition of agriculture, and indeed of nearly all that relates to the land, and he offers many suggestions, more or less practical, in the book in the hope that they may lead farmers and landlords to think, to break away from the beaten track of ordinary culture and cropping, and finally, by adopting some new and distinctive course, seek for that prosperity which seems for the time to have withdrawn its countenance from the landed interest. In entering upon such an undertaking it is obvious that no writer could offer practical information, the product only of his own experience. Very much which is submitted to the judgment of readers is of a theoretical nature, or if not absolutely so, has been practised only by experts, or those trained specially to market and flower gardening. On the other hand the author is not without considerable knowledge of land cropping and cultivation, and still further he has largely laid under tribute not a few others who have discussed views in relation to the land analogous to his own; hence his book becomes, not merely an instructive essay, it is largely a digest of what is already known, or has been written, on the subject. Its interest and usefulness, possibly also its practical value, are therefore by no means inconsiderable.

Our author boldly declares in favour of what may be not inaptly termed farm gardening, and it seems obvious that in advising the production of many articles hitherto esteemed outside the range of farming he favours the increase of smaller holdings, so that actual personal labour, interest and control may be brought into play. There is a certain useful opportuneness about the issue of the book just now, because it seems to accord largely with the objects of the Small Farm and Holding Association recently promoted, and not long since referred to in these columns. Indeed, if it be purposed to diffuse amongst labourers and others anxious to purchase or rent small breadths of land, information of a useful kind to support and encourage them in such pursuit, we can strongly recommend that numerous copies of Mr. Dunster's book should be circulated, as it probably contains more information of the needful kind than any other compilation. The author is not at all charmed with the ordinary routine of land cropping as practised by farmers, for whilst he points out that many ordinary farm crops will not pay, the range of plants is of so limited a nature that much of the land is corn sick. Hence, if it is to be resuscitated and made once more productively profitable, it must be better cultivated and recropped with absolutely diverse subjects. Of these we find great stress laid upon hardy fruits, which it is thought opens up a profitable field for investment. Naturally those whose attention is being constantly attracted to the uncertainties which attend upon hardy fruit culture, look with some doubt upon the proposals thus made. The chief want in the securing of success in outdoor fruit culture is found in certain and safe seasons—conditions which nothing man can do can ensure. It is one thing to plant and to cultivate, but adverse climatal conditions may, and indeed often do, withhold the increase. On the other hand we are met by the singular fact that market growers of fruit, in spite of their many difficulties and disappointments, are yet constantly extending the radius of their fruit land; and if men who have market experience beyond that of all others are doing this, we may rest assured that others may go and do likewise. Perhaps, too, new supplies may open out new markets, especially if growers can be brought into immediate contact with consumers. In dealing with this question of "How to make the land pay" we are morally certain the solution lies as much in the direction thus pointed out as in any other. For the reason thus given we cannot but sympathise with the author in his warm advocacy of the wider cultivation of orchard fruit—bush fruit, always certain to crop well, and almost always profitable; Strawberry culture, on holding and suitable soils, especially of late sorts for sale after the usual glut is passed. There is very much that is interesting found under the head of Filbert growing meaning thereby all kinds of small nuts of course, and with respect to which much useful information is given. Of course good Filberts cannot be grown if left to take their chance in woods and amongst squirrels. We import enormous quantities of Spanish grown nuts, but should save the money expended by purchasing of our home growth, but we have too few, although it is found that good prices for our home Filberts can be obtained in the United States—a fact which should encourage many land owners to plant Filberts and Cobs extensively and place their plantations under the charge of experienced cultivators. We have plenty of land, plenty of labour, and plenty of capital; our chief want, then, is such a revision of our present land system as shall encourage enterprise. A chapter devoted to bulb growing somewhat urgently advises us to grow our own bulbs rather than encourage the Dutch growers. The author asserts that much of our own land is as good for the purpose as is that of Holland, and largely enters into methods of cultivation adopted there, to which success in bulb culture is perhaps as largely due as to soil and climate. Perhaps we have not the knowledge essential to success in this form of enterprise—perhaps we lack courage to embark in it. In any case it would not absorb any very extensive area were it entered into here. We know of one case where it was tried in suitable soil by a good cultivator, but as the produce could not be truthfully called "Dutch bulbs," the trade would not buy. On the other hand vegetable gardening opens up for the cultivator a wide range of enterprise, and very much is said under this heading which, if not new, yet is worth rereading. Naturally, in vegetable culture we find the nearest approach to ordinary farming, but to rear good marketable crops much more manure, labour, and deep cultivation are needed. To the vegetable gardener, almost more than any other, is it essential that he should have good markets within easy distance. These secured there can be little doubt but that there is an illimitable future open to this form of market farming. Persons of restricted ideas on land cultivation will be surprised at the range of subjects which Mr. Dunster thinks well of for the purpose of making the land to pay. Thus he devotes interesting chapters to Mushroom, Sugar Beet, Osier, and even Watercress culture; and of allied garden subjects, considerable stress is laid upon bee-keeping, poultry, and rabbit farming, &c., and, not least, the production of milk, butter, cheese, bacon, and similar products, all of which are associated with farming, but chiefly with those small holdings which it seems to be the earnest desire of both philanthropists and social economists once again largely to establish in our midst. Specially in vegetable farming is there found a large quantity of vegetable refuse, which cannot be more profitably employed than in feeding cows, pigs, and poultry, and recreating manure.

Perhaps the chapters which will secure the closest attention from gardeners are those which deal with flower culture for the production of cut blooms for sale, and also for the purpose of distillation and medicinal uses. In these chapters also may perhaps be found the most debateable matter. Mr. Dunster's selections of market flowers are hardly such as commend themselves to our mind, and he seems in making these selections hardly to have studied the subject practically. Flowers are classified under colours, but with little regard to fitness. Who would embark in the cultivation of Escallonias, Veronicas, Laburnums, Pyrus japonica, and similar shrubs, or grow Hepaticas, Mimuluses, Gentian, and similar unsuitable things for the production of market bloom? Many things which are notoriously popular for market purposes are omitted, and many things named which would be valueless. Of course these defective selections need not detract from the advice given with respect to market flower culture generally, and the author is correct in assuming that there is room for much wider extension of what is even now a considerable industry. On these points the reader is referred to an article on "root-growing" in the present issue. The cultivation of various herbs, medicinal and otherwise, merits attention, especially those available for purposes of distillation. We should like to see that industry largely extended. Taken altogether the book before us is full, not only of suggestion and advice, but of practical instruction. Mr. Dunster stands out somewhat prominently amongst his fellow vicars as a clergyman of broad views and of high aspirations, evidently most anxious to do whatsoever lies in his power to promote prosperity in our rural life, and add to the happiness and welfare of the people.

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Traité de Botanique, Agricole et Industrielle. Par J. Vesque. Paris: Baillière.

M. Vesque commences his book with the reflection that very few agriculturists know the plants that grow in their meadows or can distinguish between those that are useful and those that are injurious. Liebig's assertion, that agricultural students neither know the seeds of grasses, nor the plants that produce them, is quoted with approval, and unfortunately with too much reason. Hence M. Vesque, primarily for the use of his own pupils, and next for the general benefit of those concerned, has compiled a succinct account of the genera and species of economic plants, including under that term those useful in agriculture, medicine, or industry. The classification adopted is partly that of Endlicher, and partly that of Bentham and Hooker, while the grasses are arranged according to the method of Jessen. A description of the genera is given, as well as an account of the respective species, and of the uses to which they are put.

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Cours de Botanique Fossile. Par M. B. Renalt. Paris: Masson, 1885.

The preface to this volume is occupied with an account of the anatomy of Sphenophyllum, on which point the author is at variance with M. Van Tieghem, the latter author considering the structure to indicate a close relationship to Lycopods, while M. Renault is of opinion that Sphenophyllum belongs to a separate type of vegetation, now extinct. The chief interest, however, in this volume lies in the account of the Coniferæ. M. Renault begins with the Ginkgo, describing first the morphology and anatomy of the G. biloba or Salisburia of China, well known in

gardens, and then passing on to the description of no fewer than seventeen fossil species, which show that the genus was well represented in the northern hemisphere in the Miocene of Greenland and North America, in the Oolites of Europe, the Wealden of Germany, and in the Lower Oolite of Australia. Several genera allied to Ginkgo, now wholly extinct, are also described, as well as numerous representatives of the other groups of Conifers. The genus Ve-quia is intermediate between the Yews and the Torreyas and Cephalotaxus. In the Triassic, Liassic, and some portions of the Oolitic periods Conifers seem to have predominated almost to the exclusion of other forms of vegetation. In the coal measures representatives of Yews, Araucarias, Cypresses already existed—a fact which leads M. Renault to consider it impossible in the present state of our knowledge to refer all existing Conifers to one common stock. On the contrary, from the existence at the early period mentioned of well marked groups, and from the absence of intermediate types, M. Renault is led to conclude that our existing Conifers are the descendants, not from one, but from several stocks. The work is copiously illustrated, and is provided with an excellent index.

## ROOT GROWING FOR MARKET.

Messrs. W. & H. Heath, Chequers Green, Southgate.—"What is root growing?" some one asks. "All plants have roots, have they not?" Quite true. [No!] But, in Covent Garden Market the term roots applies to a limited number of plants, mostly of a hardy description, that are favourites with the British public. Which said public, be it observed, has a fixed liking for pretty old-fashioned flowers—such, for instance, as Disraeli describes Lady Corisande's garden to be, full of bright looking, sweet-scented old favourites, that the ever-appearing novelties of the day are never able to supplant in the estimation of the multitude who are fond of a garden, but who know and care little for high-priced rarities. With them such things as Wallflowers, Sweet Williams, Pinks, Pansies, Carnations, Daisies, Lavender, Southernwood, and others of like description, have been known from childhood, and will ever have the preference which their merits, and a life-long acquaintance entitle them to.

There are thousands of homes within the outer circle of the huge metropolis that have small gardens attached to them, and the occupants of these homes derive much pleasure from their gardens. Although cultivation under the attendant circumstances is uphill work so far, that every succeeding spring brings with it the necessity for beginning anew with a fresh lot of plants, through the fact that winter and want of knowledge, with or without the help of the jobbing gardener, have done their work in killing most of the previous years' supply. Thus it is that as each year comes round the root grower is in requisition and never fails being ready with an abundance of the plants required, and which, by the way, are marvels of cheapness, such as nothing but lengthened experience, persistent labour, and undivided attention to a few kinds of plants has made possible. Any variety of the particular kinds of plants that the root growers cultivate, however fine or attractive the individual flowers may be, is useless unless it is naturally a free vigorous grower, and a free bloomer. Every plant that is propagated from cuttings, needs to possess this property, and in the case of such as are grown from seed the strain requires to be alike reliable. With this view Messrs. Heath keep on yearly selecting from amongst their immense stock anything that shows improvement in the quality and quantity of the flowers, combined with freedom of growth. This particularly applies to such things as Pansies, Sweet Williams, Canterbury Bells, Hollyhocks, Wallflowers, Stocks, and Polyanthus, of which, by continual selection of the best to produce seed, a continued improvement in the stock is effected, in addition to which foreign seed of several things to infuse fresh blood is constantly being used.

Messrs. Heath have now 20 acres devoted to the cultivation of the description of plants under notice. It is a moderately free loam, of good quality and sufficient depth, bounded on one side by the Edmonton Brook, which at all times, even in the driest seasons, affords an abundant supply of water, which is indispensable for the successful cultivation of the class of plants in question. For, needless to say, with them time is everything; if anything grown is not ready exactly when wanted, half its value is lost, and unless planting is carried out at the right time the crop will not be ready when required. Consequently, there must be no waiting for rain; if moisture does not come from the clouds horse and hand labour have to supply the deficiency until a crop gets hold, after which it can usually take care of itself, as the quantity of manure used, combined with the naturally good quality of the soil, enables it to do this. A dressing of manure such as would surprise many people is applied before every crop is put in. Long-tined steel forks and the plough are the implements by which the ground is dug and turned over, the operation in this respect being varied according to the time of the year, the condition of the land, and the nature of the crop it is to carry. Of the different things grown some are for sale in the shape of plants alone, others for the production of cut flowers, as well as plants, and others again for cutting alone, such as the summer flowering Chrysanthemums, Dahlias, Sweet Peas, Mignonette, &c. The following are the principal things that are grown in quantity.

### Carnations.

Of these such varieties as the old Crimson Clove, also a scarlet Clove-scented sort, a free flowerer, with full sized, bright coloured flowers. One of the merits of this kind is that the pods do not split. The large white flowered variety, Gloire de Nancy, is likewise a great favourite. It is a good grower and a free bloomer, the flowers are Clove-scented and about two-thirds the size of Souvenir de la Malmaison. Other free-growing sorts are grown, but only self-colours, no flaked or edged varieties. Pinks are also in quantity; of these Mrs. Sinkins a full-sized white kind, the best forms of the pheasant-eyed varieties, with a selection of the best of the mule Pinks. From 2 or 3 acres of these are grown for plants as well as cutting.

### Pansies,

from seeds as well as from cuttings. The latter are obtained from the many beautiful varieties that have appeared here in past years. The strain has much in the way of bright colours and size of flowers that the Belgian varieties possess, with the substance and form of the English show sorts, combined with a vigour of growth which most of the exhibition varieties are so deficient in. Of these 1 to 1½ acre are grown.

### Wallflowers

of the best dark market variety occupy about half an acre. They are transplanted from the seed-bed before they get crowded, so that when ready for sale they are close and compact.

### Sweet Williams.

Of these the green-leaved, as well as the dark leaved form, which is so much in favour in the market, cover about half an acre. The strain is so good that scarcely an inferior flower is to be met with in the long beds they occupy.

### Canterbury Bells

are remarkable for their profuse disposition to bloom, as well as the size and varied colour of the flowers. A quarter of an acre of these is the usual complement.

### Veronicas.

Only one form of these plants is grown. It is a dwarf grower, with small leaves, that keeps on blooming from the beginning of July up to the end of the year, as a few degrees of frost do not stop it. The flowers are deep purple. It is struck from cuttings in winter, lifted and potted as required. The stock occupies from one-fourth to half an acre.

### Summer-flowering Chrysanthemums.

These are grown in quantity, representing the different coloured varieties that commence to flower soon after midsummer, and keep on until the general representatives of the family begin to bloom.

### Dahlias

occupy an acre or more. They are confined to such kinds as are distinct in the appearance of their flowers, and can be induced to come in bloom early in July. The sorts that are found to possess these properties are Peacock, maroon, tipped with white; John Bennett, yellow, edged with red; Duke of Edinburgh, yellow; Princess, white; Guiding Star, white pompon; Rising Sun, scarlet; Dr. Webb, scarlet.

### Sweet Peas.

Of these the red and the white varieties alone are grown, to the extent of a quarter of an acre.

### Double Feverfew.

This in considerably quantity is also grown, for the flowers alone.

### Asters,

in such varieties as the Victoria, and the Chrysanthemum flowered, are sown at intervals that will keep up a regular supply in bloom from the end of July up to as far in autumn as the weather will permit. A large portion of these are transferred to pots when in bloom, and others are sold in a cut state. Quite an acre are grown, and in keeping with other things their cultivation is such as to bring them out in the best possible condition.

### Ten-Week Stocks

of an excellent strain take the place of some of the earliest cleared crops, so as to keep up a succession until frost comes. The flowers of the earliest are cleared off before the last batch are planted out from the seed beds.

### Hollyhocks.

A quarter of an acre of these are raised annually from seedlings. As regards the seedlings most dependence is placed on home sown seed as with the careful selection practised good double flowers can be relied on.

### Phloxes.

White, purple, and red varieties, raised annually from cuttings, are grown to a similar extent to the Hollyhocks.

### Polyanthus

from seed and Delphiniums have half an acre between them.

### Thrift, Lupins, Lychnis, and Daisies,

red and white, collectively cover about half an acre.

### Creeping Jenny,

which is so much in favour for edging window-boxes and vases, as well as for growing by itself in pots, is grown in immense quantities. It is propagated from small cuttings, and has 1½ acre to itself.

### Mignonette,

of which Messrs. Heath have one of the best varieties I have ever met with, is remarkably well done. A large breadth of this is cultivated to give flowers from as early as it can be had in the season up to the time when frost puts an end to outdoor flowers.

### Southernwood, Lavender, Herbs, &c.

both struck from cuttings put in in cold frames early in spring, and planted out in summer, to be grown on for the season following, conjointly occupy half an acre.

A good breadth of herbs of different kinds is grown, and occasionally, when a piece of ground is cleared, and is not immediately wanted for roots, a crop of Potatos or Peas is put in, which gives a change to the land. The course followed is never to to let any part of the land lie idle. During the spring and summer it is a rare occurrence for a week to elapse between the clearance of one crop and another being put in. Cleanly cultivation is systematically carried out; as soon as the weeds vegetate the hoes are set going, so as to destroy them before they have time to get any size, or take much out of the soil. The situation is open, with nothing in the shape of trees to shade or lessen the free circulation of air amongst the various crops cultivated, which, combined with enough space being allowed to every plant that is grown, insures the stock being strong and robust—a condition that in these times of keen competition makes an appreciable difference in the prices realised.

Over an acre is covered with glass, which is mostly in the shape of low long span-roofed houses and pits, wherein are raised vast quantities of plants from seeds and cuttings. A number of houses are filled in winter with bedding plants, of which immense numbers are grown; as soon as they are cleared off the houses are occupied by Cucumbers—Rollisson's Telegraph is the sort principally grown.

Needless to say a large amount of labour is required all the year round to keep pace with the go-ahead rate of production that is followed. Without seeing the boxes that are got through in marketing the stock each year, it would be difficult to credit the

quantity. They are piled up in the yards and about the packing sheds like stacks of hay. One man is employed the whole year round in converting Orange and other packing cases into boxes of the different sizes used, and keeping them in the necessary repair. *T. B.*

## NATURALISATION OF ORCHIDS.

THE recent conference on Orchids, and the very extensive literature connected therewith presented to readers of the *Gardeners' Chronicle*, will, I believe, stimulate attention to this beautiful and interesting order of plants throughout the world. In the colonies we receive, after all, our impulse very much from home; and many a botanist engrossed with other studies will be tempted, by seeing and hearing so much of Orchids, to give them more attention than, possibly, they have lately received at his hands, to the manifest advantage of both himself and his collections.

In Jamaica we have not many Orchids of great beauty and value. We have Broughtonia sanguinea, Oncidium pulchellum, O. tetrapetalum, O. variegatum, Bletia Shepherdi, Zygopetalum cochleare, Stenorrhynchus orchioides, Arpophyllum spicatum, Lælia monophylla, Schomburgkia Lyonsii, Comparettia falcata, Ionopsis utricularioides, Epidendrum fragrans, E. variegatum, E. verrucosum, Brassia caudata, B. maculata, and Phaius grandifolius, all of which are interesting and beautiful in their native haunts, or when cultivated in large quantities in the open air, on trees, in pots, or in hanging baskets. They do not, however, obtain much favour at home, as many are difficult to maintain under prolonged cultivation; and hence the more showy Cattleyas, Lælias, and Odontoglossums are in request, to the exclusion of their less attractive though by no means less interesting brethren.

There was one interesting point which, I believe, was not touched upon at the Orchid Conference, and that was the naturalisation of Orchids; under which head might be discussed the extent to which certain Orchids of temperate and tropical species have become practically wild in a country not their own.

Perhaps by bringing up the subject in your columns it may lead to an examination, and possibly to the preparation of a record of instances in which Orchids, both terrestrial and epiphytal, have broken the bounds of cultivation, and, following the example of numerous other exotics, have succeeded in establishing themselves amidst the environment of a new country.

The Orchid last named on the list given above (Phaius grandfolius) is an instance of an East Indian terrestrial Orchid which has become thoroughly naturalised in the West Indies; and it is now found growing freely in the bush and "ruinate," and sometimes even in the forest on the hills of Jamaica at about 2000 feet to 4000 feet elevation. Gosse, I know, in *A Naturalist's Sojourn in Jamaica*, throws some doubt upon this plant being introduced, and mentions that "the lone humid forest at the summit of Bluefields Peak does not certainly seem a very likely locality in which to find a large and beautiful flower escaped from a garden." Grisebach (*Flora Brit. West Ind.*, p. 622) solves any difficulty that may have arisen in his mind on the subject by giving the habitat of this plant as extending to Tropical America —practically, therefore, making it a native.

If we had nothing authentic and reliable as regards the introduction of this Orchid we might be compelled to give a verdict of "not proven." But in turning over the leaves of an old list called *Hortus Eastensis, or a Catalogue of Exotic Plants in the Garden of Hinton East, Esq., in the Mountains of Liguana, in the Island of Jamaica*, by Arthur Broughton, M.D., published *circa* 1793, I find that "Limodorum (Bletia, R. Br.), Tankervilliæ, or Chinese Limodorum," is recorded as having been introduced to Jamaica by Hinton East in 1787. This is Phaius grandifolius, Lour., which was also introduced to England in 1778* (Puydt, *des Orchid.*, p. 15). Neither Hans Sloane (1696—1725), Patrick Browne (1756), nor Swartz (1797—1806) mentions this plant; and these accurate observers could hardly have omitted so conspicuous and handsome a flower if it had been accepted as a member of the indigenous flora of the island in their time. Hence, therefore, Phaius grandifolius is undoubtedly an instance of a terrestrial Orchid, a native of the East Indies, which has become naturalised in the West Indies.

An incident came under my notice about three years ago which would point to the probability that Schomburgkia tibicina, the "Cowhorn" Orchid of British Honduras, often cultivated in gardens here, has also become naturalised in the island. A plant of this species in flower was brought to a friend of mine by a negro, who stated he had found it growing wild on a Calabash tree at the foot of the St. Andrew Hills. The locality indicated was not far removed from the site of Hinton East's old garden of 1793; and it is therefore quite possible, although the fact is by no means properly established, that it may have been an escape from thence. When we consider the quantity of seed produced by such plants as Phaius and Schomburgkia, and the favourable agencies of wind and birds which exist for their distribution, it is not at all surprising that, under conditions somewhat resembling or approaching those which obtain in their native country, Orchids, as well as other plants, should become established and flourish in places far removed from their original and recognised habitats.

This question of the naturalisation of Orchids is, I trust, sufficiently interesting to attract the attention of colonial and other botanists, and I would venture to suggest that it may very fittingly be pursued as one of a series of subjects naturally suggested by the papers and discussion at the late Orchid Conference. *D. Morris, Jamaica, July 6.*

* For synonymy I quote the following from the *Gardeners' Chronicle* of 1882, vol. xviii. p. 565:—"Phaius grandifolius, Loureiro, Rchb. f., *Walp. Ann.*, vi., p. 459; *Bot. Reg.*, 1839, Misc., n. 403; Benth., *Fl. Austr.*, vi., p. 434; *Fl. des Serres*, vii., t. 738 (var. superbus). Bletia Tankervilliæ, R. Br., *Bot. Mag.*, t. 1924; Lodd. *Bot. Cab.*, t. 22. Limodorum Tankervilliæ, Ait., *Hort. Kew.*, ed. I., iii., p. 302, t. 12; L'Herit., *Sert. Angl.*, t. 28; Andrews, *Bot. Rep.*, t. 426; Schneev., *Ic.*, t. 52; Redouté, *Liliac.*, t. 43. Pachyne spectabilis, Salisb., *Trans. Hort. Soc. Lond.*, i., p. 299. P. australis, P. leucophæus, and P. Cattoni, F. Muell., *Gard. Chron.*, 1872, p. 732, fig.—China to Australia. This grand Orchid was introduced from China in 1778 by Dr. John Fothergill. Flowers white without and chocolate within, with some rose and yellow in the labellum. Hort. Kew."

## ARCHITECTURE AND LANDSCAPE GARDENING.

IN the course of his lectures on the above subject (from which we gave some extracts in a previous number), Mr. G. Richards Julian, A.R.I.B.A., after describing the history and characteristics of the Romanesque style of architecture, and more especially the form of it which took root in our own soil, and is known as the Norman style, referred to the new Natural History Museum at South Kensington. He said of this building that it was, although freely treated, imbued with much of the spirit of the Norman style and ornamented with many of its details, and continued:—"I recommend all the details of this great building to your careful notice, but I have more especially alluded to it, because you will find on the staircase and in the arcades of the gallery in the great hall, which is, I believe, called the Index Museum, excellent suggestions for the appropriate treatment of balustrades and piers in harmony with Romanesque building. For further suggestions we must go to the ornamental wall arcades of Norman buildings."

After tracing the rise of the successive styles of Gothic architecture and their distinctive mouldings and ornaments, particularly the various English forms known as the Early English, the Decorated, and the Perpendicular, the lecturer devoted some time to a special notice of Domestic Gothic, and of the half-timbered houses of which examples are to be found, ranging from the fourteenth to the sixteenth centuries.

Passing to the consideration of garden architecture he said:—"We shall obtain the best suggestions for the proper treatment of terrace walls or balustrades to harmonise with Gothic buildings by a study of the parapets which we find on the old churches and cathedrals. For this purpose I have prepared a sheet of illustrations of such parapets of different periods.

"In all the periods of English Gothic work embattled or battlemented parapets are to be found, but such examples will evidently not suit our present purpose. Battlements appear absurd except when crowning a wall of considerable height, and although used in later Gothic work purely as ornaments, always suggest preparations to receive a warlike attack; another reason for avoiding the use of anything like a battlemented top to a terrace wall is, that, even if the coping is no intended to be leaned upon by those looking over it, no uncomfortable suggestion that it is not to be so used should be apparent. There are, however, examples of ornamentally panelled parapets even in the Early English period when perfectly plain parapets with a plain unbroken coping were the rule; one of these, from Salisbury Cathedral, I have illustrated. Other early parapets are pierced with trefoils, quatrefoils, &c., and such forms may most appropriately be used to accompany any building the details of which are of early character. A series of small pointed and cusped arches carried on diminutive columns such as I have shown in the Gothic balcony from Venice, or similar small columns with either carved or moulded capitals (or both used alternately) and carrying the coping without any arches, as used by Mr. Street in the walls around the open areas of the New Law Courts, will harmonise with Gothic buildings, if the details of the mouldings and carving and the outlines of the arches are appropriate in style.

"In the Decorated period parapets were ornamented both by panellings and by piercings; trefoils, quatrefoils, and other geometrical forms being used. I have drawn an example of one from St. Mary's Church, Oxford, but of course many pleasing arrangements of geometrical forms can be made which would be appropriate. In the later part of this style the piercings of the parapets, like the window tracery, formed flowing lines, one very common form being that in which the leading line of stonework forms a continuous undulation.

"The parapets of the Perpendicular period are often extremely rich in detail, either when panelled or when pierced. In early examples quatrefoils were used as in the example from St. Peter's, Oxford, but it will be observed that a vertical line is introduced between the quatrefoils—forming small triangular panels in the four corners—and this is a distinctive mark of Perpendicular treatment. In later examples, such as those of the Tudor period, the decoration of parapets was similar to that of the panelling on the walls, reproducing the window tracery of the period in miniature.

"In most of the existing examples of terrace walls of mediæval date the treatment is a perfectly plain wall with a saddle-backed coping, having a large roll on the top, but this is no reason why we should not make them as ornamental as the means at our command allow, provided that they be designed to harmonise with the building which they adjoin. A safe rule is, to make the window tracery of the period suggest the forms of arching and of piercings." [See Supplementary Sheet.]

## THRINAX GRAMINIFOLIA.

THIS elegant Palm is recommended by the Compagnie Continentale of Ghent as eminently suitable for indoor use and table decoration, as indeed the figure for which we are indebted to the Compagnie, fully shows (fig. 29). The leaves are fan-shaped, divided into very narrow segments, and raised on long, slender, spineless stalks.

## AYAPANA.

M. LOUIS BOUTON, in his *Medicinal Plants of Mauritius*, gives the history of this plant, which, in answer to a correspondent, we translate as follows:—

"Captain Augustus Baudin, brother of him who commanded the expedition round the world, brought this plant to Mauritius in 1797. Being at Rio Janeiro, and hearing the Ayapana spoken of as a panacea, he tried by all possible means to obtain cuttings, but could not succeed in purchasing any. He then resolved to carry away during the night a plant placed in the balcony of an inhabitant of this town; which he did skilfully by the aid of a sailor armed with a ladder, and, the ship having set sail immediately, he escaped with his treasure.

"This plant (Eupatorium Ayapana) was introduced from Brazils by Captain Baudin towards the end of the last century, bringing with it the highest reputation. It was thought that the universal panacea had just been discovered, and the sick flocked from every part of the island to Pamplemousses Gardens, where the plant was deposited, thinking they had found a remedy for all their ailments.

"Its success lasted pretty long, but when the reaction came people jumped from one extreme to the other, as is generally the case when the first rapture is over. When once the plant had been experimented upon and analysed at Paris, people attempted to prove that it possessed no energetic virtue of any kind. 'Its smell is certainly aromatic, but to an inferior degree. It is the same with its bitterness. It possesses slight astringent properties, but all so slightly that it is difficult to believe that it can produce any effect upon the animal economy.'

"Nevertheless the Ayapana has continued to occupy a high rank in the list of our medicinal plants. It is daily used in the shape of tea in difficult digestion and derangement of the chest and bowels. The leaves, bruised and lacerated in honey and wine, form an excellent topical application for wounds, bruises, and sores, both for man and beast. We all know how extensively the plant was used during the cholera in 1854 and 1856. Dr. Gouly recommended it to restore the circulation and combat the coldness which supervenes in this dreadful malady; and Dr. Perrot relates that Ayapana enters into the composition of a remedy which has been used in cases of cholera previous to the blue stage."

## COLONIAL NOTES.

Ranunculus Lyalli.—I give willingly the information requested by a correspondent, so far as in my power, as to the habit of this interesting New Zealander. Hooker's designation, in his *Flora*, of Water Lily, so far as has ever come under my extended observation, is certainly misleading, as I have never seen it growing in water or even marshy places, nor have I ever heard it so called by any other having any acquaintance with the plant. In every place where I have seen it growing naturally the soil was dry and plentifully mixed with gravel and stones. On a journey which I made during February last overland to Jackson's Bay on the west coast I came on it pretty frequently. On Mount Roy, at the foot of Lake Wanaka, I could not find a single plant, but on the sides of the Minaret Peaks, a few miles higher up the lake, I found it frequently. On a little island in the centre of the lake I also obtained some. On the whole way up the Makarori Valley, which extends from the head of the lake, I did not see a single specimen, nor did they again appear till the Haast Pass was crossed and the bed of the Fisk River followed down for about 2 miles. Here they were growing freely in very little soil on a bed of shingle, and although they would certainly be covered during a flood, they were then a few feet above the level of the stream. The lowest altitude at which I found them would be about 800 feet, Of course the best time of discovering a bed of the Lyalli is during December and January when in full flower, as it then can be noticed at a considerable distance owing to its dazzling white. In a cultivated state I have seen it growing splendidly, almost at sea level, and close to the water of the bay at Port Chalmers, in rich loamy soil. At Dunedin it grows in sandy or gravelly soil in the low-lying gardens, and on the stiffish clay on the hills: it also flowers freely. In my own garden, which is rather peaty in character, I have grown it for several years, but did not succeed in getting it to flower; this may have arisen from the soil containing a good deal of salt, as it was in former days covered by the sea, and even now the water, a few feet down, is brackish in taste. In not one of our gardens where the plant is grown does it receive any extra attention or care; it is exposed to the bright glare of the sun, to the winds which sometimes blow rather strong, and to the sharp frosts which frequently occur.

We have amongst our flora several other Ranunculi, which are also well worthy of introduction and cultivation in British gardens, but none of them so excellent as Lyalli.

The journey from Lake Wanaka to Jackson's Bay is one of great interest, and at the time I made it of adventure. The distance is not great, about 90 miles, but the character of the country is grand in the extreme. There had been a track cut down to the Haast Mouth, but the native bush and Fern had grown up and quite obliterated it, so that it was somewhat difficult for man or horse to push through. Three to four miles an hour was a good record, and as there are no habitations, the traveller must conclude to rough it, and make his bed amongst the Ferns. To give an idea of the appearance of the country is not easy. It is an irregular confusion of mountains, piled up to varying heights, of every conceivable shape, intersected by dark and gloomy ravines, cascades and waterfalls tumbling over in all directions, and of wonderful shape; glaciers of immense size hanging over, and at any time ready to fall sheer down thousands of feet; rivers and streams foaming along in their rocky beds; and everything on such a scale as to constantly suggest man's own littleness. Generally, the mountain-sides are clothed up to irregular heights with bush and trees of different varieties, displaying a gorgeousness of foliage perhaps nowhere else to be witnessed. These primeval forests are mostly composed of the Fagus family, here popularly called Birch. The timber of these trees is not much valued for any purpose. There are, however, a few representatives of Coniferæ to be seen here, and these embracing Libocedrus, Podocarpus, and Dacrydium. The P. Totara and D. cupressina now are most numerous, and very highly prized.

Among the smaller trees or bushes the more noticeable are Plagianthus Lyalli, which skirts the lower edge of the forest, and was at the time in truly magnificent bloom. It was indeed worth the fatigue to have a look down or up one of the glens and see the contrast between the varied hues of green, with here and there a dazzling scarlet-flowered Metrosideros lucida, commanding admiration, asserting its right to the tallest and most prominent position, and the base fringed with the more modest but not less beautiful Plagianthus, a snowy wreath corresponding with bleak hoary-headed top.

One peculiarity I noticed among the smaller vegetation, namely, that the Aciphylla Colensoi, called with us Spear-grass, and which I saw illustrated in the *Gardeners' Chronicle* some time ago, does not extend, at least on this route, beyond the lake. It was common enough all the way up, but on the western slope was not to be seen. Its place was, however, taken by the Matagourie (Discaria), another prickly shrub, of which horses are very wary. The common Thistle, too, has been introduced, and takes possession, growing to a height of 6 feet, and of it horses have a perfect dread; both in the bush and in the open it is a thorough nuisance. Many other plants might be alluded to if space permitted; suffice it for the present to name the Veronica, of which there is great profusion; Astelias, attractive and interesting; Cordylines, of which I came across a species not known on the eastern side, and known as Gika, the leaves of which when pulled will stretch like a piece of india-rubber, and its berries are much sought after by children for eating.

Among the Filices the varieties were great, the most conspicuous being, in addition to the Cyatheas, Gleichenia Cunninghami, standing to a height of about 2 feet, the fronds branched out, regularly covering a space of nearly an equal diameter, and justifying our popular name of Umbrella Fern; Trichomanes reniforme, growing profusely on rocks and tree trunks; Lindsæas, Cystopteris, Davallia, and Adiantums; but on the whole my attention was most attracted by patches of Gentiana growing on the accessible mountain tops, known to us as our Snowdrop and Daisy. They are in their native habitat a sight to be seen and never forgotten. Then again the Coriaria ruscifolia with its curious shade of green leaf and its long clusters of berries inviting enough to be eaten and can be used with impunity, provided the seeds are not swallowed, as they are known and have often proved decidedly poisonous. *J. M'Indoe, Dunedin, New Zealand.*



Fig. 29.—Thrinax graminifolia. (see p. 140.)

### Improvised Lawn Rollers.

There are as enthusiastic lawn tennis players at hill stations in India and the West Indies as in any part of the world. But what is a lawn without a lawn roller? As many places where lawn tennis is played (and where good gardens are also kept) are connected only by bridle roads, and pack animals are the only means of transport, the usual iron lawn roller is a luxury to be wished for, but not always realised. A very simple and efficient lawn roller may, however, be made, as a friend of mine made one the other day, out of the section of a steam-engine chimney. This was a piece of tubing 14 inches in diameter, of sheet iron ¼-inch thick, and about 3 feet long. An axle was first of all fixed in the centre and the whole well filled by a packing of concrete. A roller on the same lines, but without the outer sheeting of iron, was made here some time ago, and has proved most serviceable. A mould was made of White Pine slats, 1½ inch wide, fixed in a frame so that the inner space was exactly the size of the roller required. A piece of well seasoned hardwood was squared and fixed carefully in the centre to serve as axle; and the mould was then filled with concrete and rammed so as to form a compacted solid mass. The concrete was made of one third Portland cement, one-third sharp sand, and one-third small angular stones the size of a pigeon's egg, called here "grouting." After trimming the

projecting ends of the axle and fixing a frame and handle, we had for a few shillings a roller weighing about 6 cwt., as efficient as if it had cost as many pounds. *D. Morris, Jamaica, June* 13.

## Foreign Correspondence.

### FLOWERING AGAVES IN HOLLAND.

IN the winter garden at the establishment of Messrs. E. H. Krelage & Son, Haarlem, Holland, there is at present a fine plant of Agave filifera about to flower. On July 7 the flower began to develope, and at present it is nearly 2 metres high, so that it makes in twenty-four hours a growth of 10 centimetres (4 inches). Of this Agave, two specimens are reported to have flowered in 1872 at the Veelzigt Garden, near Zeist, and about the same time in the Botanical Gardens at Utrecht. An Agave americana is in flower in the gardens of Reelwig, at Viect, the property of Mrs. Slingsby van Hoven. It has a flower-stem of 3½ metres in height. In the summer of 1879 at the Mantanoud Wassenaar, near the Hague, the property of Mr. C. J. Vander Odermeulen, there flowered two Agaves, viz., A. filamentosa or longifolia, and A. xalapensis. In 1875, in the Botanical Gardens at Groningen, there was in flower an Agave americana foliis luteo-hirsutis with a flower-stem of 7 metres, with 5000 blooms. The age of this plant was proved to be at least eighty years. In 1873, in the gardens of his Royal Highness the late Prince Henry at Soeltdijk, there flowered an Agave americana with a flowering stem of 6 metres, with twenty-eight branchlets. In 1875 an Agave xalapensis flowered at Lommerliest at Baarn, the property of Mr. C. A. A. Dudok de Wit, of Amsterdam. It had a flower-stem of 3.25 metres.

In private collections in the Netherlands there are many fine and large plants of Agaves; so that in the years which follow fine summers, and which are favourable to the flowering of Agaves, flowering plants may be expected here and there.

Among all the Dutch collections of Agaves the best is, without doubt, that of the Zoological Gardens at Rotterdam. This collection was presented to the gardens by Mr. T. de Jonge van Ellemeet, of Oostkapelle, near Middelburg, in 1874 and 1875, and consisted then of about 300 fine and large plants. Mr. de Jonge van Ellemeet, who was a friend of the late Professor Dr. Karl Koch, at Berlin, and of General van Jacobi, had formed a collection of Agaves, one of the best in Europe, as it may be yet at this moment. In this collection there flowered in 1875 several fine specimens, viz., two plants of A. chiapensis, with stems of 1.60 and 2 metres; one plant of A. uncinata (Jacq.) or densiflora of Belgian gardens, with a stem of 1.20 metres; a plant of A. Celsiana (Hook.), with a stem of 80 centimetres; an Agave Ellemeetiana (Jacobi et Koch), with a stem of 2.23 metres; and an A. dealbata, with a stem of 2.50 metres; besides plants of A. schidigera (Lem.), and A. dasylirioides (Gaert.). In many instances the growth of the flower-stems was about 10 centimetres in twenty-four hours. *J. H. Krelage, Haarlem, July* 25.

## AN OLD-FASHIONED GARDEN.

THERE is a charm and fascination about an old-fashioned garden, a picturesque suggestiveness of bygone times, an old-world look of peace and plenty and stability about it that modern gardens seem to lack. Subtle odours, too, are afloat in and around it, Lavender and Lad-love are there, with Thyme and Marjoram, Cabbage Roses, Honeysuckle, and Musk, Cloves and Gillyflowers. Then the prim hedgerows of Privet and Yew form such effective background of sombre greens against which those stately obelisks of glowing colour, the Hollyhocks, stand out so grandly. There is such an old garden hard by, sheltered by the hill, on which stands the church, and on the north, east, and west, by belts of trees — Chestnuts, Elms, and Scotch Firs, which will ere long, perhaps, be a green oasis in a region where artificiality will be supreme. It consists of a couple of acres of garden, and three of pasture land. The lady whose property it is, has resided on the spot for upwards of half a century. She deserves the thanks of the neighbourhood for still holding it, inasmuch as land, at that time worth a hundred pounds an acre, would now sell readily for twice as many thousands. I have just been walking round it with the head gardener, Mr. Gough, who seems to take as much interest as the good lady herself in its successful management. There is no stint of manure, but the enormous crops of fruit and vegetables grown are owing chiefly to the persistent application of well directed labour. Ten feet walls bound the principal kitchen garden on the east and south. On both of these there are large crops of Peaches and Nectarines, Apricots, Plums, Figs, and Pears. On the east wall both Peaches and Apricots do well, though they miss the sun entirely by 12 o'clock. A singular circumstance occurred with regard to a Buckland Sweetwater Grape on this wall. Year after year the crop was mildewed badly and consequently worthless. It was found necessary, however, to make a doorway in this wall, and since (for two years) there have been heavy crops of fine fruit. In the same aspect, on the blackened boards of an old stable, Black Hamburgh Grapes have been grown sufficiently fine to compete with those grown under glass. There is always something to take note of in a good all-round garden, though the note may sound flat to a professional gardener. I could not help but compare my Telegraph Peas with those I saw here: had I put in a tenth of the seed actually planted, so much the better; it would not have been merely the saving of seed, but the weight and quality of the crop. The seeds in this case were planted zigzag, 4 inches apart; the haulms and foliage were remarkably strong and healthy. Reverting a moment to open-air Grapes, a white Muscadine was planted in front of an open, tiled shed, trained up a support; a branch by accident straggled under the tiles, and on this was one capital bunch of Grapes, the others were worthless; the branches are now every year drawn back into the shed, and ripen the fruit nicely. In planting new beds of Strawberries, three plants are invariably put in together, and whenever there happens to be a barren one it is at once removed. Raspberries are grown trained to three strands of iron wire stretched between 6-inch Larch poles 4 feet high; by this means the canes are exposed to sun and air, and the fruit more conveniently gathered than when trained to stakes in the ordinary way. This is altogether a most interesting old garden, especially rich in herbaceous plants, among which we noticed some fine plants of Pæonia moutan. In the little conservatory adjoing the drawing-room I noticed some plants of Vesuvius grown in 14-inch pots to cover a back trellis; they were between 8 and 9 feet high and very effective. Though only, perhaps, 30 yards from a busy metropolitan station on one side, and bounded by high roads on the other two, the good lady has managed to preserve the birds. Wood pigeons build close to the house, and their young feed on the lawn, while blackbirds and thrushes all day, and nightingales all night long, keep up their chorus of sweet songs. The air for some weeks since was loaded with the fragrance of blossoming fruit trees, Wallflowers and Stocks; afterwards filled with the sweet odours of Lilac-tide. The only fruit that has suffered in this neighbourhood is the Plum. There is promise of enormous crops of Apples, Pears, and wall fruits, and there will be in all probability abundant supplies of small fruit. *T. W., Harrow.*

## Orchid Notes and Gleanings.

### AËRANTHUS LEONIS.

REFERRING to the "curiously curved nectary" of this new species it is stated at p. 80 that the moth must have a very long and flexible proboscis that can reach the nectar at the lowest point. On referring to the plate, however, it will be observed that in every case the end of the nectary is higher than the curve, which would cause any viscid substance to drain to that point which is the lowest, and in that case the proboscis of any insect could easily reach it. *J. Douglas.* [Why didn't we see so obvious a fact? ED.]

### CATTLEYA MAXIMA BACKHOUSII

is a dwarf compact evergreen plant, having pale green stems and foliage, in which peculiarities it is distinct from all others. The sepals and petals are of a light magenta, and the lip is of the same ground colour, but distinctly veined with deep magenta-purple. It blooms after the growth is completed from a sheath of the just matured stem, the flowers being produced during the winter and spring months, and continued in beauty for two or three weeks. This variety comes from Peru. *Orchid Album*, t. 193.

### ODONTOGLOSSUM HEBRAICUM.

An evergreen plant, the foliage and pseudobulbs being of a pleasing green colour. The flowers proceed from the base of the bulbs on scapes some foot or more in length, after the growth of the pseudobulbs has been completed, and are borne in panicles. The sepals and petals are a pale yellow, distinctly spotted in a curious hieroglyphical manner with chocolate-brown, and the lip is of the same colour, with three or four irregular blotches in the centre. It blooms in winter, and requires the same treatment as O. crispum, *Orchid Album*, t. 194.

### BARKERIA ELEGANS.

A deciduous plant, with upright slender stems, with light green foliage; the flower-scapes proceed from the top of the stem. The sepals and petals are of a delicate blush lilac, and the lip is white, with a large deep magenta blotch on the fore part. It blooms in early spring. *Orchid Album*, t. 6195.

### CYPRIPEDIUM SCHRODERÆ.

A garden hybrid described in these columns, xix, 432. It is an evergreen Orchid, with light green foliage. The flower-stem proceeds from the centre of the young growth. The dorsal sepal is of a pale yellow hue, tinged with dull red, the petals dull crimson, lighter towards the base, and the lip dull crimson, densely spotted in the interior. It blooms in December. *Orchid Album*, t. 196.

### CATTLEYA NOBILIOR VAR. HUGUENEYI.

Leaves ovate acute, flowers flat stellate, sepals oblong acute, petals ovate, dull lilac, lip projecting, 3-lobed, lateral lobes rounded, erect, anterior lobe spreading, 2-lobed, yellow, with a broad lilac edge. *Lindenia*, t. 5.

### CYPRIPEDIUM DRURYI.

Flowers solitary, sepals oblong, yellow with a central narrow band of reddish-purple, lip bag-shaped, yellow. Southern Mysore. *Lindenia*, t. 6.

### EPIDENDRUM PANICULATUM.

A handsome species with sessile amplexicaul oblong acute leaves; flowers lilac-rose, numerous, in terminal erect pyramidal panicles. *Lindenia*, t. 7.

### PHALÆNOPSIS STUARTIANA VAR. PUNCTULATA

differs from the type in the markings of the flower being more distinct, and the carmine-yellow colouration of the lip much brighter. The figure was taken from a plant which flowered in the establishment of the Compagnie Continentale, at Ghent. *Lindenia*, t. 8.

## FORESTRY.

### WORK FOR AUGUST.

As this month brings but little special work for the forester, every opportunity should be taken to forward all general woodland operations, and upon land intended for autumn planting, so that these may be well in hand before the busy planting season actually sets in.

Enclose such ground as is to be planted during the coming season, and have the same cleared of all Gorse, Brambles, and other herbage, drained and trenched where necessary, and the making of roads, pitting, cartage of material, and all other necessaries, well in hand as time and other circumstances will permit.

### TRANSPLANTING.

The transplanting of evergreens may be commenced during the latter part of the month, choosing dull, damp weather for the operation. If properly attended to this will be found a successful month for the work, and greatly to be preferred to a later period. Preparations for layering should now be made, pegs cut, the ground loosened around such stools as are meant to be layered, and the work taken in hand towards the end of the month.

### THE NURSERY.

In the nursery little can now be done, for the keeping of weeds in bounds will occupy most of the spare

time. Bud Hollies, Chestnuts, and Thorns, and pay attention to recently grafted and budded trees, so that the bandages may be loosened and all shoots rubbed from off the stocks where required. Cuttings of evergreens that are propagated in that way should be inserted towards the end of the month or beginning of next. Choose a loose soil of rather a peaty nature, and add a plentiful supply of clean sharp sand, which will induce free rooting and prevent damping off. Vacant ground should be kept well stirred; and also the spaces between lines of young plants. Clear drives and walks during dry, warm weather, and where weeds are extra abundant a sprinkling of salt or small quantity of carbolic acid will greatly assist in keeping these in bounds.

GENERAL WORK.

Mow grass and rubbish growing alongside drives and walks so that seeding may be prevented; and attend to all overhanging branches that are likely to interfere with the traffic. When time permits have all timber that is intended for home consumption carted and stacked near the saw-mill, while it can be removed without the grit and dirt which adhere to it in winter, and which, not unfrequently, does so much injury to the machinery used in its conversion.

Fences will still require attention, indeed the work of the fencer is much alike summer and winter. Tree guards should be frequently examined, as where young horses roam at will injury is of by no means unfrequent occurrence. The tarring of fences, gateposts, &c., may still be prosecuted, especially when the weather is warm and dry. In parks and other inclosures cut off such branches as the cattle have barked or are in any way likely to interfere with. Prune dead branches from park and lawn trees, remove rival leaders, and keep within bounds such shrubs as are likely to infringe on Coniferæ in their close environ. Draining, levelling, and road-making may be taken in hand, while hedging, thinning, and charcoal-making are now well advanced. *A. D. Webster, Penrhyn Castle, North Wales.*

# Plants and their Culture.

STOVE FINE-FOLIAGE PLANTS.

As soon as there is a spare corner in the propagating pit (or any substitute that is made use of instead of this useful adjunct) the opportunity should be taken to strike some well coloured shoots of Crotons, which ought now to be had without any difficulty. The advantage to be derived from propagation at this season is that young stock of sturdy growth, retaining their foliage even from below the level of the soil in which they are struck, can be obtained without difficulty and with but little or even no artificial heat. Straight shoots with the foliage well balanced should be chosen, and those of the brightest variegation always preferred. The pots known as long 60's are best for these cuttings, out of which, when well rooted, they can be shifted into 4 or 5-inch pots according to the size and vigour of the plant. After this shift, and when the plants are become well rooted, they will be fit for decorative uses; and, considering the rapidity with which this can be brought about, there is no subject can equal the Crotons when well grown. The selection of good cuttings is of great importance in the earlier stages of cultivation of any shrubby plant, but is perhaps more apparent in that of Crotons than in any other stove plant. After being established in their first shift, water may be applied to the roots almost without stint, and a free use of the syringe must be made to keep in check insect pests. Crotons are something like Willows, and delight in an abundance of moisture, they, however, require free exposure to the sunlight in order to intensify their beautiful colorations and to retain a compact habit of growth. On no account must they be allowed to suffer for want of water, or the loss of the lower leaves will ensue; some liquid manure or artificial stimulant should frequently be used when the plant has become pot-bound. *J. Hudson, Gunnersbury House, Acton.*

# Fruits Under Glass.

MELONS.

Ripe Melons can be obtained late in the autumn months by sowing seed of them about the 1st of August. We have on several occasions done this and secured merely a fair crop of ripe fruit, but this is owing to the waning sunshine, and kindred causes which tend to impair the size and reduce the quality of the fruit. We have abandoned the raising of this crop altogether as being scarcely worth the time and attention it involved, and for our latest we now, as a general rule, sow the seeds about midsummer-day. With the usual treatment, these plants are now, July 27, ready to put into fruiting pots or beds, as the case may be, and with ordinary management the crop of Melons on the plants will be ripe at the end of September, or thereabouts. It is expedient to employ for this crop a house which will enjoy every ray of sunshine, and further, possess a heating apparatus to maintain the necessary warmth, failing sun heat. The latter should be utilised to the utmost by closing the house in the afternoon with the thermometer at about 90°. Ventilate rather early in the morning, in order to rid the foliage of condensed moisture before the sun's rays become powerful enough to injure them—if in the interim before closing time sunshine prevails, ventilate the house freely and fully whenever 95° inside can be assured. At closing up time for the day, if the plants be on trellises, syringe both the upper and under surfaces of the leaves. This is the best way to displace that prolific pest, the red-spider, should it abound, and also keep the leaves clean and healthy. As time proceeds, and growth likewise, and the fruits become heavy, they should be supported before ripening begins. Those which hang beneath trellises can easily be suspended by two broad pieces of matting attached to the trellis and crossed under the bottom of the fruit, whilst those on the surface of beds merely require a piece of slate underneath them, placed so as to let the water run off it quickly; the former way is much to be recommended for late crops as being infinitely the best method for late work. Another matter of moment is to ensure having a gentle warmth at the roots continuously and more especially at that period when the fruit is approaching maturity. Give the customary attention to crops of Melons advancing in frames; do not suffer the plants to run almost wild and then at once to divest them of half the shoots and foliage together, but rather afford a little time, about once or twice in each week, to attend to their requirements in the way of stopping and training. This will more than be compensated for in the size and superior condition of the fruit. If the sunshine and heat, as we have lately experienced, continues, Melons in frames ought, with fair attention, to do well. Open the frames a little way at the top on the mornings of bright days, give an abundance of air in hot, sunny weather, and shut up the place in the afternoon at about 90°. At this time sprinkle the foliage of the plants and the walls.

This course of treatment should be pursued so long as sunny weather endures. Under less favourable circumstance modify the treatment so as to maintain the heat in such places as equable as possible. As the fruit approaches maturity more care should be exercised, so as not to wet it so much, as the flesh of Melons becomes more tender and more liable to decay from a superabundance of moisture than from any other cause at this stage of development. *Geo. Thos. Miles, Wycombe Abbey.*

# The Hardy Fruit Garden.

WALL TREES.

All such trees should have great attention for some time as regards watering, syringing, and keeping the foliage clean and free from insects. No after attention will compensate for neglect at this time of the year, as now is the time to build up the trees and fit them to bear satisfactory crops; for, no matter how skilfully the winter pruning, nailing, and cleansing may be, it will all be in vain if the trees do not receive proper treatment during the growing season.

Most kinds of wall trees will by this time have almost completed their summer growth, and the chief aim should now be to thoroughly ripen the wood. This applies to Peaches, Nectarines, Plums, Pears, &c.—in fact, to all kinds of fruit-bearing trees and bushes; thinning out all weakly shoots, nailing in the young wood close to the walls, and, above everything, to avoid crowding the walls with young shoots. It is much safer and far more satisfactory to err on the side of having the shoots too wide apart than to have the walls crowded with half-ripened shoots, which cannot bring satisfactory results.

STRAWBERRIES, &C.

Strawberry beds will be finished bearing in most places, and all the young runners not wanted for potting up or forming new plantations should now be cleared away, and should the weather continue dry and hot a good watering would be of much advantage to the beds. Carefully avoid cutting off the old leaves; only remove such as are withered. I have seen all the leaves clean cut off, a practice which I must strongly condemn. Of sorts, Oxonian I find later than Elton Pine, so that growers would do well to make a note of this variety, and if not already grown, lose no time in planting it in a cool, shady position. Gooseberries, such as Warrington and Henson's Prolific, should now be netted over to keep off birds, much in the same way as advised for Strawberries in former Calenders. When Raspberries are done bearing, the shoots that have borne fruit should now be cut clean away, and the young shoots lightly tied up, so that they may have a chance to become thoroughly ripened. *F. Smith, Mentmore, Bucks, July 27.*

# The Kitchen Garden.

SEED SOWING AND PLANTING OUT, &C.

It is important to have a goodly number of Lettuce and Endive about three-fourths grown and fit for lifting and placing in frames just before the approach of injurious frosts. To secure this end attention as to the date of sowing is necessary. The dates for Lettuce sowing were given in a former Calendar. Endive for this purpose should be sown about the middle of August. Preparations must now be made for getting in the seed to supply the winter Turnips, and a couple of weeks later the winter Spinach. A piece of well drained and manured ground in a well exposed position is best for both crops. The ground should also receive a good dressing of fresh soot, to which a little lime may be added prior to spreading. This may be applied after the ground has been manured and dug. It should be then well worked in with the hand-harrow or wooden rake prior to drawing the drills, which may be 1 foot apart for Turnips, and 14 to 16 inches apart for Spinach. Where Leeks are required throughout the winter successional plantations may be made as the ground becomes vacant by the removal of Peas, Beans, or Potatos. The same remarks apply to winter Greens, Kale, Savoys, and late Broccoli, many of which have been large enough to plant out long ago; had the weather not been so hot and the ground so dry.

Radish-sowing may begin again in August, as the ground gets cooler; they will be mild in flavour, similar to spring roots. Kidney Beans should have short stakes placed to them; receiving this attention keeps the plants from being broken when gathering the pods; the tops cut from Pea-stakes are suitable for this purpose.

WATERING.

Well watering overhead with a coarse rose keeps the hearts of the plants clean and free from fly and other insects, as well as keeping them healthy at the root. Late Peas, successional Kidney Beans, Scarlet Runners, newly-planted Asparagus beds, Celery, Cauliflower, &c., must be watered in the absence of rain—that is, if the best results are ultimately to be obtained, as the soil now, even where mulched on the surface, is dust-dry beneath. Peas especially, should receive special attention in this respect, or they will quickly be affected with mildew. Break the leaves over Cauliflowers to protect the flower from the sun. Tomatos should be looked over weekly and pinched, all superfluous shoots being removed.

During this favourable weather advantage should be taken to destroy all weeds between growing crops—in fact the above and watering, preparing of ground for winter crop will now be the staple work in this department until the much wanted rain comes to facilitate other operations. *G. H. Richards, Somerley Gardens, Ringwood.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Aug. 3—Horticultural Show, Northampton.
THURSDAY, Aug. 6—Horticultural Show, Aberdare.
SATURDAY, Aug. 8—Horticultural Show, Matlock

WE have great pleasure in laying before our readers the following circular relating to the NATIONAL PEAR CONFERENCE proposed to be held in the Royal Horticultural Society's Gardens, Chiswick, in October next :—

"The crop of Pears this present season being generally abundant and good, an extremely favourable opportunity is presented for the examination of the numerous varieties cultivated throughout the country. The Council of the Royal Horticultural Society has therefore decided to hold a Conference on Pears (of a similar character to that so succesfully adopted in regard to Apples in 1883), in the great Conservatory at Chiswick, commencing on October 21 next.

"This Conference will not assume the form of an ordinary exhibition—there will be no competition and no prizes—the objects being to disseminate useful knowledge on the varieties most suitable for cultivation, to compare their merits, and to correct their nomenclature, and generally to render the meeting instructive to fruit growers. The collection of Pears grown in the gardens, which contains many typical varieties, will be available for comparison.

"Growers of fruit will have in this exhibition an opportunity of correcting or verifying the nomenclature of their own fruits, by bringing specimens with them and making a personal examination. Every possible assistance will be given by members of the Committee to such enquirers.

"All fruit growers are invited to contribute, and the more widely the collections are procured, the greater will be the interest created. No limit will be placed on the number of varieties any one may see fit to send, and it is not necessary that they should be the products of his own grounds. The Council desires that an effort be made to procure representatives of all the varieties that are grown in the various districts, and that all should be distinctly labelled with the name or names under which they are grown in their respective localities.

"It is desirable that every collection should be accompanied with as much information as can be furnished, with regard to soil, stocks, exposure, and physical conditions of the districts from which they are gathered &c., to aid the Committee, if necessary, in drawing up their report. Cards and forms for this purpose will be supplied by the Secretary to all exhibitors on application.

"The specimens being strictly for examination, they must necessarily be at the disposal of the Committee where required.

"As the earlier varieties of Pears will be over before the time fixed for the Conference, it is desirable that specimens of these be sent to any of the meetings of the Fruit Committee preceding Conference. These should be addressed to the Secretary, Fruit Committee, Royal Horticultural Society, South Kensington.

"Exhibitors are requested to send not less than two or more than six fruits of a kind for the purposes of comparison.

"Notice of intention to exhibit must be given to the Secretary, Mr. BARRON, not later than Wednesday, October 14, stating the number of varieties to be exhibited, and the amount of space that will be required. Consignments of fruit—to be staged by the Committee—should be addressed to the Secretary, for delivery on or before Monday, October 19. The carriage will be paid by the Society. Heavy packages to be sent per goods train.

"Exhibitors staging their own fruit may do so on Tuesday the 20th, or on the morning of the 21st, so as to be ready for the inspection of the Committee at 1 o'clock P.M., when the exhibition will be opened.

"All exhibitors will be admitted to the gardens free, and will receive tickets in proportion to the extent of their exhibits for the admission of friends."

The following gentlemen have been appointed a committee to carry out the objects of the Conference in various parts of the country, those marked * forming the Executive.

Anderson, A., Oxenford Castle, Dalkeith.
Bashford, —, Guernsey.
Blackmore, R. D., Teddington.
Breese, G., Petworth Park, Petworth.
Brotherston, R. P., Tynninghame, Prestonkirk.
Browne, Colville, The Paddocks, Swaffham, Norfolk.
Bulmer, Rev. C. H., Credenhill Rectory, Hereford.
Bull, Dr., Hereford.
*Bunyard, George, Nurseries, Maidstone.
Burnett, J., The Gardens, The Deepdene, Dorking.
Cathcart, Robert, Pitcairlie, Auchtermuchty, Fife.
Cheal, J., Nurseries, Crawley, Sussex.
Chesterfield, The Earl of, Holme Lacy, Hereford.
Coleman, W., Eastnor Castle Gardens, Ledbury.
Cranston, John, The Nurseries, Hereford.
Cummins, G. W., The Gardens, The Grange, Wallington.
Dalrymple, The Hon. G., Elliston House, St. Boswells.
Dean, A., Bedfont, Hounslow.
Dickson, F., 106, Eastgate Street, Chester.
Dickson, J., 108, Eastgate Street, Chester.
Draper, J. W., Covent Garden.
Dunn, M., The Gardens, Dalkeith Palace, N.B.
Ford, S., The Gardens, Leonardslee, Horsham.
Garland, J., The Gardens, Killerton, Exeter.
Gilbert, R., The Gardens, Burghleigh, Stamford.
Goldsmith, G., Tonbridge.
Graham, J., Cranford, Hounslow.
Harrison, J., The Nurseries, Leicester.
Haycock, C., The Gardens, Barham Court, Maidstone.
Hibberd, S., 1, Priory Road, Kew Green, Kew.
*Hogg, Dr. R., 171, Fleet Street, E.C.
Hathaway, J., The Gardens, Lathom House, Ormskirk.
Ingram, W., The Gardens, Belvoir Castle, Grantham.
Jefferies, W. J., The Nurseries, Cirencester.
Jefferies, J. E., The Nurseries, Oxford.
Jenkins, W., The Willows, Abergavenny.
Jones, T., Royal Gardens, Frogmore.
Kingsley, Rev. W., South Kilvington Rectory, Thirsk.
Lane, J. E., The Nurseries, Great Berkhamstead.
Laxton, T., Bedford.
Lee, W. The Nurseries, Hammersmith.
*Lee, J., 78, Warwick Gardens, W.
Mansell, J. L., St. Peter's Terrace, Guernsey.
Masters, Dr., 41, Wellington Street, Strand, W.C.
Miles, G. T., The Gardens, Wycombe Abbey, High Wycombe.
Miller, W., Coombe Abbey, Coventry.
Muir, J., The Gardens, Margam Castle, Taibach, S. Wales.
Paul, G., The Nurseries, Cheshunt.
Paul, W., The Nurseris, Waltham Cross.
Pearson, J. R., The Nurseries, Chilwell, Notts.
Penny, C., The Gardens, Sandringham, King's Lynn.
Poynter, R., The Nurseries, Taunton.
Pragnell, W. G., The Gardens, Sherborne Castle, Dorset.
Renwick, J., The Nurseries, Melrose, N.B.
*Rivers, T. F., The Nurseries, Sawbridgeworth.
Ritchie, H., Eardiston Gardens, Worcester.
*Roberts, J., The Gardens, Gunnersbury Park, Acton.
Robertson, Dr., Errol, N.B.
Robinson, W., 37, Southampton Street, Strand, W.C.
Ross, C., The Gardens, Welford Park, Newbury.
Rust, J., The Gardens, Eridge Castle, Tunbridge Wells.
Rutland, T., The Gardens, Goodwood, Chichester.
Saltmarsh, T. J., The Nurseries, Chelmsford.
Saunders, C. B., The Nurseries, St. Heliers, Jersey.
Shingles, T., The Gardens, Totworth Court, Gloucester.
Smith, J., The Gardens, Mentmore, Leighton Buzzard.
Smith, R., The Nurseries, Worcester.
Stevens, Z., The Gardens, Trentham Hall, Stoke-on-Trent.
Strickland, Sir C., Bart., Hildenley, Malton.
Thomas, O., The Gardens, Chatsworth, Chesterfield.
Thomson, D., The Gardens, Drumlanrig, Castle, N.B.
Thomson, W., The Vineyard, Clovenfords, Galashiels, N.B.
Thurston, Rev. Joseph, Guernsey.
Turner, A., Royal Nurseries, Slough.
Unthank, Rev. G. R., Templeville, Limerick.
*Veitch, H. J., The Nurseries, Chelsea, S.W.
Veitch, P., The Nurseries, Exeter.
Webber, J., Covent Garden, W.C.
Webster, J., The Gardens, Gordon Castle, Fochabers, N.B.
Wheeler, A. C., The Nurseries, Gloucester.
*Woodbridge, J., The Gardens, Syon House, Brentford.
Wildsmith, W., The Gardens, Heckfield Place, Winchfield.
Wynne, B., 17, Catherine Street, Strand, W.C.

—— PRINCESS HENRY OF BATTENBERG.—The beautiful bouquet of choice white flowers which the Princess carried on the occasion of her marriage was presented to her by Mr. VEITCH. In the centre was a sprig of Myrtle from a tree at the Swiss Cottage at Osborn, which was struck from a similar sprig in a bouquet presented to the Crown Princess of GERMANY, on her marriage, June 25, 1858, also by Mr. VEITCH.

—— DICTIONNAIRE DE BOTANIQUE.—M. BAILLON'S important publication has reached its eighteenth number, which brings the Dictionary down to the word Francoa. Some important articles are included in the present number, such as Eucalyptus, Euphorbia, Fleur, Feuille, Fougère. A great feature of this publication consists in the woodcuts, excellent alike as faithful representations, and in execution.

—— GRAND NATIONAL DAHLIA SHOW.—We are requested to announce that at a recent meeting of the subscribers to the prize fund for the show to be held in September next at the Crystal Palace, it was decided to offer a prize to be called the Turner Memorial Prize, as a memento of the late Mr. CHARLES TURNER, of Slough, who laboured so assiduously towards the establishment of these exhibitions. Several subscriptions, varying in amount from 2*s.* 6*d.* to 21*s.*, have been received for this object. Those who desire to contribute either to this or the general fund, are requested to send their subscriptions within the next few days to the Hon. Treasurer, Mr. THOMAS MOORE, Botanic Garden, Chelsea, S.W., in order that the conditions of the prize may be settled at the next meeting of the committee, which will take place shortly.

—— THE ANTWERP CONGRESS.—At the opening meeting on August 2, the question to be discussed will be :—

The flora of the Congo and the experiments to be undertaken in the cultivation and acclimatisation of plants in the Free State of Central Africa.

At the second meeting, August 3, questions relating to the best methods of extending the knowledge of theoretical and practical botany in relation to the cultivation of plants will be brought forward, as well as matters concerning the steps to be taken to secure the uniform adoption of the Centigrade thermometer scale; to combat the attacks of aphides; and to secure the modification and uniform application of the Phylloxera Convention of Berne.

In the Botanical section (August 5) the principal matters in the programme have reference to the establishment of botanical laboratories for purposes of research; to instruction in Cryptogamic botany and vegetable pathology. The question of the best kind of labels will also be discussed.

In the Horticultural section, which meets on August 4, the questions of artificial manures, and the use of sewage in plant cultivation will be brought forward, as well as the culture of Mushrooms, the remedies for Phylloxera, the establishment of provident societies for gardeners, and railway tariffs.

The Market-Garden section will deliberate upon the best varieties of fruit and vegetables for market purposes, and the best means of disposing of the produce in the markets. The subject of fruit-tree culture will also be considered.

—— THE ROWE ORPHAN FUND.—In addition to the sums announced as having been received by us, we are pleased to say that additional sums have been received during the past week, through the kind instrumentality of Mr. GEORGE, nurseryman, of Putney :—

| | £ | s. | d. |
|---|---|---|---|
| An Old Gardener, 103, High Street, Putney | 0 | 2 | 6 |
| G. Stevens, St, John's Nursery, Putney | 0 | 2 | 6 |
| H. Brown, The Cottage, Putney Heath | 0 | 1 | 0 |
| Paul & Sons, Cheshunt | 1 | 0 | 0 |
| W. Rapley, Balham | 0 | 5 | 0 |
| J. Bennett, Feldheim, Wimbledon Common | 0 | 3 | 0 |
| E. Sanderson, St. Mary's Road, Harlesden, N.W. | 0 | 5 | 0 |
| H. Veitch, Royal Exotic Nursery, King's Road, Chelsea | 5 | 0 | 0 |
| J. Roberts, Gunnersbury Park, Acton | 1 | 1 | 0 |
| Robert Veitch & Son, Exeter | 0 | 5 | 0 |
| W. Holmes, Frampton Road Nursery, Hackney | 0 | 2 | 6 |

Also from John Gardener, Elsham Hall Gardens, Brigg, 5*s.*

—— Vanda Sanderiana. — A correspondent writes :—"Chester was certainly *en fête* during the days upon which the Musical Festival was held in the cathedral. The windows of the nurserymen in the city were filled with beautiful flowers. Messrs. F. & A. Dickson & Sons, the Queen's Seedsmen, showed a good collection of cut Roses, Lilies, and herbaceous plants, added to which they exhibited a beautiful specimen of Vanda Sanderiana from the collection of Arthur Potts, Esq., Hoole Hall, a well known horticulturist and an enthusiastic lover of Orchids."

—— Floral Illustrations.—We are tempted sometimes to inquire what is the object of a particular illustration? If the subject be treated merely from a decorative point of view, well and good; we can afford then to put up with the absence of correct detail, and with obscurity of outline, for the sake of delicate gradations of light and shade, or subtle contrasts of colour. A drawing or an engraving which, from a botanical point of view, is a mere Whistlerian smudge, from the imaginative or poetic point of view of the artist, may be one which would justly find favour with lovers of Turner or Rembrandt; but for the purposes of the gardener or botanist something more definite is required. The object in this case is to present the spectator with a recognisable portrait,—correct in outline, faultless in detail. Many artists are thinking of something different, which they call effect—an effect which may or not be true to Nature—an effect which may be beautiful, but which is not what is required. The conventional artist sees one facet of the diamond of truth, the descriptive botanist another, the physiologist yet another. The artist loves to depict the curves and twists of the leaves, the varied position of flowers and their parts, and as these are dependent to a large extent on the conditions under which a plant grows, to depict them truthfully is to furnish a record of the plant's history. An artist seizes these points instinctively as the result of observation, and very often without a thought of the causes, physiological and physical, by which they are brought about. Leonarda da Vinci, to cite only one illustration, felt the necessity for trained observation, and no one will say that in his work there is any lack of "effect" although he strove to be accurate in all he did. A portrait painter will not feel contented with the mere reproduction of a man's features, but he will endeavour to "catch the expression" of the sitter and give animation to what otherwise would be a mere diagram. In like manner the ideal botanical drawing will, without any sacrifice of essential matters, convert a plant into a picture which shall give details with accuracy, and yet produce an impression of life.

—— Mesembryanthemum edule. — We are indebted to the Surveyor of the town of Torquay for a specimen of this robust species, which grows and flowers in profusion at Torquay, where it proves perfectly hardy. The plants are not protected in any way, but grow so near to the public road that strong shoots are frequently removed by passing carriages. The specimen sent, with its large awl-shaped, 3-sided leaves and broadly expanding yellowish flowers, makes one wish that it should be tried in other seaside places. Even on some parts of the Kentish coast, as near as Sandgate, it might be tried with advantage.

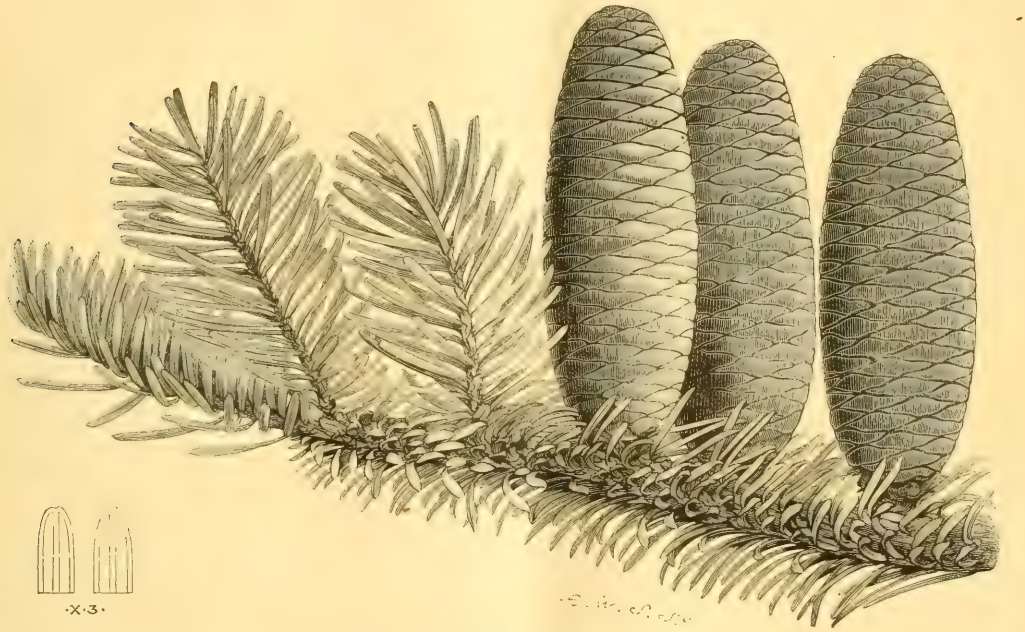



Fig. 30.—Abies brachyphylla: cones purple. (see p. 151.)

—— "A Feast of Carnations."—We are requested to state that the Provisional Committee of the Oxford Union Carnation and Picotee Society give notice that they will lay out a feast of Carnations in the gardens of Mr. Dodwell, The Cottage, Stanley Road, Iffley Road, Oxford, on Tuesday next, August 4. Admission, from 2 p.m., free. Lovers of the flower are invited to partake.

—— The Dutch Horticultural and Botanical Society of Arnheim.—We learn that a deputation from this Society intends to visit the horticultural establishments near London in the middle of August. Arrangements have already been made with Messrs. Cannell for this purpose.

—— Forestry.—Dr. Cleghorn gave evidence recently before Sir John Lubbock's Committee of the House of Commons on this subject. Having had experience in the establishment of the Indian forestal system, and having studied the British woods since 1868, he was of opinion that if we had trained woodmen our woodlands might be made much more productive. Sylviculture was better understood in England than arboriculture. [So stated in the daily journals, but we suspect the reverse was intended. Ed.] There were many fine ornamental trees, but planting was not done on a sufficiently large scale. It was the general opinion of those acquainted with our woodlands that the establishment of a forest school would be of great advantage to this country. Various steps have been taken in that direction in Scotland by the establishment of an arboretum, museums, and libraries. Timber was imported into this country to the amount of £17,000,000 annually, which was brought up by resin, bark, turpentine, &c., to £31,000,000. All the foreign possessions of England were taking up the subject more or less. Supplies of timber from Canada were very considerably diminished. Prince Edward's Island, which was once covered with timber, was altogether denuded. There was no doubt of the importance of increasing the home growth of timber to provide against a possible timber famine. There were many tracts of land in England now comparatively idle which would grow timber on a large scale, and give employment to the people.—Colonel Pearson, who had charge of the Forest School in India, was of opinion that the scientific training of students there had a great deal to do with the increased revenue from forests, and he had no doubt that something of the same kind might be done on a smaller scale in England. Scientific forestal education might be given at King's and University Colleges, rather than at Oxford or Cambridge, and a forestal chair might be established at Edinburgh, but in each case it would be absolutely necessary that the students should be taken to the woods to acquire knowledge byactual observation. — Mr. Thistleton Dyer, of Kew, was of opinion that scientific knowledge essential to the successful cultivation of forests. If the general knowledge of skilled foresters was brought to bear on English woodlands immense advantage might be derived. Picked men had been sent from Kew Gardens to the colonies to give directions in forestry, and these had generally

been successful. Asked his opinion as to what steps should be taken with respect to England, he considered that India, where they had every advantage for the study of forestry, should be made the nucleus of forest education.

—— Peter Lawson & Son (Limited).—The directors, in view of the approaching annual general meeting of the company, to be held in the registered office of the company, No. 1, George IV. Bridge, Edinburgh, on Thursday, August 6, at 3 o'clock P.M, have issued the following circular:—

"The directors have to report to the shareholders satisfactory results from the working of the company since they took over the seed business of the Lawson Seed and Nursery Company (Limited).

"After paying all the expenses incurred in the formation of the company, allowing for discounts, bad debts, depreciation, &c., the accounts show a clear surplus of £5880 11s. 11d. Looking to the amount at their disposal, the directors, under ordinary circumstances, would have felt warranted in dividing a much larger amount, but considering the short time the company has been in existence they think it more judicious to recommend that a dividend at the rate of 10 per cent. per annum, free of Income Tax, be declared upon the paid-up capital as from November 11 last, payable on the 15th proximo, and that the balance of £5233 0s. 3d. be carried forward.

"All the directors now retire in terms of the company's Articles of Association, but are eligible for re-election.

"The auditors may also be re-appointed.

"James Glenn, Chairman.

"Edinburgh, July 25."

—— Casimiroa edulis.—A Constantinople correspondent inquires—What is the most suitable stock for grafting this upon? We have no experience of our own to offer, but would suggest from the natural affinity of the plant that some of the hardier varieties of Orange (Citrus) might be tried. We may remind our readers, as the fruit of this tree is still but little known, that a specimen was figured in our columns, October 13, 1877, from the gardens of Mitchell-Henry, Esq., M.P., Kylemore, Galway, when we were enabled to give cultural details, kindly supplied by Mr. Garnier, the gardener who had the honour of first fruiting the tree in this country.

—— The Botany of South Kent.—The following letter from the late Rev. Gerard Smith, the author of the *Plants of South Kent*, will be read with interest. The Plantago referred to was a remarkably fine specimen of the proliferous variety of P. major, and the Primrose alluded to was extremely remarkable in its structure. Its history is this. Some quarter of a century ago the present writer was shown some water-colour sketches of Primulas executed by the Rev. G. Smith five-and-twenty years previously. One of these sketches showed so extraordinary a structure that a tracing was made of it, but the appearances were so peculiar that some error of observation was suspected, and hence no mention was made of the case in *Vegetable Teratology*. A few years ago, however, in some specimens sent by Miss Dowson, the self-same appearances were presented as had been noted in Mr. Smith's drawing so many years previously. A careful examination was then made, and the results communicated to the Linnean Society, and published, with illustrations, in its *Transactions*. With this necessary explanation we now subjoin Mr. Smith's letter:—

"Your letter has given me sincere pleasure, both because of the interest which you take in the remarkable variety of Plantago major of which Mr. Cooling sent you a specimen last autumn, and of the associations and recollections which you revive so forcibly and happily of old times and habits in South Kent. It was not a month since I was speaking with a friend of Sandgate and Selling, and my days spent there; and to give him an idea how greatly my zeal for botany exceeded the pastoral, I mentioned the visit of my vicar, upon his coming to Selling a month or two after my appointment to be his curate, at the house of a neighbouring farmer, and receiving for answer to his enquiry how he liked the new curate, 'Oh, there never was such a man! He'll go up to his waist in a bog for a rare plant!' The vicar was a clergyman of the good old steady school, well read in divinity, and a careful and intelligent preacher, whose ideas did not extend far beyond the duties of a public school and his well-filled library. When he returned from that visit he came to me in my room at the vicarage, and, looking round at the plant-press, bundles of plants, &c., mingled with books, and papers, and sermons, he gravely related Mr. ——'s remarks, and added, 'It will be a happy time, Mr. Smith, when your recreation becomes your study, and your study your recreation!' Professionally he was right, and I felt it; but, for myself, I must say that when he left me as curate in a parish of smugglers and machine-breakers, without any experience, and as scanty a preparation for the ministry as was considered sufficient in those days, he had little reason to complain that a young man who had studied Nature from his childhood, and had been encouraged by his teachers, himself included, in the love of Nature, should often stand at the gate of the vicarage, doubtful whether to go among the people or to take to the hills, and decide at last for the hills, especially when Orchis fusca, or Pyrola rotundifolia was in bloom!

"I thank you very sincerely for the copy of your paper upon the morphology of the Primulaceæ, which I had seen a few months since, and had greatly admired. One of your correspondents one day brought me your paper, with other documents—I forget for what reason. When I opened the paper at t. 39, I exclaimed at once, 'Why, here is the very self-same Primula with its style-bearing filaments that I found in a wood at Upmarden between forty and fifty years ago!' Behold, upon reference to the letterpress, I found that the figures were actually a reproduction of my own dissections!

"Let me mention a circumstance connected with those abnormal-flowered Primulas which may add to the notice of similar but hidden examples. There were several plants growing near together in the wood at Upmarden; and in the same wood I found that whenever the undergrowth was cut for bakers' 'bavins,' plenty of Euphorbia latbyris sprung up. All the plants of Primula vulgaris in the state above-mentioned had the corolla bent inwards over the tube, flaccid and paler than usual."

—— Terra Cotta Pottery.—At the stand of Messrs. Balfour & Co., in the Inventions Exhibition, there are some pretty things in garden flowerpots, Orchid pots and baskets, &c. The ware is of graceful proportions, well made, and of porous finely comminuted clay of a pale red colour. The articles on view there are those that would find favour with amateurs having a little greenhouse in which everything must look tasteful and neat. For the ordinary use of a garden the better class of ware is too costly, and is not necessary.

—— Tea from Jamaica.—What a Colonial botanist can do to stimulate flagging industry and develope new resources is well exemplified by Mr. D. Morris, the Director of the Botanical Department, Jamaica. We have before us the broker's report on the first commercial sample of Jamaica-grown Tea, sent into the market mainly through the energy and forethought of Mr. Morris:—

"We have carefully examined the sample of Tea, and now beg to hand you our report on it. The leaf is very fairly made, though if intended for our market we think it would be well if the slight glazy appearance it possesses could be avoided. After infusion the leaf is bright, indicating good quality and careful preparation; while the liquor has fair strength and good flavour, combining to a great extent the peculiar characteristics of a fine China black leaf, and a Ceylon Pekoe Souchong. We consider the value of the Tea here to be from 1s. 6d. to 1s. 8d. per pound (in bond), and if you could send a fair sized parcel no doubt it would meet a good reception from London buyers. If at any time we can furnish you with information, or assist the development of the Tea industry in your island, we shall have much pleasure in so doing. We beg in the meantime to be permitted to congratulate you upon the specimen of the manufactured article you have now sent us.

(Signed) "Geo. White & Co."

—— "Familiar Trees."—Messrs. Cassell have issued the first number of a periodical intended to be a companion to their *Familiar Garden Flowers*. It is to be devoted to British trees, and opens well with a well written account of the Oak. The coloured illustrations, if we may judge from those before us, are better than in the corresponding series devoted to British Plants and Garden Flowers, while the name of Mr. Boulger, as editor, is a guarantee that accuracy of treatment will be combined with an agreeable style. The subjoined extract may be given in illustration:—

"In a growing Oak notice will be taken of the outward spreading of the stem at its base; of the rugged bark; of the curiously tortuous branchlets, twisting in zig-zag fashion almost rectangularly towards every point of the compass, owing to the central shoots becoming abortive; and of the uniquely waving outline of the yellowish-green leaves. The leaves generally make their first appearance in the south of England towards the end of April, when the young shoots blush with a ruddiness almost autumnal; and, if at all sheltered from the glare of July and August, from the time when the ashy bark is first draped in foliage, a constant succession of the pink and bronze-tinted glories of the young leafage is kept up in our moist summers till late in autumn, when the first formed leaves are beginning to change. Then the green loses its olive-yellow tints for clear gold, mottled with clear grass-green, fading to the sober palid russet which lasts through the winter. This indescribable hue has none of the coppery richness of the dead leaves of Beech, nor the warm umber of the Horse Chestnut; it is the grey ghost of a brown that has been. The catkins appear shortly after the leaves: the male ones pendulous, the female erect. The former are 2 or 3 inches long, bearing at intervals stalkless clusters of inconspicuous flowers, each consisting of a six or seven-lobed calyx and ten stamens. The female flowers, on the other hand, are solitary, each being surrounded by the numerous overlapping scales, or 'bracts,' which afterwards form the cup. The flower itself is but the ovary enclosed by the adherent calyx, divided internally into three chambers, and surmounted by a triple style—the miniature *fleur-de-lys* on the sceptre of the forest king. In each chamber there are two ovules, and it is a noteworthy fact that from these six only one is matured into the single seed that every acorn contains. A similar circumstance occurring in the case of Palms and of other trees, suggests the explanation that perennial plants, trees more especially, require to produce fewer seeds in order to ensure the permanence of the species than do annuals, whose individual existence is so many times shorter."

—— Ealing, Acton, and Hanwell Horticultural Society.—The financial success which attended the anniversary exhibition of this Society held in Gunnersbury Park on July 7 and 8 completely surpassed the most sanguine expectations of its promoters. The sum of £95 was taken in payment at the gates; and a sum of over £89 taken by the sale of tickets on the preceding day; some £55 of this sum being for sixpenny admissions sold at fourpence each. A very large body of subscribers and their friends, as well as exhibitors and their assistants, were admitted by special tickets. Notwithstanding that such a large body of persons passed through the grounds, which were freely thrown open to the visitors, Mr. Roberts had not a single cause for complaint; the behaviour of the multitude was most decorous. The income of this Society, which was last year just over £500, will this season amount to nearly £650.

—— Gardening Appointments.—Thomas Feast, Foreman at Oakley Court Gardens, Windsor, as Gardener to F. M. Huth, Esq., Henmerd House, Cuckfield, Sussex.—Mr. A. Ryder, Plant-Foreman, Kensington Palace Gardens, has been appointed Gardener to the Right Hon. Lord Bateman, Shobden Court.

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Bamboo.—In Burma, as in most tropical countries, the Bamboo is in great demand, and to the mass of the people is invaluable. Of Bamboo alone a complete and comfortable house, absolutely proof against the tropical downpour of rain, can be erected in an incredibly short space of time. A roof made of large Bamboos split in half, and laid over and under, like tiles, is absolutely waterproof The drawback, however, of Bamboo as a house material is that it lasts but a few years, and is, of course, simply swept away by fire; but to a native of a country abounding in Bamboos, from which in three days he can reconstruct his dwelling, this is a trifle. Other everyday uses are scaffolding, bridging, fencing, and decoration — carts, boats, fittings, matting and domestic utensils, and a variety of industrial and economic purposes too numerous to detail. A fine mat of split Bamboo forms the basis of the exquisite Burma boxes, the one industrial specialty of Upper Burma. The young shoots of Bamboos are edible, and pickled by the Chinese, whilst the softer wooded species yield a highly promising material for the manufacture of paper. Silica is contained in large quantity in both the leaves and stem of Bamboos, and is held in solution in the fluid contained in the growing stems of many species. This fluid is often limpid, but as it dries up it becomes milky, and finally deposits a cake of gelatinous opaline silica at the bottom of the joint, known as "tabasheer," possessing curious optical properties. These little discs of "tabasheer" may often be picked up in a Bamboo forest after the Bamboo which yielded it has decayed; and when a Bamboo forest has been destroyed by fire these white calcined discs form quite a feature of the ground. *Mason.*

# The Herbaceous Border.

## CAMPANULAS.

Can any of your readers tell us the history of C. abietina? Every visitor we have admires it, and none seem to have seen it before. It grows in circular bosses of dense foliage, and sends up stems bearing a few flowers of exquisite shape, and of a rich reddish-purple. It is quite unlike any of our older garden Campanulas. For rockwork it is the best of all the Campanulas, as it continues in flower for two or three months, whereas C. pulla, C. pumila, and the other dwarf growers, have a very brief span for blooming. C. Schotti is another similar flower, but its scapes have more blooms, and its foliage is sparser. An odd seedling came to us amongst some plants from Herr Gusmus two years ago, and it is very like C. Schotti, although different. All three remind me most of our rare British C. patula, which appears to me to be a hybrid, probably from C. rotundifolia × rapunculus. I argue in the same way that C. abietina may be a hybrid or cross variety from alpine sorts. We are just now having similar hybrids raised by British gardeners, such as G. F. Wilson; and Haylodgensis [!], raised by the late Mr. I. Anderson-Henry, and C. Tymonsii, raised by our excellent friend the great Irish florist of Cloghran. There may be numbers more, and they will all be welcome. We have nearly a hundred varieties of the Campanula and its allies growing here, and I see many cross varieties in the grounds this year from chance seedlings, one plant of latifolia having its flowers striped blue and white. There are plants of rapunculus of greater stature, and thickly coated with hairs, like barbata, and several new and grand varieties of persicifolia—one with pelviform flowers, like that beautiful variety of carpathica, C. pelviformis.

In a recent note of the rock garden at St. Alban's Court in your columns, the writer remarked that it appeared to be a summer rockery, no provision being made for late blooming. The Campanulas and Dianthuses fill up this space of gardening time very well, and furnish abundant bloom for a month or so. Our garden never looks so gay as when the Roses, Campanulas, and English Irises are in bloom. I am glad to see C. Zoysii in flower to-day. It is thus quite hardy, as it has been here now three years. *W. Brockbank, Brockhurst, Didsbury, July* 25.

# GARDEN PESTS: HOW TO PREVENT THEM.

Caterpillars.—It is necessary in order to destroy these pests, whose kinds are legion, that every chrysalis found under the copings of garden walls and in the crevices on gates, windows, palings, doors, &c., be carefully picked off during the winter and spring months.

The best method of preventing trees, especially the Apricot (to which they are very partial) from being infested by the Lepidoptera (moths or butterflies) which lay their eggs on the bark, is to scrape the stems with a smooth piece of bone or wood, made in the form of a knife. Steel would hurt the bark and consequently injure the tree.

When the stems have been carefully gone over wash them with an equal quantity of of soap-suds and liquid-manure. Should the trees be planted against a wall wash that over with the same mixture, for many moths and butterflies deposit their eggs on the walls to which those trees whose foliage their larva most affect are trained.

Directly winter has laid the trees bare insects vanish, but immediately foliage appears in spring, caterpillars, some of whom have but just emerged from the eggs laid by the perfect insect at an earlier period, and some who have passed through their winter in this state, are seen devouring on all sides every bit of green they can find, often leaving the tree quite naked; so in autumn, as soon as the leaves begin to fall, it is well to rake up and sweep away all litter into a refuse heap and immediately set fire to it.

Some people mix up decayed foliage with manure and save it for hot-beds; they say that this process destroys any eggs that may remain on the underside of the leaves, but I prefer burning them. Ova, chrysalids, &c., may survive the one, but cremation must certainly destroy all vitality. In washing the stems some of the mixture falls on the beds underneath the trees, and that destroys the slugs. I allude now to the second washing, which should take place in the spring, before the buds begin to swell, for it will not do to wash or water with this mixture after the trees come into bloom.

When there are any caterpillars on the leaves it is easy to discover them by the curling up of the foliage; every curled leaf will be found to contain one or more specimens.

There are some gregarious sorts which make a sort of cobweb net or bag, fixing it on to a branch of a tree. The Procession caterpillar, so often found on the Oak, is one of this kind. It is the produce of the Bombyx processionis. It is very amusing to see these caterpillars come out of their nests of an evening in single file; they form one continuous string, the head of the second caterpillar just touching the tail of the first, and after the single file becomes about 2 feet long they double it, two march abreast: after a little while three, until in a short time perhaps as many as eight will come all in a row, and one can easily imagine the ravages they commit on the trees they feed upon with their sharp cutting mandibles.

It is said that each plant has its very own peculiar species of caterpillar, but I think that a great many of them show a considerable predilection for Cabbages, although there is, of course, the caterpillar of the Cabbage butterfly (Pieris Brassicæ), which, fastening itself by means of thin threads to a leaf, transforms itself into a chrysalis.

Other caterpillars make slight cocoons by gathering two or three leaves into a ball in order to protect themselves from observation. Some strengthen their cocoons by adding earth and various substances, while some, so Reaumur relates, actually tear the hair with which they are covered off their bodies in order to construct their cocoon.

One might fill pages with the description of the various transformations and habits of the different caterpillars found even in our own country, but as this notice is more especially intended to point out the best way of destroying the insect pests of our gardens I shall not make any more entomological remarks. *Helen Watney.*

# FRUIT CROPS OF NOVA SCOTIA.

Halifax.—Although a great extent of the province of Nova Scotia, including Cape Breton Island, is well adapted for the production of Apples, Pears, Plums, Cherries, and other hardy fruits, yet the principal orchards are found in the counties of King's and Annapolis, in the districts known as Cornwallis and the Annapolis valley. Fruit culture is slowly spreading to the other counties, and Cape Breton is already noted for its Plums, which find a ready market in the United States, where Plum culture is very precarious, owing to the prevalence of the Curculio. The Hon. George Whitman, of Roundhill, Annapolis, reports that in his district the late frost in June did much damage to fruit, especially to Plums and Pears, and that the continued dry weather in June has so injured the crops in light soils, that the yield of Apples will be far short of an average. Colonel W. E. Starratt reports from the town of Paradise (another fruit centre in Annapolis county) in similar terms, and says that the Apple crop this year will be much below an average one. The Nonpareil, "the King of Apples," as a long-keeper, will prove this year a failure. The reports from King's County are more hopeful. Mr. R. W. Starr, writing from Cornwallis, says that fruit, which is fast becoming the great staple in that district, will prove a full average crop. Pears are hardly up to the average, but Apples will give a fair crop for most sorts. Baldwins will be short, as it is not their bearing year (many varieties bear a full crop only in alternate years); but most of the other sorts are looking as well as could be expected after the heavy crops of last year. Mr. C. F. Eaton, on the other hand, writing from another part of the same district, says that there will probably not be an average crop of Apples, although some orchards look well. Pears and Plums are only medium, perhaps below an average in quantity; Cherries plentiful; Strawberries abundant and very fine, as they are all over the province, wherever cultivated. The wild Strawberries, which form an important article of commerce, being used extensively for preserving, were a short crop this year in consequence of the great drought at their ripening season in the latter part of June. In Yarmouth County, on the Atlantic seaboard, at the mouth of the Bay of Fundy, Mr. C. E. Browne reports that the fruit crop promises to be a large one, with favourable prospective conditions; it finds a home market. Small fruits are doing well, except Raspberries, the canes of which, in most instances, were winter-killed as to the buds, the canes remaining green; prolonged growth during mild weather, in the Fall, and consequent partially ripened buds, may explain this.

From the Fundy shore districts, where Cherries specially thrive, the crop is reported better than last year. The weather during the present month (July) has been as favourable as could be desired for all crops in this province; the hay crop, which is our most important one, has profited by the warm weather and frequent rains, and yet the weather is dry enough to promote the healthy growth of the Potato, Indian Corn, Squashes, and Cucumbers, Tomatos, and other crops requiring heat. Garden crops are exceedingly luxuriant. Early Peas have come into use during the past week. The Halifax market is abundantly supplied with early Turnips, Spinach, salads, Carrots, and even Cauliflowers, and many other vegetables. The abundant supplies of fruit (Vaccinium) from the "Blueberry barrens" is nearly ready; the Huckleberry (Gaylussacia), which is even more abundant and cheaper in price, comes later in the season. *George Lawson, Secretary for Agriculture, Government of Nova Scotia Office.*

Port William.—On the whole we shall, I think, have a fair crop, perhaps under an average, but there are so many young orchards just beginning to fruit it is a difficult matter to judge by any previous season as these young orchards make up very largely for any deficiency in the older plantations. We purpose making an exhibit of Apples at the Crystal Palace, London, on Nov. 6, when we hope our fruit will show to better advantage than last year, when much of it had to be picked a month too early. I note what you say about our fruit suffering from bad packing. *C. R. H. Starr, Sec., N. S. Fruit Growers' Association and International Show Society of Nova Scotia.*

# CISTUS.

Three mild winters in succession have enabled us to bring into cultivation here a considerable number of the genus Cistus, though hardly one of them can be called truly hardy in the soil and climate of this part of Cheshire. During a recent visit to Kew I was able to correct and verify the names of most of them—about which both in nurseries and in private gardens there is often much confusion. The best way to grow Cistus in a doubtful climate is to take cuttings every summer, which may be potted as soon as struck and kept in cold frames during winter. Some fast growing kinds flower pretty well the first year if planted out the following spring, but they do better if kept in pots through two winters and planted out the second spring. If this treatment is followed there is no fear of any kind being lost, as all strike easily and winter well in cold frames. They are natives of Southern Europe, Northern Africa, and the Levant, and the number of good species is stated in the *Genera Plantarum* to be about twenty. Sweet in his monograph of the Cistineæ, published in 1830, figures and enumerates thirty-four, but several of these are hybrids or varieties. Others are now referred to Helianthemum. The following are twelve of the best which we have in cultivation:—

*Cistus ladaniferus*, having large white flowers 4 inches across, spotted at the centre with purple, is the stronger grower and one of the hardiest. In warm gardens it grows into a large bush, living many years, but plants of three or four years old flower better. It is almost too coarse a plant for the pot treatment recommended above. There is a variety with pure white flowers.

*C. laurifolius.*—This is another coarse growing kind, bearing white flowers nearly 3 inches across, and is one of the hardiest. I lately saw it in the park at Dropmore in Buckinghamshire growing mixed up with Dog Rose and other wild shrubs to a height of 8 feet or more, but it looks better when a low, bushy habit is kept by pruning.

*C. cupanianus.*—This is Sweet's name for one of the best of the white-flowered Cistuses, but the name

is unknown at Kew, though I saw cuttings of the plant labelled C. cordifolius. Cupanianus is given in Nyman's *Conspectus* as a synonym of C. villosus, a very different plant from this, having pink flowers. This plant is often seen in gardens wrongly named C. florentinus, from which it is easily distinguished by its heart-shaped and long-stalked leaves. It has a good dwarf, compact habit, and flowers abundantly in June.

*C. hirsutus.*—Another very good plant, of neat, bushy, almost procumbent habit, with white flowers similar to those of the last species. The leaves are narrow, long, almost sessile, and a good deal crimped at the side, and very rough.

*C. florentinus* is set down in Nyman's *Conspectus* as a variety or hybrid of C. monspeliensis. The true variety may be seen at Kew, whence I had it; it is there considered to be a variety of C. hirsutus. The plant is not so common in gardens as the name. It is more upright in growth than the type C. hirsutus, and has rather smaller flowers and narrower leaves. It comes very near in appearance to C. monspeliensis, a species with still narrower leaves, smaller flowers, and more slender and upright growth.

*C. tauricus.*—This I had from Kew, and identify it with Sweet's C. oblongifolius. I saw a plant of it grown in Mr. Loder's rock garden at Floore. If really a Tauric plant I am at a loss to know why it is omitted by Boissier from his *Flora Orientalis*, which includes all the plants of Asia Minor. It has white flowers, and rather coarse oblong leaves, and is said to be one of the hardiest.

*C. purpureus.*—A very showy kind, flowering freely the first year from cuttings; the flowers are very large, good pink-purple, with a dark spot at the base of each petal. Leaves rather large, narrow, oblong, nearly sessile, with an amplexicaul stalk; one of the best. Its natural history is obscure. Nyman does not enumerate it in European plants, and Boissier, though including it as Asiatic, says he does not know its habitat. De Candolle says it comes from the Levant; it is probably Cretan.

*C. salviæfolius*, which ought to include, according to Boissier, Sweet's obtusifolius, either as a hybrid or a variety. Both are good free-flowering kinds, with white flowers, and both tolerably common in gardens, forming larger bushes than those with similar flowers mentioned above.

*C. Cyprius.*—There is some confusion in Sweet between this and C. ladaniferus. He says that the C. ladaniferus of *Bot. Mag.*, t. 112, is C. Cyprius, as three buds are there shown in a bunch, the flowers of C. ladaniferus being solitary. In other respects, however, the figure in the *Bot. Mag.* is nearer ladaniferus. In cultivation and real life the two plants are widely distinct, C. Cyprius being of very spreading, dense, and almost prostrate habit, flowering far more freely than a bush of C. ladaniferus of the same dimensions. The flowers of C. Cyprius are rather smaller, and open more flat, and the purple spot at ths base of the petals is not so large as in ladaniferus. Cyprius is, for garden decoration, a very superior plant to the other. Of pink-flowered Cistuses three may be mentioned as common in cultivation.

*C. crispus* is the best, with flowers of clear bright pink, having by far the best colour of this class. The leaves are much crimped and glaucous. It grows into a well formed, much spreading bush about 2 feet high, and the flowering period continues for more than two months. It is a native of Portugal, and one of the hardiest.

*C. albidus.*—Distinguished easily from the last by its larger flowers of pale pink, its more glaucous and longer leaves, and its more straggling and upright growth, and from the next as easily by the colour of its leaves and its pointed buds. It is a fine variety where conditions are suitable, but it seems even more impatient of damp than most of the Cistuses, and is apt to become straggling and untidy.

*C. villosus.*—Leaves almost roundly ovate, rather blunt, nearly as broad as long. Sepals recurved at the tips before flowering, covered with conspicuous hairs, as are also the leaves and young stalks. A species common in cultivation, varying a good deal in the shade of colour of the flower.

There are two plants with handsome bright yellow flowers and a black spot near the base of each petal common in gardens, and very ornamental but tender. They are generally known as

*C. formosus*, with rather broad leaves and larger flowers. I lately saw this at Mr. Whittaker's nursery, Breadsall, growing 9 feet high against a wall, and flowering profusely.

*C. algarvensis*, with narrower leaves and smaller flowers.

Both require a warm sunny situation, and are liable to be lost in hard winters; but the plant at Breadsall is eight or ten years old, and has endured a temperature of nearly zero, with the protection of the wall. These two are now referred to the genus Helianthemum. *C. Wolley Dod, Edge Hall.*

## FUNGUS POISONOUS TO PHEASANTS.

During the past fortnight I have received better materials for the identification of the fungus fatally poisonous to pheasants from Mr. Mills, who also informs me that another case of poisoning has occurred, and that pieces of the fungus have been again found in the dead bird's crop. A similar case has also been reported from the Scilly Isles.

The accompanying illustration (fig. 31) of the fungus is engraved, natural size, from a living example forwarded direct from Enys by Mr. Mills. A section is seen on the right; a cystidium is enlarged 400 diameters, and the distinctly nodular brown spores are enlarged 800 diameters. The fungus is brown all over.

The Agaric bears a very strong resemblance to a small example of Agaricus (Inocybe) rimosus, Bull, and to this plant the fungus might be doubtfully referred. It, however, differs in having nodular spores, the spores in A. rimosus, Bull, being, according to my observations, oval and plain. It is, however,



Fig. 31.—Fungus poisonous to pheasants: Agaricus trechisporus, Berk.

remarkable that some drawings made by Mrs. Russell, purporting to represent A. rimosus, Bull, in the Botanical Department of the British Museum, South Kensington, show A. rimosus, Bull, with nodular spores, exactly in the style of the illustration here given.

I consider the poisonous fungus to be an ally of the above, viz., the Agaricus (Inocybe) trechisporus of Berkeley, although the engraving does not exactly correspond with the original illustration published by Mr. Berkeley himself in the *Outlines of British Fungology*. A drawing of this latter species by Mrs. Russell in the British Museum, however, closely corresponds with the engraving. Fungologists will notice how close is the resemblance of our poisonous plant to Agaricus (Inocybe) scaber, Müll.

A highly poisonous ally of the plant before us has long been known in Agaricus fastibilis, Fr.

In originally attempting to determine this plant from the remains found in the birds' crops I was led astray by the form of the spores and large cystidia in considering it to be an Entoloma instead of an Inocybe. There is no doubt whatever that the poisonous plant is a true Inocybe, and one of the very limited set with a longitudinally cracked pileus and nodular spores.

The fungus was found growing at Enys amongst the grass on the lawn; the lawn extends over thirty-five acres, and there are many and various trees upon it. *W. G. Smith.*

Show Fixtures.—Northampton Horticultural Society, August 3; Matlock Horticultural, August 8; Sutton and Cheam Horticultural, August 12; Wells Horticultural, August 20; Shropshire Horticultural, August 19 and 20; Handsworth and Sheffield Horticultural, August 26.

# Florists' Flowers.

### THE AURICULA.

About the end of July is an important period in the life of an Auricula. At that time they have passed through the summer's rest and are starting into active growth. The two seasons of rest are not noticed by all cultivators, and thus the plants do not get the treatment best suited to their needs. Midwinter is well known to be the season of rest before the plants awake into active and vigorous spring growth. Midsummer is also a period of rest, during which the plants must not receive much water, and be kept as cool as possible, freely exposed to the air by night and by day. It is by judicious management at this season that the plants are cultivated so as to make their growth without at the same time producing any flower trusses. Some growers are much more successful in this respect than others, and none more so than the Rev. F. D. Horner. He seldom has more than five per cent. of his plants running up to bloom in autumn, we seldom have less than twenty per cent. I know Mr. Horner's treatment very well, and have followed it closely, but not with the same results, and can only account for the difference in climate, ours being hotter and drier. Finish off all potting as speedily as possible, ours would have been done before this but for a pressure of other work. The potting time affords an excellent opportunity to remove all offsets having a portion of roots attached to them, they are now clustering thickly round the neck of the plants. They should be potted into very small thumb-pots, singly or two together. I find they form roots, and succeed better in these tiny pots than they do in small 60's. Pot on the seedlings as they require it, and also the offsets propagated in the spring.

### The Carnation and Picotee.

By the time this appears in print the plants ought to be layered. The details of this operation have been so often described, that no more need be said about them. Hybridising the flowers to obtain seeds should be continued all the time the plants are in flower. Those who have not had much experience in seedling raising—who have not perhaps traced the progress of the seed into a tiny plant, and watched it up to the flowering stage—may think perhaps that seeds from a scarlet bizarre, or from a rose-flake, ought to produce duplicates of their parents with but slight variations: they would open their eyes with astonishment at the medley of form and colour produced from even one seed-pod—selfs of various colours, flakes, bizarres, single, semi-double, and double in endless variety not one alike. The profusion of flowers produced and the vigour of the plants cannot fail to please those who admire sweetness, and an interminable variety of beautiful forms. I write this with a bed containing tens of thousands of beautiful flowers and buds before me. The seedlings intended to flower next year have not long been planted out; it is best to plant them where they are to flower early in June, the plants will then form good strong specimens which will produce an average of fifty flowers the following season. Some persons say the flowers ought to be opened on cards, and in the gardens of the genuine old florists each remarkable specimen has its background of white card-board. We never have a card on any of our flowers except when they are prepared for exhibition.

### Hollyhocks.

Although the season has been very favourable to the development of the troublesome fungus, [?] there is not yet any trace of it on our plants growing all over the garden. The plants are just now coming into bloom, and if we could supply them liberally with manure-water, the flowers would be of very large size. The whole of the plants have been out-of-doors all through the winter. It is now a good time to propagate plants from eyes. The side growths have usually two or three eyes near the base, these must be cut out in the same way as Vine eyes, the leaf cut off, leaving the stalk. They will soon produce roots in a frame; a very little bottom-heat stimulates root-action, but they will produce roots in cold frames, if the small pots are plunged in cocoa-nut fibre refuse. Remove the blooms as soon as they decay, and also the seed-pods, if seeds are not wanted.

### The Pansy.

This dry hot weather is very trying to the Pansy. The plants must be freely watered, and even then many of them will die off. Green-fly is also very abundant, which cripples the plants and prevents their blooming. A reddish species, small in size and peculiar to the Pansy, clusters thickly round the points of the young shoots and stops their development. The right thing to do, as soon as dry hot weather sets in, is to take cuttings from the whole of the plants, dip them in soft-soapy water, and plant them in a shady place, using light sandy loam. Many of the old plants will die off suddenly, and they would be lost but for this precaution of taking cuttings. It is now a good time to sow seeds, they will produce strong vigorous plants before the winter. A bed of seedling Pansies is a very beautiful object in any garden, and they stand the hot weather much better than the choice named varieties propagated by cuttings. The principal points in their culture are a rich deep soil to grow in, abundant supplies of water as soon as hot weather sets in, and keeping the leaves free from insect pests.

### Ranunculi and Tulips.

The roots of these have been taken up and stored for the season. Both of them flowered beautifully this year, and without any special preparation of the ground, except in the case of the Ranunculi, a few inches of fine peat (the siftings from the Orchid pottings) was laid on the surface, a little of the ordinary garden soil was stirred up with it, and so well have they grown, that the stock of roots is increased fourfold. If the ground intended to be planted with Tulips can be trenched and manured now, it would be well to do so; the exposure to heat and rain alternately brings the ground into capital condition for planting in November. *J. Douglas.*

## DISEASE OF BULBS.

Gumming of Roman Hyacinths.—Sometimes Roman Hyacinths, although imported to this country in an apparently sound and healthy condition, deteriorate and perish by gumming before the time of planting arrives. If the unsound examples are planted they perish in the ground, or if they are only slightly affected they do not flower. The diseased bulbs exhibit an exudation of gum, generally at the crown, or, more rarely, at the sides; in bad examples they swell and soften, gum bursts through the entire surface, and the bulbs at length putrefy. The external aspect of a slightly affected bulb is shown in fig. 32, and a section in fig. 33. The gum generally forms a kind of seal at the crown, through which the flowering shoot within (even if sound) cannot penetrate. As will be seen in the sectional drawing, the gum is produced in the heart and between the scales. On a microscopical examination of the soft thick gum it is found to be thickly traversed by the mycelium of one of the blue mould fungi, Penicillium crustaceum, Fr. The gum when removed from the bulbs and placed under favourable conditions for growth generally produces the fruiting condition of this fungus from the mycelium within. The Penicillium, it is supposed, cannot set up decay in perfectly sound substances, but it doubtlessly greatly accelerates decay when it once alights on any slightly bruised or unhealthy surface. It is also certain, as we have proved by experiment, that the gumming increases in the bulbs as the fungus extends in growth. It appears, then, probable that the Penicillium spores are imported with and inside the bulbs, and that if the bulbs receive any slight bruises or other injuries, in packing or transit, gumming is started; the gum is a pabulum exactly suited to the fungus, and the Penicillium spores germinate and grow in this material. The gum, with its contained growing fungus, by irritation increases the gumming. The gum, with its fungus, is probably capable of setting up gumming in other bulbs by contact. Every bulb, therefore, which shows the slightest trace of gumming should be removed and burnt, for it is probable that by the exuded gum the disease is extended from one bulb to another in collections.

Nurserymen and gardeners often complain of Lily bulbs, especially imported bulbs of Lilium auratum, becoming rotten. The damage is caused by slight injuries to the scales received in the process of packing in Japan, and perhaps sometimes from the bulbs being lifted whilst immature and packed whilst in a damp state and before the bulbs have sufficiently parted, by drying, from their superabundant moisture. The Penicillium, which is present everywhere, cannot, in the first instance, cause disease, it lives on the juices of the bulbs which have been set free by breaking and bruising. The fungus, however, acquires greater potency over the bulbs when it has once fixed on the exuded juices, and then it has the power of rapidly extending in size the originally damaged parts. In examples of this class the outer fleshy scales of the bulbs are soft, and on a microscopic examination



Fig. 32.—Gumming of Roman Hyacinth: external aspect. Nat. size.

they are found to be permeated by the mycelium of the fungus above mentioned, viz., Penicillium crustaceum, Fr. The fungus can almost invariably be traced to injured places or bruises.

In bad cases cure is hopeless, as the heart of the bulb is perished; in slight cases dryness and dry heat will have a tendency to stop the growth of the fungus and arrest the rot. The decayed parts should be carefully cut away with a sharp, clean knife, and the cut surfaces dusted with powdered charcoal, or powdered lime. In no cases should the bulbs be planted in humid soil till the cut places have completely healed. In slight cases immersion in a one



Fig. 33.—Gumming of Roman Hyacinth: section through bulb, showing gumming. Nat. size.

per cent. solution of carbolic acid would probably destroy the fungus growths: the water containing the acid should be allowed to quickly drain away from the bulbs in a dry place. The bulbs should be quite dry at the time of planting, and the pots or beds in which the Lilies are grown should be thoroughly well drained.

In an early number of the *Gardeners' Chronicle* we shall fully illustrate and describe Penicillium crustaceum, Fr., together with Aspergillus and Mucor, fungi which play most important parts in the decay of fruit, &c.

Mr. Albert Michael reports that gumming in bulbs is in the first instance caused by the attack of an Acarus or mite named Rhizoglyphus Robini (gen. of Tyroglyphidæa). This Acarus is supposed by some observers to be a parasite on a Phylloxera, but the idea is not supported by Mr. Michael. The mite attacks bulbs between the scales, where it deposits its eggs. Such attacks would undoubtedly start gumming.

Sometimes the bulbs of Snowdrops and Tulips and the corms of Crocus exhibit small pale-coloured, but at length black flattened sclerotia in their outer coatings. A sclerotium is a little nodular mass of compacted mycelium (or fungus spawn) in a resting or hybernating state. These little masses are sometimes no larger than a pin's point, many are about the size of a mustard seed, or a little larger. The black sclerotia outwardly resemble Sclerotium complanatum, Tode, a compact mycelium very common on fallen leaves, especially of the Elm. When examined in section the bulb sclerotia are, however, seen to be different, as they exhibit the structure of the minute loosely compacted sclerotia which give rise to Mucor subtilissimus, Berk., in Onions. The germinating sclerotia of Onions are highly destructive to the bulbs, and there can be no doubt but the bulbs of Snowdrops and Tulips and the corms of Crocus are often destroyed by a fungus allied to the Onion Mucor. All bulbs which exhibit disease should be burnt or deeply buried, and on no account should bulbs be planted a second season where the little black sclerotia have been proved to exist. The sclerotia probably rest in the decaying vegetable material, or in the ground, during the winter months and germinate in the early spring. It is obvious, therefore, that if they germinate near plants as different as possible from the nurse plants, they will probably perish from want of a suitable host.

A brick-red fungus which sometimes forms dull red patches on Potatos, Acrostalagmus cinnabarinus, Corda., frequently attacks bulbs of Lilies and corms of Gladioli. The Gladiolus is also sometimes affected by a kind of Smut fungus named Urocystis gladioli, W. Sm. *W. G. Smith.*

## HOME CORRESPONDENCE.

**Planting Winter Stuff.**—In this dry season it will be found of advantage, in light soils especially, to plant between the rows of Potatos such sorts as Savoys, Kale and Broccoli. These in good garden soils will grow sufficiently large for home consumption without the use of manure put in for the crop itself, and will be found to withstand frost better than others forced into sappy growth by over-much manure. The bottom of the furrows between the rows of Potatos contains some moisture in the warmest weather; it is also firm—another advantage; and will be better if not loosened with a fork, as this would make it less suitable for the plants, and would dissipate likewise much of the moisture present. *M.*

**Royal Horticultural Society's Committes and Judges.**—It appears desirable to direct attention to a small difficulty that accompanies the formal business at South Kensington at times when committees meet and exhibitions are in progress. The manager of an exhibition (whether Royal Horticultural or special) finds it convenient to select for judging members of committees, and it is at that point the difficulty begins. For example, I was at the table as member of Floral Committee at the usual hour on Tuesday last, but being appointed with my friend, Mr. John Fraser, to judge Carnations, I did not sign my name in the committee book. [Why not? The book was on the table. Ed.] At the end of the year, when the attendances are counted, my total will be diminished by as many occasions as I have been absent from the table, in order to operate in the larger field. For myself I am not speaking, being content to be usefully employed, and the final counting of signatures does not trouble me. But having set forth the facts, I wish to direct attention to their injurious tendency. If I ask a member of committee to assist in judging an exhibition that may happen to be in my charge, he will possibly decline to act, on the ground that the omission of his name from the committee book will diminish the total of his attendances. I have had to face this difficulty and lose the aid of good men who were otherwise willing. I see others, who are sufficiently burdened with cares of management, troubled in the like manner; and the question suggested by the facts is to find a way out of the difficulty. It appears to me a very easy matter, and I

submit, subject to approval by the Council, a simple plan of procedure. For every meeting of committee let there be assigned in the signature-book two pages facing each other. On the left-hand page the names of members actually sitting will be entered in the usual way, and on the opposite page those of members who are at the same time engaged in the business of the exhibition. This being done, we shall have less difficulty in obtaining judges, and we shall have a complete record of personal work. *Shirley Hibberd.*

**Early Entamps Cabbage.**—Among early Cabbages getting a high character for excellence I fail to find the Early Entamps among the number. We find it both to be the earliest and best. *L. L.*

**Chrysanthemum Leucanthemum.**—I send you by this post flowers of a very handsome Leucanthemum I have growing here. You will observe they are exceptionally large: the whole plant is of a much larger stature than the ordinary Chrysanthemum Leucanthemum, of which it appears to be a form. I collected it abroad about ten years ago, I think in the Western Alps, but I most unfortunately lost the record of its habitat. It is a very handsome herbaceous plant, growing nearly 4 feet high. Flowers after the ordinary C. Leucanthemum and long before C. maximum. It is just now a mass of the large white "Daisy" flowers, some of which are 3½ inches across. *Geo. Maw.*

**Phormium tenax and other Plants in Scotland.**—The finest plant of New Zealand Flax in this district is growing in the garden of Mr. Wm. Walker, Strathkiness. Some of the leaves are nearly 8 feet in length. At present there are two flower-stems, the tallest of which is 9 feet. This bears a dozen trusses of deep crimson flowers. (I know of one catalogue and one dictionary in which white is given as the colour.) Note was taken of the rate of growth, when at its quickest. This was found to be 2½ inches in 24 hours—1½ during the day, and 1 inch during the night. The soil is strong loam, and there is but little shelter. This plant, which has flowered twice before, is a seedling from seed ripened in the open air by Dr. Traill, Orkney. In the same plot is a fine example of Veronica Traversii, 4 feet in height, 5 feet across, and completely covered with bloom. In a small cool greenhouse, amongst luxuriant native and hardier exotic Ferns, is an Adiantum pedatum, with stems 20 inches in length, and leaves almost 2 feet from tip to tip. *J. W., St. Andrews, N.B.* [The usual colour of Phormium tenax is orange. Ed.]

**The Potato Crop in Middlesex.**—The change which has come over the general aspect of the Potato crop since I penned the first remarks concerning its appearance and prospects in this district, which you inserted last week, is at once remarkable and distressing. Three weeks of autumn drought accompanied with great heat has told upon the plants with disastrous results, and the larger portion of the early kinds may be said to be dying off rather than ripening. The tubers are very small, though of course sound, and as a result the price in the market is advanced, although not sufficiently to counterbalance the loss in bulk incidental to the drought. Even if the growers found prices so advanced that the increase sufficed to recuperate the loss in bulk, the consuming public would, of necessity, be sufferers, and then we see how speedily a short crop at home acts upon the markets, and how terribly our vast population would suffer, were our food supplies restricted by import duties. With respect to the later kinds there is yet not a great deal to complain of, although it is certain that nothing less than a heavy ground rain of twenty-four hours' duration can save these either from early collapse or later supertuberation. The remarkable drought of last year was, up to this time of the year, productive of far less disastrous results to the Potato crop than is seen this season. The plants are also much infested with aphis. This drought has shortened the duration of the Pea crop, and smothered the plants with blight. The seed crop will probably be a limited one, though a well hardened sample. Runner Beans are blooming freely but setting badly, and of all the winter Cabbage tribe enormous difficulties are found in planting out with soil so hard and dry. The drought is also telling upon the Apple, Pear, and Plum trees; fruit is falling fast, or is very small. After all, the brilliant prospects of the spring seem to be fading into remote distance as the summer and the drought go on. *A. D.*

**Fertilisation of the Passion-Flower.**—My experience tends to prove that no general law can be formulated as to the fertilisation of the Passiflora tribe. Darwin states that, according to the accounts he had received, "quadrangularis" never produced fruit with its own pollen (*Animals and Plants under Domestication*, vol. ii., p. 137), at the date of the publication of that book. I had for many years been growing the variety, and rarely if ever failed in fertilising it with its own pollen; but no flower ever produced fruit unless the pollen was artificially transferred to the stigma, clearly proving that the fertilisation was not due to other pollen. Afterwards I grew another strain of the same variety, but I never succeeded in fertilising a single flower with the pollen of the same plant, while I set as many as I wanted with the pollen of "kermesina." On the other hand "fœtida," remarkable for its beautiful mossy involucrum, without assistance produces as many fruits as flowers. The fruit of this variety, described in Curtis' *Botanical Magazine*, as being "dry, inflated," is with me juicy, high flavoured, and liked by many. *Edmund Tonks, Knowle, July 25.* [Please send specimen for confirmation. Ed.]

**A Firm Path.**—Mr. Darwin, in his interesting book on the earth-worm, tells us something of the labours of that humble creature. There is abundant evidence of such labour in a road from Greenhill to Headstone. It was made some fifteen years ago, the road and path being covered from 6 to 9 inches deep with Harrow Weald gravel. On the path by the side there is now a firm, smooth sward, nearly 2 inches thick, entirely due to the labours of earth-worms. Probably in another fifteen years scarcely a vestige of the works of the human road-makers will remain to be seen, so effectually are these lowly workers levelling up. *T. W., Harrow.*

**Sweet Peas from Boreatton Park.**—A charming lot of new Sweet Peas has been forwarded by Mr. Henry Eckford, from Boreatton Park, Baschurch, the flowers of great size, brilliantly coloured, distinct, and very fine. The latter quality, no doubt, is partly owing to the increased size seen in the new varieties previously raised by Mr. Eckford, and partly to his method of culture. Instead of following the somewhat barbarous practice of sowing the seeds thickly in a line—too thickly, indeed, for the plants to have sufficient space in which to develope themselves, and there is such a drain upon the soil that when a time of severe drought comes like that through which we are now passing, the flowering time is very short, if the plants are allowed to set their seed-pods. If the old method is to be followed it would be much better to sow in a well manured trench like that used for Celery, so that a mulching could be given in hot weather, with plenty of water when necessary, and the earliest decaying flower-stems be cut away. Mr. Eckford grows his Sweet Peas either singly or in clumps of two or three plants in well manured soil; the result is that the individuals grow freely, branching profusely, and become perfect pictures of floral beauty, producing very fine blossoms. The following are the new varieties sent by Mr. Eckford:—Charming, magenta standards, with slight margin of purple, paling to pink towards the base, the wings and keel white, forming a wire edge of blue—very pretty indeed; Purple King, the standard bronzy-purple, with a distinct margin of clear purple, the wings bright purple—very fine, distinct, and showy; Imperial Blue, pucy standard, shading off to mauve and violet, the wings and keel bright blue—very fine, pleasing, and distinct; Duchess of Edinburgh, pale bright orange-carmine standard, very rich in colour, and effective, the wings and keel delicate magenta, shaded with violet—very bright and glowing in colour, and extremely pleasing; Rosalind, pale bright rosy-pink standard, the wings and keel delicate mauve—bright, pleasing, and very fine; Isa Eckford, the standard delicate pink, the wings and keel white, very delicately flushed with soft pink—this is very sweet and pretty; in the case of the young flowers the standards are of a very pleasing shade of buff, which changes to pink with age; Mrs. Eckford, the standard delicate pinkish-mauve, shaded to a distinct margin of mauve, the wings and keel creamy-white, with a distinct wire edge of mauve—very fine indeed, and extremely pleasing. Lastly comes Charmer, the standard of a lovely shade of delicate mauve, the white wings slightly suffused with mauve—very pleasing and pretty. It is remarkable how very few varieties of Sweet Peas put in appearance up to 1882, but now that Mr. Eckford is busy with crossing the best varieties, the results are numerous and striking. It would not now be difficult to enumerate twenty distinct varieties of Sweet Peas. The fragrant Peas are among the most valuable, as they are one of the commonest of hardy annuals. A garden, whether large or small, seems to be incomplete without some of these fragrant flowers. Mr. Eckford's new varieties appear to be very rich in perfume. When the box containing the bunches of flowers was unpacked the scent was delightfully acute. The bunches of flowers sent from Boreatton have been in water for a few days; their fragrance is still rich, and the blossoms retain it until they decay. *R. D.*

**Onosma tauricum.**—Although this fine Borage-wort has been in this country for some years it appears but little known, as it is seldom seen; and yet it is one of the most desirable of the hardy perennials, as it bears scorpioid cymes of rich citron-yellow-coloured long tubular-shaped flowers, that are very sweet-scented. The place which appears to suit this Onosma best is a somewhat elevated position where it can get good depth of soil and have free drainage, under which favourable conditions it is sure to do well. The way to propagate is by division, which should be effected in spring, just as the plants begin to grow, when they may be separated with safety; or seed may be sown. O. echioides bears a close resemblance to the one mentioned above, but this variety is a biennial, and therefore of less value, as it is more apt to be lost. *J. S.*

**Passion-Flowers.**—Replying to the Editor's inquiry (*Gardeners' Chronicle*, vol. xxiv., 1885, p. 120), I am much inclined to believe that the flowers on the specimen referred to are fertilised from neighbouring blooms by insects or other agents, since there would be many expanded on this plant at the same time; but of course the question as to whether an individual bloom would develope a fruit producing perfect seeds when fertilised by its own pollen, could be easily demonstrated by removing all the flower-buds save one, which could then be fertilised with its own pollen, and I dare say, as this is a matter of some importance, some of your readers who possess an isolated Passion-flower will try the experiment, and enlighten us on the matter at some future period. *W. Napper.*

**Fruit and Vegetable Farming.**—In the various schemes which are now before the public for the bettering of the farmers of this country, none of them seem so untenable as those advocating fruit and vegetable farming in a wholesale way. If this should ever be adopted generally over the great areas now under grain and pulse crops, the system would have but short duration, simply from want of consumers. Our country people get now almost enough of vegetables as is good for them in this climate, and fruit can here be looked only on as an adjunct to a meal, not as a meal itself. Our people, even if they could be induced to take to vegetable diet, would do so reluctantly, and it would be impossible for them to do a fair day's work on one purely vegetable. The writer recollects some years ago a number of Flemish navvies being imported during a strike on a stretch of southern railway. Now these men ate fruit and bread, did not see any virtue in beer and beef-steaks like their English compeers, and went into the town to make their purchases in carpet shoes. The contractors for the line were soon glad to give their navvies, who had struck for an addition to their pay, the sum required, and ship the Flemings back again to the Fatherland, for they saw that one good Englishman could do three times as much work as they, with apparently less exertion. Beyond the reform of our land laws, which would bring more good land into cultivation that is now laid down under grass, as parks, &c., is an increase of small farms, where the yeoman could grow hardy varieties of Wheat, not fine tender kinds like Talavera Red, and the like; Rye, which is the bread-stuff of millions in central and northern Europe; Oats, more Peas, Haricot Beans, and roots, such as Parsnips and Beets. Potatos should be less grown than they are now, for not only are they an uncertain crop, but the feeding qualities of any of the varieties is very low, the Haricot Bean being greatly its superior, besides permitting of being cooked in more

different ways. Poultry, rabbits, cows for milk, and more stock, even if it were not of the finest breeds, could be kept in greater numbers under small farm management than under large. The chief want of the day in our country is not more jam, or fruit, or vegetables, but more meat, grain, and pulse for the growing children and hard-working men and women—not forgetting that almost indispensable food for the young, plenty of good milk. If we had cheap and abundant supplies of meat, should we spend so much money with the Chinese for their Tea? I believe we should not, for meats, soups, and broths would take its place in the dietary of those who were the workers, and certainly with advantage to themselves and to the country generally. Soups of Beans and Lentils, with a small addition of fat meats, are greatly superior to either Tea or Coffee for breakfast and supper; and oatmeal, in various ways, is to be preferred to either, as every Scotchman will aver. *Haricot.*

**Everlasting Peas.**—For growing in semi-wild places, or anywhere in a garden for the supply of cut flowers, nothing can be more useful than Lathyrus latifolius, which is one of the most hardy and enduring of plants, as it will grow and flourish almost anywhere, and send up its strong shoots, which ramble and scramble up amongst hedges or bushes, and bloom profusely during two or three months of the year. Although the coloured variety is very valuable, the white kind is even more so, but both should be in every garden, and if planted at the backs of borders, in the foreground of shrubs, they will make a fine show. The way to support them there is to have a strong, tall iron guard for them to climb up, or stout bushy sticks stuck round for them to cling to, when they will form a thick mass, and produce a striking effect. Like the annual varieties, Lathyrus latifolius comes freely from seed, which may be sown as soon as it is ripe, either in pots under glass, or where the plants are to grow, or they may be propagated by division of the crowns, which should be done in the spring. *J. S.*

**Good Grape Growing.**—One of the best examples in Grape growing I have had the pleasure of inspecting this season is at Portland House, Barnstaple, which speaks well for the skill of the gardener, Mr. Westacott, whose employer is R. C. Rafarel, Esq. The vinery there is not a large one, being only about 25 × 15 feet. It is a hip-roofed building and is divided for early and succession crops. The sorts grown are Golden Queen, Lady Downe's, Muscat of Alexandria, Madresfield Court, Black Alicante, Alnwick Seedling, Duke and Duchess of Buccleuch. The Madresfield Court, which does so badly with many, is simply perfection here, some of the bunches measuring 12 inches in length and 8 inches across the shoulders. Altogether there are about 140 bunches in this house, averaging 4 to 6 lb. each, and they are remarkable for their perfect shape and very fine berries. The Vines are planted in the house, and the border extends to the outside. *W. N.*

**Lilium candidum.** — In going along country roads in this part of the country one can hardly imagine that there is any difficulty in keeping and growing the fine old Lilium candidum, such as some are said to experience, as in almost every cottage garden quantities may be seen sending up spikes, 4 to 6 feet high, and bearing great heads of its lovely, pure white blooms, the scent from which quite pervades and fills the air with strong odour. The soil all about the district where these Lilies are so abundant is of a light, dry, sandy nature, which evidently suits the bulbs, as they increase freely, and become so thick, after a time, in the clumps as to push each other out of the ground. If it could only be made to do as well in pots, and would bear gentle forcing, so as to get it in early, what a fine thing it would be for greenhouse and conservatory decoration —a purpose for which it looks specially suited. *J. S.*

**Hardy Cacti and Nymphæa alba var. rosea.**—These interesting species and beautiful plants of such opposite habits have been flowering freely at Bayfordbury, in the rock garden, in a part of it apportioned to aquatics and bog plants — the Cacti consisting of C. Opuntia, C. Rafinesquiana, C. missouriensis, and C. arborescens, of which the first and second produced about one hundred fine yellow flowers, and are now fruiting. Mesembryanthemum uncinatum, which is spreading over the rocks, is still flowering, and more freely than I have hitherto seen it. All these have proved hardy for several years past, care only being taken to keep them dry in the winter, with plenty of air. With respect to the Nymphæa it has borne this year five flowers on one plant, of a beautiful rich rose colour. I have examined one of the flower-heads which first came out, and finding it to contain plenty of well formed and nearly ripe seed, I shall have every care taken of the rest, and should be glad of any hints as to the best way of rearing them. I propose sowing the seeds in pans to be sunk some inches below the surface of the water, and kept in a greenhouse during the winter, also I should like to know where this Nymphæa has flowered elsewhere than at Kew, where I have seen it myself. *W. R. Baker.* [An account of the germination of the Victoria Lily at Kew in *Gardeners' Chronicle*, May 2, 1885, p. 568, would give you some useful hints on raising them. Ed.]

**Delphiniums.**—The perennial varieties of these are among the most striking of hardy border plants, sending up as they do very tall spikes of various shaded rich blue flowers that make a grand show and last a long time in perfection. The situation most suitable for these Larkspurs is in the foreground of shrubs, which not only afford them the necessary shelter from strong winds, but back them up well. Although they will grow in almost any kind of soil, that which suits them best is a deep light loam, as in that they do not suffer from excess of moisture and can send their roots deep down, and find the food they require. If extra fine specimens are desired, it is a good plan to dig out a hole for each plant, and work in at the bottom some rotten manure by mixing it up with a fork, when, after filling in again, the plants may be planted. The best time to do this is in the spring, just as they begin to start, at which period they may be cut through the crowns, or dug up, pulled apart, and divided, when, if planted in positions prepared in the way mentioned above, they will soon make large clumps, and a magnificent show. Delphiniums also come readily from seed, which most of the single kinds bear freely, and this may be sown as soon as it is ripe, or in spring, the first-named period being the most preferable, as plants raised during the summer will flower the following year. The way to get these up, if the seed be sown now, is to make use of a handlight, and to sow under it in sandy soil, but if left till March or April, a little heat is required to get the seed to germinate. *J. S.*

# Reports of Societies.

## ROYAL HORTICULTURAL: July 28.

The Carnation and Picotee show formed the main attraction to the public on this occasion, still there were many objects of interest in the exhibits of Messrs. Ware, J. Laing & Co., Hooper & Co., and Sutton & Sons, of Reading. The herbaceous plants of the first-named firm, the Begonias from the Stanstead Park Nurseries, and the beautiful varieties of Gloxinias from the two last, meeting with well-earned admiration. Of minor interest were the small collections of plants in pots, and the vegetables; with the exception of Pines, but little fruit appearing on the tables.

### Scientific Committee.

A. Grote, Esq., in the chair.

Pheasants Poisoned by Fungi.

Mr. W. G. Smith made some further remarks on this subject. See p. 148.

Odontoglossum nebulosum with Three Lips.

Dr. Masters reported on the flower from Dr. Duke submitted to him at the last meeting. The segments of the perianth were normal, as also the single perfect stamen. Midway from either side of the column proceeded a lip-like petal wholly detached from the lip. There was no trace of the three inner stamens, nor of the stigma.

Cones of Abies brachyphylla.

Dr. Masters showed cones of this comparatively new Japanese Conifer, grown by Messrs. Veitch, at their Combe Wood nurseries; they were of oblong form, and of a rich purple Plum-like colour, similar to those of A. Webbiana, but smaller. The tree in question is one of the handsomest and hardiest of its class, and grows rapidly. [The cone figured in *Gard. Chron.*, November 1, 1879, where the tree is described, was from a native specimen.]

Books Received.

Various donations were acknowledged for the library.

The meetings of the committee were then adjourned till November 10.

### Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. J. Laing, W. Wilks, H. Herbst, J. Child, J. James, J. O'Brien, Dr. Masters, H. Williams, H. Turner, J. Douglas, G. Duffield, J. Smith, H. Ballantine, J. Dominy, H. M. Pollett, E. Hill, — Kinghorne, W. Bealby, W. B. Kellock, T. Baines, A. Perry, J. Walker, H. Cannell.

Begonias.

A group, not exceeding fifty plants, shown by nurserymen, brought only one exhibitor—Messrs. Laing & Co., Stanstead Park Nursery, Forest Hill—who obtained the award of 1st prize for well-bloomed examples of 2 feet or more in height, double and single-flowered kinds. These showy and enduring plants, that are, if anything, better out-of-doors than indoors, are now running a close race with the zonal Pelargonium and Balsam in the estimation of the general growers.

For nine distinct tuberous Begonias, open. — 1st, Messrs. John Laing & Co.; 2d, Mr. W. Bealby, The Laurels, Roehampton Park, the latter showing novel varieties of a small size.

For six tuberous Begonias, distinct, amateurs.—Mr. Cheeseman (gr., Mr. Monk), The Hall, North Dulwich, took 1st prize, with a nicely assorted lot, full of bloom; 2d, Mr. W. Bealby; 3d, Mr. Apthorpe, Albion Brewery, Cambridge.

For six tuberous Begonias, double-flowered, distinct, open.—The veterans, Messrs. Laing & Co., were again the winners of the 1st prize, a few of the best being Mrs. Brissenden, rose; Goliath, scarlet; Mr. Brissenden, same; and The Czar, same colour. Mr. Bealby took the 2d prize, he having Bella Benary, a good scarlet; Virginalis, a white, and Blanch Duval.

Six Lilies, in not less than three varieties, open.—The prize in this competition went to Mr. Ware, Hale Farm, Tottenham, the sorts being Chalcedonicum maculatum, a deep crimson; the creamy-white Brownii, pardalinum Michauxi, an orange, with black spots—a showy kind; auratum, and Humboldtii.

Six Achimenes, in distinct kinds, amateurs, brought but few plants; a 2d prize being awarded Mr. A. Luff, gr. to R. R. Wyatt, Streatham, for well bloomed, nicely assorted varieties, the 1st prize being withheld.

Eight Gloxinias, distinct, amateurs, brought nothing that could be termed first-class, most of them being over-potted and deficient in bloom and poor in leaf.—The 1st prize went to Mr. Waite, gr. to Colonel W. P. Talbot, Glenhurst, Esher; and the 2d to Mr. A. Luff.

In the collection of carnivorous plants, Mr. H. James came out strongly in Sarracenias, Nepenthes, Dionæa muscipula, Drosera capensis, and Cephalotus follicularis. He was awarded 1st prize, and Mr. A. Luff the 2d—this latter grower showing a much smaller collection of plants of a diminutive size.

A contest with twenty-five miscellaneous plants in flower, in 8-inch pots (open), resulted in a few groups being staged; but the condition as to size of pot determined the size of the plants, consequently there was nothing shown that calls for special notice. Mr. James, Castle Nursery, took 1st prize, the best things he had being Agapanthus umbellatus albus, Thunia Bensoniæ, an old but yet rare plant, with deep purple blooms; and Tilandsia splendens. Mr. A. Luff was awarded the 2d prize.

Cut Flowers.

A class for cut flowers of herbaceous plants seemed in danger of falling through but for the entry of Mr. T. S. Ware's grand group, which was, if judged relative to the awards made in other classes, worth many times the sum given as a 1st prize. Whilst comprising specimen bunches of all the best hardy flowers in season it was also helped by some gigantic bunches of Lilium auratum, other Lilies being also shown; Phloxes and Irises in great variety, Gaillardias, Lythrums, especially the beautiful roseum superbum; Poppies, &c; and not least striking, a big bunch of the pretty white-flowered Gypsophylla paniculata, so useful for decorating vases and epergnes. This same exhibitor had the only lots of Pentstemons staged, the flowers being shown as twelve bunches rather than as twelve spikes, as specified in the schedule; these, unfortunately, seemed to have suffered materially from the heat. Mr. Ware also took the 1st and only prize awarded for twelve cut spikes of Pentstemons; these were distinct and very pretty.

Miscellaneous.

Messrs. Hooper & Co., Covent Garden, London, showed a large collection of French spotted varieties of Gloxinias associated with small Maidenhair Fern. The colouring of most of them was remarkable for prettiness, and had the plants not been so crowded whilst growing they would have been furnished with better foliage. A Silver Banksian Medal was awarded. Messrs. Sutton & Sons, Reading, showed a still larger collection of robust habit, the colours being strong, well defined, and foliage all that could be desired. We were informed the plants are the produce of seeds sown in January last. A Silver-gilt Medal was awarded in this case.

Messrs. J. Laing & Co. received a similar award for a splendid assortment of cut blooms of Begonias, and Messrs. J. Veitch & Sons for Carnation blooms.

A capital strain of Balsam was shown by Messrs. F. Smith & Co., Dulwich, for which they received a Bronze Medal.

From Messrs. Veitch & Sons, Chelsea, there were Piper ornatum, a pretty stove climber with green cordate leaves marbled with white, very distinct, would contrast well with Cissus porphyrophyllus; Tillandsia rhodocena, a Bromeliad with a pink peduncle and bracts, the flowers being pale blue, and not conspicuous—a handsome plant; Rhododendron Nemesis, with flowers in a rather loosely formed corymb, the colour orange—a showy plant, and seemingly a strong grower for a tender hybrid; Cypripedium Sedeni caudatum, a variation from the better known C. Sedeni—it has pink and white flowers, with a white bloom diffused over them; Cypripedium Morganiæ, a tall flowered specimen, the sac of claret colour and wings of 3 inches in length, green, densely spotted with circular markings of brown. Some hardy hybrid Gladioli of curious and distinct colours were also exhibited from the Chelsea nurseries, as also a panful of plants of the dense white-flowered Olearia Haastii.

The Hon. Rev. J. Boscawen, Lamorran, Cornwall, showed a large specimen of Lælia purpurata, bearing five spikes of four flowers each, the individual flowers being large and well coloured. A Vote of Thanks was awarded him.

Messrs. J. Carter & Co., exbited some dwarf varieties of Marigold, African and Orange.

Mr. W. Bealby showed zonal Pelargoniums, Rosa Bonheur, and another which received a Certificate. A deep crimson Dianthus, named Napoleon III., was sent by Mr. Dobson, Altrincham, which obtained a Vote of Thanks.

Mr. Pollett, Fernside, Bickley, showed a small plant of Cattleya calummata much resembling in some respects C. Aclandiæ, and an Odontoglossum crispum spotted in a distinct manner with brown. A Vote of Thanks was given to Mr. Pollett for each.

A plant in flower of Cienkowskia Kirki was shown by Mr. B. S. Williams, Holloway Nurseries.

Mr. James showed a neat growing, pure white Lobelia named Florrie Wood, which had been recognised by a First-class Certificate in 1883.

### CERTIFICATED PLANTS.

Some fine border Carnations came from the Chelsea nursery of Messrs. J. Veitch & Sons. The blooms were large, full, and showed admirably what cultivation can do for this class of flowers in London itself.

Rhododendron incarnatum floribundum with corymbs of pink tubular blossoms, and the whole plant of floriferous character, in a yonng state, came from the same nurseries, as did also R. Indian Yellow. The colour of this hybrid was very pure, and was nicely contrasted with the red stamens; the foliage was long and of much substance. Begonia Thwaitesii, a dwarf variety with bronzy-green foliage, covered with reddish hairs, and pink leaf-stalks, was remarked as being a distinct and useful thing.

Mr. Ware had a pretty plant in Dracocephalum virginicum album, the flower-spikes of Pentstemon-like blooms being of the purest white; Campanula Hendersoni, a dwarf pale blue species; and Helenium pumilum, a flower with rays of a bright yellow colour and a greenish-yellow disc, were distinct plants.

Mr. W. Bealby showed Pelargonium Paul Charbonnier, a semi-double scarlet zonal of fine form and great substance. He likewise had an Ivy-leaf variety named Josephine von Hohenzollern.

Messrs. Cannell & Sons, Swanley, Kent, showed Carnation The Governor, a flower flesh-white in tint, with incurving petals of great substance and fairly double.

Messrs. J. Carter & Co.'s dwarf orange African Marigolds met with the recognition of the judges.

The Begonia with double flowers—Marquis of Stafford—shown by Messrs. Laing & Co., was a handsome double bloom of good substance; and Messrs. Sutton & Sons' Hybrid bedding Begonia Prince Henry is likely, from its hardy character and flowering habit, to make a useful flower garden plant.

Mr. Cannell likewise showed a Begonia, thought to be suitable for the same purpose, named Marchioness of Lothian; and B. Picotee, a plant having flowers with pointed petals, rosy-scarlet tipped with white: it is distinct and pretty.

### FIRST-CLASS CERTIFICATES.

To Messrs. J. Veitch & Sons, for border Carnations.

To Messrs. J. Veitch & Sons, for Rhododendron incarnatum floribundum.

To Messrs. J. Veitch & Sons, for Begonia Thwaitsii.

To Messrs. H. Cannell & Sons, for Carnation The Governor.

To Messrs. H. Cannell & Sons, for Begonia Marchioness of Lothian.

To Messrs. H. Cannell & Sons, for B. Picotee.

To Mr. W. Bealby, for zonal Pelargonium Paul Charbonnier.

To Mr. W. Bealby, for Pelagonium Josephine von Hohenzollern. [Stafford.

To Messrs. J. Laing & Co., for Begonia Marquis of

To Mr. Ware, for Dracocephalum virginicum album.

To Mr. Ware, for Campanula Hendersoni.

To Mr. Ware, for Helenium pumilum.

To Messrs. J. Carter & Co., for Marigold African Orange.

To Messrs. Sutton & Sons, for Begonia Prince Henry.

## Fruit Committee.

Present: H. Veitch, Esq., in the chair; and Messrs. A. Sutton, J. Willard, S. Lyon, J. Burnett, T. F. Rivers, C. Silverlock, J. Lee, G. Bunyard, R. D. Blackmore, T. B. Haywood, J. Ellam, H. Webb, G. T. Miles, Chas. Ross.

Messrs. Sutton & Sons, Reading, kindly offered valuable prizes for collections of eight kinds of vegetables, and some eight lots were staged, the quality, however, hardly equalled that shown at the previous show. Mr. Richards, gr. to the Earl of Normanton, Somerley Park, Ringwood, was fortunate enough to be again placed 1st, as then having good examples of London Cauliflower, Duke of Albany Peas, Canadian Wonder Beans, Perfection Tomatos, International Potato, &c. Mr. Waite, gr. to the Hon. Col. Talbot, Esher, was a close 2d, indeed it was a near chance of his being 1st, his examples were so good; he had handsome Snowdrop Potatos, fine Autumn Giant Cauliflowers, good Stamfordian Potatos, John Bull Peas, &c. Mr. Haines, gr. to the Earl of Radnor, Coleshill, was 3d; Mr. T. A. Beckett, Penn, 4th; and Mr. Neighbour, Bickley Park, 5th—this last exhibitor had the best samples of Sutton's All Heart and Earliest of All Savoy Cabbages, very white and solid, and the next best were staged by Mr. Osman, the District Schools, Sutton, Surrey.

### FRUIT.

A very fine exhibition of eighteen Smooth Cayenne Pine-apples, the best lot seen for many years at exhibition tables, was sent from the Castle Hill Gardens, South Molton, Devon (gr., Mr. R. Nicholas). Most of the fruits were quite ripe, or approaching ripeness, and were free externally from all blemish, the weight averaging 6 lb. each. A Silver Banksian Medal was bestowed.

Mr. Faulkner, Inkpen, Hungerford, showed Raspberry Lord Beaconsfield; and Mr. Merryfield, gr., Walderham Park, Dover, a fine looking seedling Raspberry, crimson in colour, and conical in shape.

Seedling Melons were shown by Mr. Ross, gr., Welford Park, and by Mr. Worseley.

## The National Carnation and Picotee Society (Southern Section).

THE annual exhibition of Carnations and Picotees took place as usual in the conservatory, and notwithstanding that the weather had proved excessively hot and trying for the flowers, striking down many of them even before they could possibly become perfectly developed, yet the representation of the Carnation and Picotee was so good as to excite snrprise: the Carnations shown by Mr. C. Turner, and the Picotees by Mr. Douglas were very fine, pure, rich in colour, full and massive. The bulk of the exhibition was smaller than usual, but those connected with the management of the exhibition had much reason to congratulate themselves on the success that attended their efforts, and the general public appeared to be greatly interested in the flowers staged for competition.

### CARNATIONS.

In the class for twenty-four blooms of Carnations, not less than twelve varieties, Mr. C. Turner, Royal Nursery, Slough, was 1st, with a superb lot of blooms, large in size, of fine quality, and brilliantly coloured. The varieties were:—Scarlet bizarres: Robert Lord, Arthur Medhurst, and Fred; crimson bizarres: Master Ford, E. S. Dodwell, H. K. Mayor, William Hewitt, and John Harland; pink and purple bizarres: Sir Garnet Wolseley, Sarah Payne, James Taylor, and William Skirving; purple flake: James Douglas; scarlet flakes: John Ball and Henry Cannell; rose flakes: Rob Roy, Jessica, and Sybil. 2d, Mr. James Douglas, gr. to F. Whitbourn, Esq., Great Gearies, Ilford, with S.B., Robert Lord, Fred, Joseph Crossland, Master Stanley; C.B., Master Fred, Samuel Barlow (Dodwell); P. and P.B., Sarah Payne, Moore's No. 8, Mrs. Barlow (Dodwell), and Miss Gorton (Dodwell); P.F., F. Whitbourn, James Douglas, and Florence Nightingale; S.F., Henry Cannell, Seedling (Douglas), and Matador; R.F., Sybil, Rob Roy, and Seedling No. 4. 3d, Mr. John Hines, 81, Bransford Road, Ipswich; 4th, Mr. F. Hooper, Vine Nursery, Widcombe Hill, Bath; 5th, Mr. T. Garratt, South Mill, Bishops Stortford.

With twelve blooms, dissimilar, Mr. Joseph Lakin, Temple Cowley, Oxford, was 1st, with S.B., Robert Lord, Fred. Rayner, Johnson, and Admiral Curzon; C.B., Thomas Moore; P.P.B., Captain Owen (Dodwell), and Thomas Austiss (Dodwell); P.F., Seedling (Dodwell), James Douglas, and Sarah Payne; and R.F., Dolly Varden (Dodwell). 2d, Mr. J. Douglas, with S.B., Admiral Curzon, Robert Lord, and Joseph Crossland; P.P.B., William Skirving, Seedling, Mrs. Gorton, and Sarah Payne; P.F., Florence Nightingale and James Douglas; S.F., Matador; R.F., Seedling. 3d, Mr. J. Buxton, 27, Manor Street, Clapham, whose best flowers were S.B., John Hines, Edward Adams; P.F., James Douglas; P.P.B., Sarah Payne; R.F., Sybil; 4th, Mr. John Hines; 5th, Mr. T. Garratt.

The best six blooms came from Mr. M. Rowan, 36, Manor Street, Clapham, with S.B., George; P.P.B., William Skirving and E. S. Dodwell; P.F., Florence Nightingale; S.F., Clipper; R.F., Jessica. 2d, Mr. Thos. Austiss: S.B., George and Robert Lord; C.B., Harrison Weir; P.P.B., Sarah Payne; P.F., Florence Nightingale; and S.F., Henry Cannell. 3d, Hudson Morris, Esq., The Nest, Hayes, Kent (G. Wynne, gr.), with very large full blooms of P.P.B., Sarah Payne; S.F., Jupiter; R.F., Sybil; and P.F., Mayor of Nottingham, Earl of Wilton, and Florence Nightingale. 4th, A. Spurling, Esq., The Nest, Blackheath; 5th, Mr. C. Glasscock, South Street, Bishop Storford.

Then followed five prizes in each of the six divisions into which the Carnations are divided, and they were awarded as follows:—S.B., 1st, Mr. J. Douglas with Arthur Medhurst, and 2d with the same; 3d and 4th, Mr. C. Turner, with Robert Lord; 5th, Mr. J. Lakin, also with Robert Lord. C.B., 1st, Mr. C. Turner, with John Harland; 2d, Mr. J. Douglas, with a bright-coloured Seedling; 3d, Mr. J. Lakin, with Master Fred; 4th, Mr. J. Douglas, with the same; 5th, Mr. J. Lakin, with Thomas Austiss; P.P.B., 1st, Mr. C. Turner, with Sarah Payne; 2d, Mr. J. Douglas, with William Skirving, and 3d with the same. 4th, Mr. C. Turner, with James Taylor. 5th, Mr. T. Austiss, with Dr. Symonds. P.F., Mr. C. Turner was placed 1st and 2d, with James Douglas; and Mr. Douglas was 3d and 4th with the same. A flower named Sporting Jack was 5th, but no exhibitor's name was attached to it. S.F., 1st, Mr. C. Turner, with Matador; 2d, Mr. J. Douglas, with Henry Cannell; and 3d, with Sportsman. 4th, Mr. Lakin, with Tom Lord. Dan Godfrey was 5th, without an exhibitor's name. R.F., Mr. C. Turner was 1st and 2d, with Rob Roy. Mr. Douglas was 3d and 4th with the same; and Mr. J. Lakin 5th, with Sybil. The Premier Carnation was S.F. Rob Roy, a magnificent flower in Mr. Turner's 1st prize stand of twenty-four varieties.

### PICOTEES.

Turning to the Picotees, Mr. Douglas was placed 1st, with a fine stand of twenty-four blooms, not less than twelve dissimilar varieties, remarkable for the purity of the blooms, and their finely formed petals, having red-edged Mrs. Bower, Mrs. Gorton, Prince of Wales, and Violet Douglas, Purple-edged, Baroness Burdett-Coutts, Her Majesty, Jessie, Mrs. A. Chancellor, and Muriel. Rose-edged, Constance Heron, Mrs. Payne and Royal Visit; 2d, Mr. C. Turner, with very large and full-flowered, but lacking the refinement found in those forming Mr. Douglas' stand, his varieties being Juliette, Mrs. Bower, Her Majesty, Thomas William, a lovely light purple-edge, Baroness Burdett-Coutts, Muriel, Dr. Epps, Robert Scott, Favourite, Lucy, Brunnette, Dr. Abercrombie, Constance Heron, Mrs. F. Ricardo, and seedlings. 3d, Mr. John Hines, whose best flowers were Clara Penson, John Smith, Edith D'Ombrain, Mrs. Bower, Lady Louisa, Royal Visit, and Mrs. Horner. 4th, Mr. F. Hooper, Bath. Mr. Douglas had the best twelve varieties, also staging Brunnette, Princess of Wales, Violet Douglas, Liddingstone Favourite, Jessie, Mrs. Payne, Her Majesty, Constance Heron, Miss Wood, Zerlina, and Mrs. Gorton. 2d, Mr. Joseph Lakin, with Premier, Constance Heron, Jessie, Brunnette, Mrs. Payne, John Smith, Mrs. Rudd, Favourite, Clara Penson, Mrs. A. Chancellor, Thomas William, and Royal Visit. 3d, Mr. John Hines. 4th, Mr. J. Buxton; 5th, Mr. T. Garratt.

Mr. T. Austiss, Brill, had the best six blooms, staging John Smith, Liddingstone Favourite, Purple Prince, Mary, Clara Penson, and Mrs. Bower; 2d, Mr. M. Rowan, with Dr. Epps, Nellie, Muriel, Clara Penson, Edith D'Ombrain, and Thomas William; 3d, Mr. C. Glasscock; 4th, Mr. H. Cattley, 16, Cavendish Buildings, Bath; 5th, Mr. H. Startrip, 3, Stanley Road, Bromley.

In the classes for single flowers in each division, the awards were—Heavy red edge: 1st, Mr. J. Douglas, with Brunnette, and 2d with Princess of Wales; 3d, Mr. Sanders, with Dr. Epps; 4th, the same with J. B. Bryant; 5th, Mr. C. Turner, with Brunnette. Light red edge: 1st and 2d, Mr. J. Douglas, with Thomas William; Mr. C. Turner 3d, with the same; 4th, Mr. Rowan, with the same; 5th, Mr. C. Turner, with Violet Douglas. Heavy purple edge: 1st, Mr. J. Douglas, with Muriel; 2d and 3d, Mr. C. Turner, with the same; 4th, Mr. J. Douglas, with Chancellor; 5th, Mr. Sanders, with Zerlina. Light purple edge: 1st and 2d, Mr. J. Douglas, with Her Majesty; 3d and 4th, Mr. C. Turner, with Juliette; 5th, Mr. Sanders, with Her Majesty. Heavy rose edge: 1st, Mr. Hines, with Edith D'Ombrain; 2d, Mr. C. Turner, with seedling; and 3d, with Mrs. Payne; 4th, Mr. J. Douglas, with Mrs. Payne; and 5th, with Constance Heron. Light rose edge: 1st, Mr. C. Turner, with Liddingstone Favourite; and 2d, with Lucy; 3d and 4th, Mr. J. Douglas, with Liddingstone Favourite; 5th, Mr. J. Lakin, with Empress Eugénie. The premier Picotee was Liddingstone Favourite, light rose-red, in Mr. J. Douglas' 1st prize stand of twelve varieties.

### NEW CARNATIONS AND PICOTEES.

In the classes for seedlings in the C.B. division Mr. J. Douglas was 1st, with Rosamond, very bright, stout in texture, good petal, and full; and a First-class Certificate of Merit was also awarded to it. In the P.P.B. division Mr. Douglas was 1st, with Grace, a full bright-looking flower, of excellent quality; and a First-class Certificate of Merit was also awarded to it. In the rose flake division Mr. Douglas was 1st, with Margaret, a good addition to this class; and a First-class Certificate of Merit was also awarded; and he was 2d, with Thalia. In the division for light red edged Picotees Mr. Douglas was also 1st, with Dr. Horner, a seedling of the Rev. F. D. Horner, a stout fine petalled variety, with a wire edge of bright rose; also awarded a First-class Certificate of Merit.

### SELFS, FANCIES, AND YELLOW GROUNDS.

What a brilliant and pleasing display these made; and the public gathered about the stands as if highly delighted with their gay and effective colours. Mr. Turner had the best twenty-four, not less than twelve dissimilar varieties, consisting of fine blooms of The Governor, Harry Matthews, Edith, Jupiter, Grandiflora, Colonel Ward, Princess of Battenberg, William Skirving, Lady Stamford, Rosa Bonheur, Cento d'Orion, Guardsman, Robert Lord, Polly Cheetham, Florence, Janira, Mrs. Logan, E. Adams, Mary Morris, and Chromatella. 2d, Mr. J. Douglas, with a very good lot also, consisting of Fire King, John Keet, Florence, Princess of Battenberg, Sport, Edith, Rosy Morn, Negro, Juliet, and Fancy. The great variety seen in the character of the

flowers was most marked in these stands, and especially that from Slough. 3d, Mr. T. Hooper; 4th, Mr. H. Cattley; 5th, Mr. G. Meddick, florist, Bath.

Mr. T. Lakin had the best twelve, staging some superb flowers, consisting of Sir Toby Belch, very fine, crimson flaked with black; Queen, John Soper, Mrs. A. Medhurst, Mrs. Mostyn, Dean Ward, Hudson Morris, Mrs. H. Morris, Ruby, May, and a seedling. 2d, Mr. Hudson Morris, Hayes; 3d, Mr. Thomas Austiss, Brill; 4th, Mr. A. Sparking. This collection contained a very beautiful unnamed yellow seedling. 5th, Mr. W. Meddick.

Mr. Turner had the best twelve blooms of yellow-ground Picotees, the flowers large and very full, and of striking quality, the sorts Prince of Orange, Mrs. Colman, Ne Plus Ultra, Dove, Lady M. Lascelles, Princess Margaret, Mazzini, and Princess Beatrice. 2d, Mr. J. Douglas, with fine blooms of Daphne, Clio, Euphrosyne, Janira, Lightning, Ne Plus Ultra, and Queen Margaret. 3d, Mr. H. Cattley; 4th, Mr. F. Hooper.

PLANTS IN POTS.

The best nine of these came from Mr. C. Turner, who had well grown and flowered plants of Favourite, Miss Small, Matador, Juliana, King of Yellows, Jessica, Miss F. Ricardo, Jupiter, and Lady Stamford—a collection representative of small types of flowers. 2d, Mr. J. Douglas, with finely grown and flowered plants, he being the only other exhibitor. We were pleased to see that the throttling horse-collars were dispensed with in this section.

There were several valuable honorary contributions of cut blooms of Carnations, Picotees, and Cloves. Foremost was that from Messrs. James Veitch & Sons, a Carnation and Picotee Show in itself, and a very instructive one too. There were eight boxes of flowers, two each of Carnations and Picotees, and four of Cloves. Among the former were fine blooms of S.B., Harry Turner, Admiral Curzon, True Briton, John Hines, George, Robert Lord, Charles Turner, and John Burnett; C.B., Gracilis, John Harland, A. D. Southgate, and Harrison Weir; P. and P.B., Princess Beatrice, Squire Llewellyn, and William Skirving; P.F., Ada, Ajax, Earl of Wilton, Purple Prince, and Juno; S.F., Lord Lyons, Flirt, John Ball, and Jupiter; R.F., Jessica, Lord Chelmsford, Rose of Stapleford, and Sybil. Picotees: Red edge: Dr. Epps, Ensign, Hilda, Lothair, Mrs. Fuller, Mrs. Keynes, Picturata, and Queen of Summer. Purple edge: Alice, Baroness Burdett-Coutts, Mary, Mrs. A. Chancellor, Mrs. H. Hooper, and Princess Dagmar. Rose edged: Edith D'Ombrain, Lady Boston, Louisa, Miss Gibbs, Mr. Payne, Mrs. Rayner, Mr. Webb, and Royal Visit. The Clove and fancy flowers comprised a large representation of the best varieties. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had stands of cut blooms, and also two boxes of bunches of Cloves and Picotees, including some pretty varieties. This was a novel innovation, and should be more fully recognised by the Society in the future; Mr. H. Cannell also had some cut blooms; and Mr. Toly, of 3, St. Mark's Grove, Chelsea, had a collection of Cloves grown in his garden.

It would greatly assist the instructive value of this exhibition if, in the future, it were made compulsory that in naming the flowers the class, such as C.B. or S.F., &c., should be set forth, and also the division to which the Picotees belong. Those whose business it is to report the show would be grateful also, as it would prove an invaluable aid in preparing a rapid and accurate report.

## NEWCASTLE HORTICULTURAL AND BOTANICAL: July 22—24.

THIS important exhibition was held at Leazes Park in a large marquee that consisted of three large spans, and usually used for the exhibits in former years. The show was perhaps the finest ever held in the North of England, and reflected the greatest credit upon the committee, who have been working heavily handicapped by not having the support they deserved from the influential bodies of canny Newcastle. They have, however, struggled well, and through offering good prizes have had the desired effect of greatly increasing the exhibits. The weather was all that could be desired, and the company numerous, so that the Society is enabled to clear off the debt that had accrued from former exhibitions, and to place themselves in a solvent position.

For eight plants in bloom, dissimilar, the 1st prize was awarded to Henry Johnstone, gr., Polam Hall, Darlington, with grand examples of high cultivation, showing three plants of Ixoras, one of which was a marvel of good culture, and was bloomed on every point, but which is not yet at its best. His other plants consisted of Clerodendrons, Allamandas, Ericas, Statices, Bougainvillea, &c.; 2d, Mr. Cypher, with a fine, vigorous lot, quite up to his usual form, his best examples being Erica Parmentieri and Stephanotis floribunda, beautifully flowered, which was greatly admired; Mr. Armstrong, of Newcastle, was 3d, with a fine, clean lot of smaller plants, but finely flowered; Mr. Methven being 4th.

Eight foliage plants.—Mr. Hammond was easily 1st, with a grand lot, in which were three fine Crotons, two Palms, a fine Dicksonia antarctica, a Macrozamia sp., and a Dicksonia, all perfect examples; Mr. Methven was placed 2d, his best plant being a Cycas revoluta, which was greatly admired, his other plants being smaller, but showing good cultivation; 3d, Mr. Cypher, with a fine lot of young plants scarcely second to the other.

GROUPS OF MISCELLANEOUS PLANTS.

These were arranged for effect, not exceeding 20 feet by 10 feet, placed on the ground. The 1st prize was gained by Mr. Hammond, whose group was so attractive as to compel attention at some distance. His Crotons were beautifully coloured, and stood along with the other plants, on a groundwork of Maidenhair Ferns edged with Panicum variegatum. Mr. McIntyre, gr., Hutton Hall, was 2d, his plants being remarkably good, but the design somewhat marred by his using too many Adiantums and by placing his flowering plants too thickly together, although the latter were preferable to the first lot. Clark & Brothers, of Carlisle, were 3d, with a fine lot of young plants, healthy and clean, but staged with but small effect.

Messrs. William Fell & Co., Hexham, occupied considerable space with their table of exhibits, being very tastefully arranged. Cut Roses were well represented, also cut herbaceous spikes; Conifers, in pots, in great variety, and also a good collection of stove and greenhouse plants. Altogether this collection was very attractive.

Six Orchids.—Mr. Cypher, Cheltenham, took 1st prize with a fine even lot, but there was no competition.

Six exotic Ferns.—1st, Mr. Johnstone; 2d, Mr. Hammond; 3d, J. Noble. All showed finely grown and clean plants in this class, but the former easily gained the 1st place.

Three Crotons.—1st, Mr. McIntyre, of Darlington, his plants being Warrenii; 2d, Mr. Hammond, with smaller plants that were much brighter. One of his plants, a seedling called Hammondii, received a Certificate of Merit from the judges: it is a very distinct kind, and although there are plenty of Crotons, this will not fail to take a front place on the exhibition table.

Three Dracænas.—1st, Mr. Noble, with coloured plants; 2d, H. Johnstone.

Six tuberous-rooted Begonias.—1st, J. Noble; 2d, A. Methven; 3d, J. Garret, with small plants, but finely bloomed.

Four Ericas.—1st, Mr. Cypher, who was a long way in advance of the other competitors; 2d, Mr. Methven; 3d, Mr. B. Thompson.

Twelve pans of bedding plants.—1st, Mr. Methven; 2d, Mr. J. McIntyre; 3d, Mr. J. Richardson.

For rock-plants and Sempervivums, Mr. J. Richardson was 1st for both; 2d, Mr. J. McIntyre; 3d, Mr. H. Johnstone.

In the division open to all, nurserymen excepted, Mr. Letts was placed 1st for six plants in bloom, which took the Veitch Memorial Medal, and justly, as being the best in the show. His plants were the same as he exhibited at York—the Anthurium Scherzerianum showed with a hundred spathes on it looking better than it did then. Mr. Letts was also placed 1st for foliage plants, which were grand examples, of great vigour

The exhibition of Roses was very large, and brought flowers from all parts of England. As Rose growers, Messrs. Harkness & Sons, of Bedale, took a leading position, although the competition was keen in all classes. They were placed 1st in the forty-eight and thirty-six varieties, in which Mr. Whitwell was placed 2d.

The superiority of the best stands was evident at the first glance, and mistakes were all but impossible on the part of the judges.

CUT FLOWERS.

These were not only numerous but very fine, and were freely commented on, as the like had not been seen in the North at any previous show.

FRUIT.

Eight dishes.—1st, Mr. J. Edmonds, Bestwood Lodge; his Black Hamburghs were fairly good, but were lacking in colour, as also were his Muscats, that were also a little under-ripe, but fine in bunch. For very good Peaches, a good Queen (fine), Melons, Figs, and Cherries, and very choice Elruge Nectarines, the 2d fell to Mr. Methven.

Four dishes.—The 1st prize fell to Mr. J. Edmonds, with Mr. Jenkins as a very near 2d.

Four bunches of Grapes.—1st, E. Douglas, Derwent Lodge, Cockermouth; and Mr. Thompson, Dumfries, was 2d with good fruit. The 1st prize for Muscats was also gained by Mr. Douglas, and upon the whole he exhibited the finest Grapes in the show.

Grapes in pots, Pine-apples, Melons, and small fruit were exhibited in great profusion, the prizes mostly falling to growers in the locality of the town of Newcastle.

Hardy Ferns. Fuchsias, Coleus, Carnations, Picotees, and Pinks formed a large section of the exhibits staged in the amateur classes. *J. H.*

## NOTTS HORTICULTURAL AND BOTANICAL: July 23—25.

STARTING in comparatively recent years this Society has by leaps and bounds come to the front as a body which promotes to the fullest degree the art and science of gardening, and as one which promotes far and away the finest show which is to be seen in the midland counties. This year the exhibition was again held in the grounds of Mapperley Park, which Alderman Lambert had once more lent for the three days of its duration, but this year the weather was more favourable than was the case twelve months ago, when thunder, lightning, and all sorts of weather made the venture anything but a financial success. The arrangements were somewhat altered from those of last year, and altered greatly for the better. The entrance was placed nearer to Nottingham than was then the case, and in other respects visitors found improvements. The exhibits were staged in five large marquees, and all were shown to the best advantage. The progress which the Society has made is shown by the fact that there were 730 entries against 484 last year, while nearly 600 people subscribed instead of 300 at that time. Since the last show, on the other hand, a great loss has been sustained by the Society. Mr. Don, who for so long was one of the hon. secretaries, has died, and his place it has been hard to fill. Nevertheless, the arrangements were satisfactorily carried out by Mr. Steward, the present hon. secretary, to whom a large share of the success is due.

The principal feature once more was the exhibition of groups staged for effect. To the groups staged on a 200 square feet base nearly the whole of one tent was devoted, and five wonderfully effective masses of bloom and foliage were the result. Each exhibit was very good, and as to the merits of some of them there may be some difference, but it is quite certain that Mr. Thacker's was the best. A magnificent Seaforthia elegans, which towered almost to the top of the tent, formed the centre-piece of his group. Ranged around were other graceful Palms, and plants of Lilium auratum, Crotons, and Dracænas helped to make up a group which it would be hard to equal. Mr. Edmonds, the gardener at Bestwood, was a very good 2d, with a display in which Palms, Dracænas, Crotons, and Eucharis amazonica were prominent. The finest lot of stuff, no doubt, was to be seen in the third group, that of Lady Ossington, but the arrangement was somewhat heavy. The other two groups were exceedingly meritorious, as were all the exhibits in class 2, where a space of only 100 square feet was allowed. A tasteful arrangement, in which Pitcher-plants and Lilium auratum, with Seaforthia elegans in the background, showed to advantage, was placed 1st, but Mr. Cutts' exhibit ran it very closely. A nice lot of plants sent by Colonel Seeley were so put together as to look rather heavy.

ROSES.

Roses were only of middling quality throughout, the best being the thirty-six shown by Mr. H. Frettingham, in which a La France, a Paul Neyron, and a Dr. André, were the best blooms. Mr. Hallam and Mr. Howe were placed equal in the class for twenty-four Roses, and Mr. J. N. Radford had on exhibition the best twelve. Out of this last-named lot came the premier bloom of the show—a magnificent Horace Vernet. Among the most noticeable features in the classes for cut flowers were the bouquets. The best bridal bouquet was a very tasteful arrangement of Niphetos Roses, Eucharis, and Stephanotis, relieved by Adiantum cuneatum. Stephanotis, Tuberoses, Pinks, and Carnations, were the principal blossoms in the best hand-bouquet shown, that of Mr. Chard, and a wonderfully pretty nosegay of Roses and Ferns was composed of Maidenhair, Maréchal Niel, and Niphetos Roses. Centre-pieces, sprays for ladies' dresses, and buttonhole bouquets, were all put together with taste, and the remainder of the plants and flowers were all well worthy of attention. The fruit was creditable, the stands of Strawberries, Raspberries, Grapes, Peaches, and Melons, being among the best.

VEGETABLES.

These were not so fine as in former years, but the competition was very lively. A number of special prizes were given. Among them were those for the best dinner table decoration. Here the popular verdict certainly did not go with that of the judges. The arrangement to which the 3d prize was awarded—a beautifully light one—was far better than that which was placed 1st—indeed, it was a question whether the 4th was not. The 2d was a nice bit of decoration, but was not improved by a rather too heavy centre. A side table display of flowers, plants, and fruit brought out a number of groups, of which the best was a neat display arranged on a groundwork of moss and Ferns.

CUT STOVE AND GREENHOUSE FLOWERS.

Here Lady Ossington was again 1st, Colonel Seeley, 2d. Herbaceous flowers were well shown. The 1st was easily taken by Messrs. Pearson & Son, Chilwell, for a grand lot. Some first-rate things were well arranged in this collection.

Orchids where poorly represented, as were also Pelargoniums, Fuchsias, Petunias, &c.

MISCELLANEOUS.

There were not many plants sent for exhibition, but what there were were very good. Some very fine Ferns, Palms, and exotic plants were shown by Mr. Williams, of London, and by Mr. Harvey, of the Blyth Street nurseries. The latter gentleman also had on view several wonderfully good pyramidal 8-foot Bays. Messrs. Pearson & Son, of Chilwell, also showed a miscellaneous collection of Ferns, stove and greenhouse plants, a beautiful cross and two wreaths, being designs for funeral work. There were also a number of exhibits of garden furniture, &c.

## STAMFORD HORTICULTURAL.

AN attempt was made last year to revive the once celebrated Stamford show, which was only partially successful, and barely cleared the expenses incurred owing to unfavourable weather, but still the committee resolved to try again, and this time with more success. The day opened very unpromisingly, but eventually cleared off fine, and brought a good attendance of visitors who appeared to enjoy the sight very much; and as the competition was quite in proportion to the prizes offered, we may reasonably hope ere long Stamford show will regain its former usefulness.

In the open class the chief prize offered was for a group of plants arranged for effect, which brought four exhibits. Mr. Wilson, gr. to the Earl of Lindsay, was awarded 1st prize; Messrs. W. & J. Brown, of Stamford, 2d for a very compact and closely packed clump; Mr.

Winn, gr. to J. R. Lowe, Esq., 3d; the other group was staged by Mr. Divers, gr. to J. S. Hopwood, Esq., Ketton Hall, and although it was more natural in appearance was deficient in colour.

For six Coleus, Mr. Wilson also took 1st prize; Mr. Winn 2d, with better grown and richer coloured plants, but more flat in appearance.

For six table plants Mr. Taylor was 1st, Mr. Wilson 2d; good useful things were shown.

Six greenhouse or stove Ferns only brought two collections. Mr. Divers was an easy 1st; Mr. Winn 2d; some nice little Fuchsias and Pelargoniums were shown.

For cut flowers, Messrs. Brown took no less than ten 1st prizes.

Mr. House, of Peterborough, obtained 1st prize for thirty-six Roses, without any opposition, and for twenty-four blooms Messrs. Brown, of Stamford, were 1st; Mr. Wilson, 2d. Considering the hot dry weather in this district the Roses were very good.

The chief prize for fruit was for a collection of eight varieties, which only brought one exhibitor, Mr. Divers, who showed Black Hamburgh Grapes, Governor Wood and Early Rivers Cherries, Lord Suffield Apples, Elruge Nectarines, Charlotte Rothschild Pine, Early Albert Peaches, and Sir J. Paxton Strawberries. For Grapes, Mr. Gilbert had an easy victory, taking 1st for black with some good Hamburghs, and for white with Muscat of Alexandria. Some splendid Strawberries were shown notwithstanding the dry season—Mr. Wilson taking 1st prizes for one dish, and also for four; the best in appearance were Oxonian from Burghley, which were placed 2d, the 1st dish being Dr. Hogg. Mr. Wilson also took 1st prize for Nectarines. Mr. Gilbert was 1st for Peaches, and Mr. Divers 2d in both classes.

As might be anticipated Mr. Gilbert was easily 1st, with a collection of ten varieties of vegetables, he showed a remarkably fresh and healthy looking lot.

One good feature of the schedule was the way in which the exhibitors were divided into classes so as to give all a chance as far as possible. In class B, for persons not employing more than one gardener, some good things were shown by Mr. Pridmore, gr. to Miss Thompson; Mr. Taylor, gr. to J. Richardson, Esq., and others. Roses in this class were very good. Mr. Duncomb, of Stamford, and Mr. Canner, of Empingham, being the chief exhibitors.

Vegetables were well shown in the cottagers' tent, and to judge from the Tripoli Onions shown it must have been a very favourable season for them, the judges being unable to decide the 3d prize among eleven collections, awarded a prize to each. (*A Correspondent*).

## WINCHESTER HORTICULTURAL: July 16.

THE second show of the above Society was held in Kingsgate Park, and was a decided success from a horticultural point of view. The committee deserved the well-earned reward of their endeavours, having used great exertions to make the show one of the best in the South of England. Special inducements were offered this time in the larger plant classes, which had the desired effect, for these were well filled with some of the best specimens in the country, as may be imagined when such exhibitors as Messrs. Cypher, Mould, and James entered the lists, not forgetting a local grower (Mr. Wills), who ran Mr. Cypher hard in one class for 1st honours. Roses were a strong feature of the show, and were well staged, a matter prominently brought out in the amateurs' classes. Fruit was well represented in so far as regarded quality if not in very large quantity. Noticeable in this section of the show was a fine collection of nineteen dishes, not for competition, staged by Mr. W. Wildsmith, gr. to Lord Eversley, Heckfield Place, Winchfield, consisting of fine Black Hamburgh and Muscat of Alexandria Grapes, the latter requiring a little more colour to make them quite perfect. Queen Pines, excellent Brown Turkey Figs, Hero of Lockinge Melon, and good Peaches, Nectarines, and Strawberries. A Certificate of Merit was awarded to the exhibitor.

Table decorations were, as they always are at Winchester, well done and much admired.

### STOVE AND GREENHOUSE PLANTS.

For twelve distinct varieties, not less than six varieties in bloom.—Mr. J. Cypher, nurseryman, Cheltenham, easily gained first honours with a very fine collection staged in his well known form. He had Cycas circinalis in good health, Latania borbonica, a magnificent plant; Cycas revoluta, Kentia australis, Croton Johannis, well coloured; Dasylirion acrotrichum. The flowering plants consisted of a fine piece of Ixora Pilgrimii, I. regina, with large trusses of flower; Stephanotis floribunda, freely flowered; Erica ferruginea and E. major, the latter very fresh; Allamanda Hendersoni, and Anthurium Scherzerianum. 2d, Mr. F. J. Mould, nurseryman, Pewsey, Wilts, who had good plants of Erica insignis, E. Fairieana, E. Kingscottiana, Ixora Colei, and I. regina. Mr. H. James, Castle Nursery, Lower Norwood, and Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton; the former had Erica ferruginea, good, and a well bloomed plant of Kalosanthes; the latter had Latania borbonica in fine condition, Clerodendron Balfourianum, fresh, and a well bloomed plant of Cypripedium barbatum majus.

For six stove and greenhouse plants Mr. Cypher was again placed in the premier position with handsome plants of Kentia Fosteriana, Croton Johannis, Erica Parmentieriana, the latter a very good example; Mr. Wills was a close 2d, having a very healthy plant of Cycas revoluta, particularly good coloured and freely bloomed specimen of Phœnocoma prolifera Barnesii, and Erica Parmentieriana rosea.

For six stove and greenhouse plants, amateurs, Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, was 1st, with handsome plants of Alocasia macrorhiza variegata, Croton Queen Victoria, and a densely bloomed Bougainvillea glabra.

### MISCELLANEOUS GROUP OF PLANTS

arranged for effect, 12 feet by 10 feet.—Mr. Wills was an easy 1st, with plants well adapted for the purpose, lightly arranged, the colours evenly balanced; 2d, Mr. E. Hillier, nurseryman, Winchester, with a bright group, slightly overcrowded. 3d, Mr. H. James with a pleasing group, except in one or two places where the pots were too plainly seen. For single specimen stove or greenhouse plant, in bloom, Mr. Hillier was 1st with Erica Parmentieriana, the same exhibitor being 1st with Kentia Canterburyana. Mr. Wills followed with Cocos Weddelliana. Coleus, Begonias, Fuschias, and table plants were well represented in their respective classes.

### ROSES.

Forty-eight single trusses: 1st prize, a piece of plate.—This trophy was awarded to Messrs. Keynes & Son, Salisbury, for a bright and even stand of not large blooms. The following were some of the most noteworthy:—Duke of Teck, Louis van Houtte, Niphetos, Alfred Colomb, and A. K. Williams. 2d, Mr. Frank Cant, Colchester; 3d, Mr. B. Cant, Colchester.

For thirty-six blooms, distinct, single trusses, Messrs. Keynes & Son followed up their previous success by taking 1st prize with blooms similar to those in the 1st prize of forty-eight varieties; 2d, Mr. Charles Turner, The Nurseries, Slough; 3d, Mr. B. Cant.

For twenty-four Roses, distinct, three trusses.—1st, Messrs. Keynes & Son; 2d, Messrs. G. Cooling & Son, Broad Street, Bath; 3d, Mr. C. Turner.

For twelve Teas, distinct.—1st, Mr. Frank Cant; 2d, Mr. E. Hillier; 3d, Messrs. G. Cooling.

For twelve single trusses, any variety hybrid perpetual, dark.—1st, Mr. F. Cant, with A. K. Williams in grand condition; 2d, Messrs. Keynes.

For same number of light colour, Mr. B. Cant and Messrs. Cooling took the prizes in the order named.

Roses in the classes devoted to amateurs were excellently shown by the Rev. J. H. Pemberton, Harvering, Romford; Mr. Flight, Cornstiles, Twyford, Winchester (gr., Mr. Neville); Mr. S. P. Budd, 8, Gay Street, Bath; and Captain Ramsay, Fareham: the former took all the leading prizes, staging blooms of fine substance and colour.

For twelve bunches of cut flowers, hardy varieties, Mr. Molyneux was 1st; 2d, Mr. F. Thompson, gr. to W. Baring, Esq., Salisbury; 3d, Mr. Neville, with good stands.

### FRUIT.

Six dishes, distinct.—Mr. J. Budd, gr. to F. G. Dalgety, Esq., Lockerly Hall, Romsey, was placed 1st with good Black Hamburgh and Muscat of Alexandria Grapes, fine in bunch and berry, only wanting little more in colour to make them perfect; a good Queen Pine, Melon, Peaches and Nectarines. 2d, Mr. Thompson, whose Grapes were not quite so well finished as those in the former collection.

Three bunches black Grapes.—Mr. Molyneux was 1st with Hamburghs, fine in bunch and berry and finish. Mr. Thompson followed close with Madresfield Court, in good condition; 3d, Mr. E. Hillier, with Hamburgh, of very good quality, rather small in berry. Three bunches white Grapes.—Mr. Thompson was 1st with rather green Muscats; 2d, Mr. Molyneux, with Buckland Sweetwater; 3d, Mr. Budd, with same variety.

Melons were exhibited few in number, and those not of first-rate quality. Mr. Wildsmith had best Hero of Lockinge: Mr. R. Baker, gr. to Major J. Moore, Belle Vue House, Winchester, had the best scarlet variety. Mr. Wildsmith staged the best Peaches—an excellent dish of Bellegarde. Mr. Thompson put up the best Nectarines, followed by Mr. J. Dauncey, gr. to J. Bramstone Stane, Esq., Buckfield, Basingstoke, who staged the best dish of Strawberries—an excellent one of Sir C. Nadier.

### VEGETABLES.

The competition was spirited, Mr. Molyneux leading, with very fine Leviathan Onions, Early Nantes Carrots, Midsummer Kidney Potato, Canadian Wonder Bean, &c.; 2d, Mr. J. Dauncey: in this lot were some fine Hackwood Park Tomato. 3d, Mr. J. Budd.

## A SHOW AT NETLEY ABBEY.

THE Hound and St. Mary Extra Horticultural Society held its eighth annual show on Thursday, July 23, in the charming grounds adjacent to Netley Abbey. It would be difficult to find in the county of Hampshire a more attractive spot in which to hold a flower show on a warm July day than the old Abbey grounds; the Ivy-clad ruins and mouldering walls and pillars lent special charms to the scene of the day.

This Society was started to encourage the cottagers of the locality to cultivate vegetables, fruit, and flowers in a better manner than has hitherto been the case. And very successful have the endeavours of the Society been, judged by the productions displayed on the occasion, especially when regard is had to the long period of warm dry weather experienced in this part of the country.

The Strawberries, Currants, and vegetables generally gave proof of much skill and persevering attention having been bestowed on them by the exhibitors. But the committee were also very fortunate in getting much sympathy and support from the wealthier classes in the neighbourhood, who supplemented their subscriptions by special prizes, and the loan of collections of plants to make the show more attractive than otherwise would have been the case. (*A Correspondent.*)

## FLORIDA, THE ITALY OF AMERICA.

A SHORT account of this portion of the United States, which at present is occupying so much attention, and where American and British capital is being invested, may be interesting to your readers. It is only during the last few years that the State has been brought into prominent notice, formerly thought only fit for the Indians and negroes to live in. It is a land of flowers—the Italy of America. The climate is really very fine, and there is no winter, that season being fully better than the average English summer, whilst the summers are hot, 95° in the shade being an average; still, it is nothing in comparison to the heat experienced in the Northern States and Canada. Florida being a peninsula, having the Atlantic Ocean on the east, and the Gulf of Mexico on the west, has the breeze wafted from ocean to gulf. The evenings are, as a rule, pretty cool. Mosquitos and gnats are in some parts troublesome, and in others unknown, and as the country fills up will almost entirely disappear. Snakes are to be found in the swampy portions of the State. Malaria,—*i.e.*, chills and fever, ague, &c.—is prevalent in some parts, to prevent which, Eucalyptus globulus, or Blue Gum, is planted in large quantities; Orange County is, however, very healthy. The climate is very beneficial to persons afflicted with pulmonary diseases; diphtheria, croup, measles, &c., are unknown. Civilisation is being rapidly developed, more especially in Orange County, of which Orlando is the chief town, now within fifty hours' run from New York by a railway opened recently. Florida may be termed a Horticultural State, Oranges being at present the staple industry; the demand for the fruit far exceeds the supply, notwithstanding the thousands of acres planted with Orange trees. A twelve-year-old tree will bear as many as 1500 Oranges, and it will be difficult to conceive what the demand will be when the foreign trade is developed. The first shipment to London was by W. H. Sands, Esq., who sent several boxes this spring, the returns for which barely covered the cost; another gentleman shipped some later on, which paid him a better return. A direct line of steamers from Florida to the Old Country is what is wanted. The cost of an Orange grove depends on the quality of the land, and its locality; 10 acres being an ordinary sized grove, and fifty trees to an acre. There are two ways of raising your trees—from the seed and by budding seedling stocks with whatever variety you want. The latter will bear in four years. Attention is being turned to other tropical fruits—the Fig, Vine, Pine-apple, Banana or Bread-fruit, grow and ripen their fruits without any protection whatever. Musa Cavendishii, lately introduced, is doing remarkably well. The Lemon, Lime, and Guava all do well. Strawberries are in fruit for about seven months. The winter is the harvest for vegetables, which bring large prices here, and in northern markets. Peas, Broad and French Beans, Cucumbers, Vegetable Marrow, all in full bearing in December and January; later on Mush and Water Melons are plentiful. The summers are, however, too hot for the successful cultivation of vegetables in the open unshaded fields in that season, however they can be raised in the Orange groves between the trees while coming into bearing. Magnolia grandiflora is seen here at its best, stately trees, about 80 feet high and 3 feet in diameter, loaded with their delicate white and fragrant blooms.

The following subjects are growing almost wild, viz., Poinsettia pulcherrima, Clerodendron fragrans flore-pleno, Jasminum Sambac flore-pleno, Plumbago capensis, Hoya carnosa, Chorozema Lawrenceanum, Gardenia florida, Hibiscus in many varieties, also the Amaryllis, and Vallota purpurea, and others too numerous to mention. Roses do remarkably well, considering that the land here is composed entirely of a grey sand.

The State, although larger than England and Scotland combined, is very flat, covered with a fine growth of majestic Pine trees; Orange County in particular having a very large number of magnificent deep, clear fresh-water lakes dotting its suriace, well stocked with fish, including trout, of various sorts. Round the margin is a dense growth of hard wood, such as the Gum, Laurus nobilis, Maple, Cedar, &c.; whilst the beautiful Oreodoxa, or Cabbage Palm, raises its head above. Round these lakes dwellings are being built, more especially in the vicinity of the settlements, which are rapidly formed. Orlando five years ago was a small collection of huts at a cross

road in a Pine forest, with only a Court-house; to-day it is an incorporated town, with a population of about 3000, and over one dozen hotels and boarding-houses. Many other industries have been started, and two railways now go through the town, while others are in contemplation. Land in the vicinity is worth about 500 dol. per acre, while town lots have been sold at the rate of 36,000 dol. Land all over the State is rising in value.

Owing to the slackness of trade and the severity of the northern winters, a great influx of families have settled in Florida, so that work is not over-plentiful, 1¼ dol. (5*s.* 3*d.*) per day being the average pay for labourers; skilled workmen are better paid. Carpenters and gardeners especially are wanted. Wages for the latter run about 27 dols. per month, with board; without board, 37 dols. is about the highest price paid. There is a great demand for domestic servants; wages from 9 to 15 dols. a month, with board.

The hours of labour are longer than in the Old Country. The cost of living is much higher, many of the articles being double in price. Clothing is very dear, but of that not much is wanted, the houses are, of course, all of wood, and are furnished with verandahs. Rents are moderate, there is plenty of wood for fuel, which is only wanted for cooking purposes.

At present the best way of reaching Florida is *vid* New York, thence by steamer to Savannah, then rail to Jacksonvill (the City of Hotels), which stands on the banks of the St. John's River. There are a number of Scotchmen, there and they have a flourishing association; in fact, Scotchmen are found in all parts of the State, illustrating the old proverb "that a Scotchman is never at home except when abroad." From Jacksonville the traveller has a choice of two routes, one by steamer 160 miles up the river to Sandford, then rail to Orlando 30 miles further, passing through a succession of splendid Orange groves, or by the newly opened railway already referred to, *vid* Taveres to Orlando, thence the journey can be continued to Tampa on the Gulf coast.

It is hardly necessary to state that, to any one coming to Florida, it is a great advantage to have capital to invest, but there are instances to be found of men coming here without any means, who to-day have become wealthy by their own industry and the increase of the value of their property. *B. Smith, Park House, Maitland, Orange County, Florida, U.S.*



## Law Notes.

Middlesex Sessions: *July* 25.—Kay, *Appellant* — the Parish of Finchley, *Respondents*. —In this case, which was of considerable interest to market gardeners, Mr. Philip Kay, of The Nurseries, Long Lane, Finchley, appealed against a general district rate of 1*s.* 2*d.* in the pound. Mr. Forest Fulton appeared for the appellant; Mr. Bartly Dennis for the respondents. It was stated that this was a friendly appeal, made in order to obtain a decision as to the interpretation of section 211 of the Public Health Act, 1875. A sub-section of that Act provided that all woodlands, market gardens, or nursery grounds should be assessed at only one-quarter of the annual value. The appellant owned about 2½ acres of ground, of which 2 acres were covered with glass-houses used for the purpose of forcing fruit and flowers for the early markets. For the appellant it was contended that such property came within the exemptions specified by the Act. In support of the appellant's case, Mr. Charles F. Jones, surveyor, and Mr. Morris, of the firm of Protheroe and Morris, horticultural auctioneers, were called, and both stated that, in their opinion, the glass erections in question were nurseries, and that the appellant's property could only be described as a market garden or nursery ground. For the respondents (the Parish of Finchley) it was contended that the Act was only meant to cover arable land or pasturage, or such gardens or grounds as were used to grow fruit and flowers by the agency of Nature unassisted. In the present case there were no "grounds," all the growing being done in what were unmistakably buildings—horticultural buildings. The appellant had admitted that these buildings had cost him £7000 to erect, and that he annually sold many thousands of pounds of Grapes at from 2*s.* to 12*s.* a pound, besides flowers, the profit from which equalled that made on fruit. The appellant had, in fact, as much advantage from the expenditure of the rates as if his property was an ordinary manufactory, and he made his money by selling cloth instead of Grapes. The Bench decided to allow the appeal. In their opinion the appellant's property was within the exemptions mentioned in the sub-section of the Act. In answer to Mr. Dennis, however, Mr. Forsyth said the opinion of the Bench was that it was by no means a clear case, and that they would certainly grant a case for a Superior Court. Each side must pay its own costs.

## Obituary.

William Chater, of Saffron Walden, whose name was so long and so successfully associated with the improvement and culture of the Hollyhock, died, full of years and honours, at the Grove Nurseries, in that town, on July 21, in the eighty-fourth year of his age. He was an able, modest, kindly, genial man, spending a quiet, useful life, and passing away amid many regrets.

William Chater was born on February 4, 1802, at Hellions, Bumpstead, Essex, his father being head gardener to a Mr. Stevens, at Bower Hall. In those days, as in more remote times, village schools were few, and his father and mother instructed him in the elements of education, and possessing a love for study he was allowed the run of the library at the Hall. He worked in the garden with his father, where he imbibed a strong taste for gardening, and especially for florists' flowers, and shortly before attaining the age of twenty years he went to live with his brother, John Chater, a good florist, then in business as a nurseryman at Haverhill.

At twenty-two years of age he started in business as a nurseryman and florist at Saffron Walden. At that time there was a circle of florists in the neighbourhood, and William Chater entered with ardour upon the cultivation of Carnations, Picotees, Ranunculus, Dahlias, Pansies, Tulips, and the Hollyhock. At this time Charles Baron, a genuine florist, resided at Saffron Walden, a name that will long remain associated with the earlier improvement of the Hollyhock. Of these he had an excellent collection, also of Ranunculus, Pansies, &c. In August, 1847, William Chater entered into an arrangement with Charles Baron to cultivate and sell Hollyhocks, and the first list of Baron's seedlings, nineteen in number, was issued in that month, but none of them were named, only the colour given.

In October of the same year several collections were sent out at £5 per set. I have heard Mr. Chater say that he found little result from Baron's Hollyhocks until he secured a variety with some pretensions to a double character, which he obtained on the Continent. By crossing this with Baron's and some of his own seedlings decided advances were obtained, resulting in the early production of Comet, the seed parent of this being Baron's anemonæflora. This variety was held in poor esteem by Charles Baron, but William Chater, believing it likely to prove a useful parent, used it with striking success. It was the progenitor of Comet, Walden Gem, Walden King, the latter the best scarlet, and probably one of the most perfect flowers ever grown. Then followed Charles Baron, pinkish-salmon, and the parent of all the later salmon-coloured flowers. From Baron's Model of Perfection came all the white flowers having purple bases, while the purple varieties came from purpurea elegans, &c. On August 6, 1850, Mr. Chater exhibited a collection of his new Hollyhocks at one of the meetings of the Royal Horticultural Society, and was awarded the Banksian Medal. In 1851, during the time of the Great Exhibition of Industry, he for several weeks exhibited spikes and cut blooms of Hollyhocks, for which he was awarded a Medal. An inflexible rule with William Chater was never to send out a seedling until it had been proved the second year.

William Chater was also a successful fruit grower, and was a great believer in the orchard-house system advocated by the late Thos. Rivers. He had the superintendence of the gardens of Short Grove Park, Newport, for upwards of thirty years, and produced fine crops of orchard-house fruit. As a landscape gardener he displayed great taste and first-rate ability. His last piece of work was laying-out the grounds of Hutton Hall, Guisborough, for Sir J. W. Pease, Bart., M.P., which was accomplished during the years 1864—67. He was always very proud of this achievement. In February, 1866, he finished plans for the laying-out of the churchyard at Darlington after the restoration of the church; the plans were accepted, and carried out successfully. He also carried out extensive alterations in Short Grove Park, the seat of the late W. C. Smith, Esq., and it is now regarded as one of the most beautiful parks in the county, and well worthy a visit from all lovers of landscape gardening. The pretty gardens and grounds at Bridge End, Saffron Walden, the residence of the late Francis Gibson, Esq., were entirely designed and laid out by William Chater, and not a few other places in the county. He was awarded the 1st prize (open to all England) for the best plan for laying out the Walden Cemetery, which was subsequently carried out by him.

To the last, so long as power to do so remained to him, he loved to talk of the flowers he cultivated with so much success. He died peacefully, closing a life full of usefulness and honour. *R. D.*

## The Weather.

*State of the weather at Blackheath, London,* for the week ending Wednesday, July 29, 1885.

| Month and Day. | Barometer: Mean Reading Reduced to 32° and Sea Level. | Barometer: Departure from Average of 18 years. | Temperature of the Air: Highest. | Lowest. | Range. | Mean for Day. | Departure of Mean from Average of 50 years. | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point. | Degree of Humidity. Sat. = 100 | Wind: Average Direction. | Rainfall. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| July | In. | In. | ° | ° | ° | ° | ° | | | | In. |
| 23 | 30.14 | +0.37 | 74.5 | 47.5 | 27.0 | 60.3 | — 1.9 | 44.6 | 57 | E. E.N.E | 0.00 |
| 24 | 30.01 | +0.33 | 77.5 | 48.0 | 29.5 | 62.6 | + 0.4 | 51.3 | 67 | E | 0.00 |
| 25 | 30.12 | +0.36 | 82.8 | 52.0 | 30.8 | 67.5 | + 5.3 | 49.8 | 52 | W. S.W. | 0.00 |
| 26 | 30.02 | +0.26 | 87.1 | 58.2 | 28.9 | 72.2 | + 10.0 | 53.1 | 52 | W. | 0.00 |
| 27 | 30.11 | +0.35 | 85.5 | 58.5 | 27.0 | 69.0 | + 7.7 | 56.3 | 61 | N.W. | 0.03 |
| 28 | 30.16 | +0.40 | 74.5 | 58.0 | 16.5 | 61.9 | —. 0.3 | 51.9 | 63 | E. N.E | 0.00 |
| 29 | 30.12 | +0.36 | 70.8 | 57.5 | 13.3 | 60.6 | — 2.3 | 47.4 | 63 | E. N.E | 0.00 |
| Mean | 30.10 | +0.35 | 79.0 | 54.3 | 24.7 | 64.9 | + 2.6 | 50.6 | 60 | variable | 0.03 |

July 23.—Very fine day throughout.
— 24. Very fine day.
— 25. Very fine day.
— 26. Very fine
— 27. Very fine.
— 28. Dull till 9.30 A.M., very fine and bright afterwards.
— 29.—Fine day, sun shining at times.

London: *Atmospheric Pressure.* — During the week ending July 25, the reading of the barometer at the level of the sea decreased to 29.91 inches at the beginning of the week to 29.87 inches by 5 P.M. on the 19th, increased to 30.46 inches by 9 A.M. on the 22d, decreased to 30.29 inches by 5 P.M. on the 23d, increased to 30.31 inches by 9 A.M. on the 24th, decreased to 30.26 inches by 5 P.M. on the same day, increased to 30.34 inches by 9 A.M. on the 25th, and was 30.28 inches by the end of the week.

The mean reading of the barometer for the week was 30.21 inches, being 0.14 inch higher than last week, and 0.25 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 82°.8, on the 25th; on the 19th the highest was 73°.2. The mean of the seven high day temperatures was 76°.5.

The lowest temperature was 47°.5, on the 23d; on the 20th the lowest temperature was 59°.8. The mean of the seven low night temperatures was 54°.3.

The greatest range of temperature was 30°.8, on the 25th; the smallest, on the 19th, was 14°. The mean of the seven daily ranges was 22°.2.

The mean temperatures were—on the 19th, 63°.6; on the 20th, 65°.2; on the 21st, 62°.7; on the 22d, 63°.1; on the 23d, 60.3°; on the 24th, 62°.6; and on the 25th, 67°.5; and these were all above (excepting the 23d, which was 1°.9 below) by 1°.1, 2°.8, 0°.4, 0°.8, 0°.4, and 5°.3 respectively.

The mean temperature of the week was 63°.6,

being 2°.5 higher than last week, and 1°.3 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 134°, on the 23d. The mean of the seven readings was 123°.4.

The lowest reading of a minimum thermometer placed on grass was 32°.6, on the 23d. The mean of the seven readings was 43°.3.

*Rain.*—No rain fell during the week.

ENGLAND: *Temperature.*—During the week ending July 25, the highest temperatures were 90° at Cambridge, 89° at Sheffield, 84° at Hull; the highest at Brighton was 72°.5, at Liverpool 73°.7, at Plymouth 74°.5. The general mean was 80°.2.

The lowest temperatures were 42°.5 at Cambridge, 47.5 at Blackheath, 48° at Truro; the lowest at Preston was 55°.5, at Liverpool 55°.4, at Sheffield 55°. The general mean was 51°.6.

The greatest ranges were 47°.5 at Cambridge 35°.3 at Blackheath, 35° at Hull; the smallest ranges were 18°.3 at Liverpool, 21°.9 at Brighton, 23°.3 at Plymouth. The general mean was 28°.6.

The mean of the seven high day temperatures was highest at Cambridge, 78°.3, at Blackheath 76°.5, at Sheffield 74°.3; and was lowest at Sunderland, 66°.5, at Liverpool 69°.1, at Plymouth 69°.4. The general mean was 71°.7.

The mean of the seven low night temperatures was highest at Liverpool, 58°.5, at Sheffield 57°.7, at Bristol 57°.1; and was lowest at Cambridge, 49° 4, at Hull 53°, at Sunderland 53°.5. The general mean was 55°.3.

The mean daily range was greatest at Cambridge, 28°.9, at Blackheath 22°.2, at Truro 18°.3; and was least at Liverpool, 10°.6, at Plymouth 12°.7, at Bradford and Sunderland, 13°. The general mean was 16°.4.

The mean temperature was highest at Sheffield, 64°.1, at Blackheath 63°.6, at Bristol 63°.2; and was lowest at Sunderland 58°.1, at Hull 59°.7, at Brighton 60°.5. The general mean was 61°.6.

*Rain.*—The largest falls were 0.94 inch at Preston, 0.78 inch at Bolton, 0.77 inch at Liverpool; the smallest falls were 0.05 inch at Truro, 0.10 inch at Cambridge, and 0.13 inch at Plymouth. The general mean fall was 0.37 inch. No rain fell at Blackheath.

SCOTLAND: *Temperature.*—During the week ending July 25, the highest temperature was 83°.7, at Aberdeen; at Greenock the highest temperature was 78°.7. The general mean was 81°.

The lowest temperature in the week was 43°.2, at Glasgow; at Leith the highest temperature was 47°.8. The general mean was 45°.6.

The mean temperature was highest at Paisley, 62°.6; and lowest at Perth, 59°.5. The general mean was 60°.7.

*Rain.*—The largest fall was 0.32 inch, at Edinburgh, and the smallest fall was 0.01 inch, at Paisley. The general mean fall was 0.07 inch.

JAMES GLAISHER F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, July 27, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been fine, bright, and warm generally over the whole kingdom.

The *temperature* has been considerably higher than during any previous week of this summer, the values exceeding the mean by 5° in the "Midland Counties," and "Ireland, S.," by 4° over the western parts of Great Britain, and by 2° or 3° in most other districts. The maxima, which were recorded on the 24th over the more northern districts, and on the 25th or 26th over the greater part of England and Ireland, were as high as 91° in the "Midland Counties" and "England, S." (at Leicester and Southampton), 88° in "England, E." and "England, S.W.," and between 79° and 86° in all other districts excepting "Scotland, N.," where the highest reading was 69° The minima were generally registered either on the 22d or 23d, when the thermometer fell to 56° in the "Channel Islands," to 50° or 51° in Ireland, between 43° and 47° over England, to 41° in "Scotland, W." and to 38° in "Scotland, N."

The *rainfall* has been very slight or altogether absent.

*Bright sunshine* shows a very general increase, especially over the Channel, and the south and south-east of England. The percentages of the possible duration varied from 31 in "Scotland, N." and 32 in "ScotlandE.," to between 51 and 66 over the greater part of England, and to 78 in the "Channel Islands."

*Depressions observed.*—The only depression within our area was one noticed over the Baltic during the 24th and 25th. Over our islands the distribution of pressure was anticyclonic, with varying easterly airs in the south, and light winds from various quarters at the more northern stations.

## Answers to Correspondents.

APHIS ON ORCHIDS: *D. M. G.* The tobacco-juice that was used was too weak and watery a solution, hence the poor results seen. Try mild fumigation on a cloudy night, using shading early in the morning after, or use tobacco snuff.

AUSTRALIAN GRAPES: *A Subscriber.* We have inquired in the market without success.

BEECH MAST: *M.* The word is Saxon, Mäst meaning food. Though generally confined to the fruit of the Beech, it is applied to that of the Oak by some writers. "Nut" is also of Saxon or Scandinavian origin, meaning something hard. We do not know why Hazels and Chestnuts are called "Nuts," while the corresponding fruit of the Beech receives a different name, unless it be that in those olden times, among the Northern folk, Beech furnished food for men and animals to a larger extent than the Hazel. Of course the Chestnut, being a Southern tree, would not have been known to the old Scandinavians.

BEGONIA: *R. O.* Your semi-double flower has the petals slightly fimbriate at the edge. By perseverance you may improve the strain, which is promising.

CUCUMBERS: *E. H. C.* The plants are exhausted by heavy cropping, as shown by the deformed and small fruits now obtained. You can impart some degree of vigour to them by removing the upper soil with but little disturbance of the roots, replacing it with some rich compost of loam and manure, which can be added to as new roots protrude; or, what would be better, clear out the old, and start with new plants.

DECIDUOUS CONIFEROUS TREES AND EVERGREENS: *B. C. L.* Once in two years is often enough to shift them, unless growth at root and top is very rampant; in that case there is nothing better than annual removal. Evergreen trees and shrubs are best removed late in August, and early in the next month, and deciduous ones as soon as the leaf indicates ripeness; you need not wait till it falls. Autumn is much to be preferred to spring, and the earlier the better. Do not shift evergreen things in winter if you can avoid it.

EUCALYPTUS SEEDS: *Chas. Schwing, Los Angeles, Cal., U.S.A.* Try H. G. Hilyear, Kew Nursery, Melbourne; Harris, South Yarra; J. Baptist, at Sydney.

GOOSEBERRIES: *John Penny.* Similar to a variety named Roseberry.

GREEN PELARGONIUMS: *G. P.* The flowers are replaced by clusters of green scales. Such cases are not very uncommon, and instances have, from time to time, been figured in our columns.

INSECTS: *W. M.* The leaves of your Beech have been infested with the caterpillars of a very minute moth (Lithocolletis faginella), which mines within the underside of the leaves, forming pale oval blotches, and loosening the lower cuticle of the leaf between two of the side ribs, and forming a slight pucker on the underside of the blotch as the cuticle dries and shrinks. *J. O. W.*

NAMES OF PLANTS: *C. W.* Scabiosa grandiflora.—*C. M. O.* Name of Composite next week. It is not Tussack Grass.—*J. J., Darlington.* Your specimens were dried, broken to fragments, and packed in cotton wool—all good reasons for our declining the task of making them out. Please send good specimens, properly packed.—*Diss.* Catalpa Kæmpferi. A monograph of the species is given in the *Gardeners' Chronicle* for 1880, p. 651.—*C. Clarke.* Clethra arborea. *C. W.* Cephalaria tatarica.—*Subscriber C.* 2, Campanula, and 6, Hieracium, too poor for determination; 3, Arnica chamissonis; 4, Lysimachia ciliata; 8, Centaurea dealbata.—*Alpha.* 1, Lycium barbarum; 2, Poa annua; 3, send better specimen; 4, Agrostis alba; 5, Carex divulsa. *Miss Ocon.* Campanula trachelium flore-pleno.—*A. S.* Rubus odoratus. 1, Lysimachia vulgaris; 2, Solidago, near to S. virga-aurea; 3, Achillea sp.; 4, Achillea ptarmica, double-flowered variety; 5, Eccremocarpus scaber; 6, Veratrum nigrum.—*H. C. & E. A.* Yucca recurvifolia, which is in flower in various places now.

ORCHIDS: *Mr. Alison.* Phalænopsis amabile, Oncidium dasytyle, so called from the thick wart on the lip; Pellea falcata.

PEACHES: *T. Cooper.* The Peach sent belongs to the class of what are called "clingstones," the flesh of which clings both to the skin and the stone. It is probably a seedling, and worthless.

POT POURRI TO LAST A HUNDRED YEARS: *W. Comfort* (p. 91). "To every peck of Roses a large handful of Jasmine flowers, and one of Dame Violets (Rockets), one of Orange blossoms, Orris root sliced, 1 oz.; Gum Benjamin and storax, 1 oz. each; two or three handfuls of Clove Gillyflowers, Cloves, Nutmegs, Rosemary flowers, Allspice, Knotted Marjoram, Lemon Thyme, rind of Lemon, Balm of Gilead, dry, and a few Laurel leaves. Chop all these, and mix them well with bay salt. Cover the jar, stir occasionally. The various ingredients may be collected in succession as they flower. To these add Woodruff, Jonquil flowers, and many other things." (Cassiobury recipe.)

POTATOS: *W. H.* 1, may be a variety of the Ashleaf Kidney; 2, Vicar of Laleham; 3, Scotch Blue; but we cannot be certain, it being next to impossible to identify Potatos from single tubers.

ROSES DONE BLOOMING: *Mater.* The shoots may now be cut back to half their length, when weak growers, but less if of vigorous habit, thinning out without sparing all weakly shoots growing from the old wood in the middle of the heads or bushes, for such do no good whatever, and never bear a bloom. Give liquid manure once or twice a week, according to the weather; replace the mulching with fresh rich material, and check mildew with sulphur dustings on its first appearance.

SPOTS ON CROTONS: *G. Spurrell.* You have shaded your plants when they should have enjoyed almost uninterrupted sunshine, so that you have rendered the leaf-tissues tender, and liable to burn from accidental exposure to sunlight.

VARIEGATED CELERY: *A. B., Cheadle.* Variegation is not common, and we fail to see the usefulness in perpetuating it. As to the length of Beans we have no information.

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## CATALOGUES RECEIVED.

FRED. BURVENICH, Sen., Gentbrugge, Ghent, Belgium —Vines, Strawberries, Carnations, Conifers, &c.

F. ROEMER, Quedlinburg—Flower and Vegetable Seeds, Strawberry, Bulbs and Tubers.

JOSEPH SCHWARTZ, 7, Route de Vienne à la Guillotière, Lyon—New Roses.

DICKSONS & CO., 1, Waterloo Place, Edinburgh—Flower Roots, &c.

COMMUNICATIONS RECEIVED:—F. S. & Co.—W. R. E.—J. S., Innspruck.—W. B. H., Cork.—M. Azarian, Constantinople.—G. E. F.—J. McI., Dunedin, N. Z.—F., Florida.—M., Jamaica.—Th. C., Arnhem.—R. J. L.—E. J. B.—D. S.—P. I'm T., British Guiana—T. S. Ware. A. C. B.—S. B. W., Geneva. Prof. Balfour. C. K. Parlubitz, Bohemia.—T. Laxton.—P. E. K.—H. Carter.—J. Veitch & Sons.—C. M. O.—Ch. Naudin.—T. W.

# Markets.

*COVENT GARDEN, July 30.*

HEAVY supplies still to hand, with prices generally firmer. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Cherries, ½-sieve | 4 0–10 0 | Lemons, per case | 15 0–30 0 |
| Currants, red, ½-siv. | 3 0– 4 0 | Melons, each | 2 0– 3 0 |
| black, ½ sieve | 4 6 .. | Peaches, per doz. | 2 0– 8 0 |
| Figs, per dozen | 1 0– .. | Pine-apples, Eng., lb. | 2 0– 3 0 |
| Gooseberries, ½-sieve | 2 0– 2 3 | — St. Michael, each | 2 6– 5 0 |
| Grapes, per lb. | 0 9– 2 0 | Strawberries, per lb. | 0 3– 0 9 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Artichokes, Globe, per dozen | 3 0– .. | Horse Radish, bun. | 1 0– 4 0 |
| Asparagus, English, per bundle | 1 6– 6 0 | Lettuces, Cab., doz. | 1 0– .. |
| Beans, Eng., per lb. | 0 9– .. | — English Cos, doz. | 1 6– .. |
| Beet, per dozen | 1 0– .. | Mint, green, bunch | 0 4– .. |
| Cabbages, per dozen | 1 6– 2 0 | Mushrooms, basket | 1 0– 1 6 |
| Carrots, per bunch | 0 6– .. | Onions, per bushel | 6 0– .. |
| Cauliflowers, English, spring, per doz. | 2 0– 4 0 | — Spring, per bun. | 0 6– .. |
| Celery, per bundle | 1 0– 2 6 | Parsley, per bunch | 0 4– .. |
| Cucumbers, each | 0 6– 1 0 | Peas, per quart | 1 0– 1 6 |
| Endive, per dozen | 2 0– .. | Radishes, per dozen | 1 0– 2 0 |
| Garlic, per lb. | 0 6– .. | Small salading, per punnet | 0 4– .. |
| Herbs, per bunch | 0 2– 0 4 | Spinach, per bushel | 4 0– .. |
| | | Tomatos, per lb. | 1 0– .. |
| | | Turnips, new, bunch | 0 6– .. |

POTATOS.—English, 10s. to 120s. per ton; foreign finished.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0–18 0 | Foliage Plants, various, each | 2 0–10 0 |
| Arbor-vitæ (golden), per dozen | 6 0–18 0 | Fuchsias, per dozen | 4 0– 9 0 |
| — (common), dozen | 6 0–12 0 | Hydrangeas, dozen | 9 0–18 0 |
| Begonias, per dozen | 4 0–12 0 | Lilium auratum, per dozen | 18 0–36 0 |
| Bouvardia, dozen | 9 0–18 0 | — longifolium, doz. | 9 0–18 0 |
| Calceolarias, doz. | 4 0– 6 0 | Lobelia, per doz. | 3 0– 6 0 |
| Carnations, 12 pot | 6 0–12 0 | Marguerite Daisy, per dozen | 8 0–12 0 |
| Cyperus, per dozen | 4 0–12 0 | Musk, per dozen | 2 0– 4 0 |
| Dracæna terminalis, per dozen | 30 0–60 0 | Myrtles, per dozen | 6 0–12 0 |
| — viridis, per doz. | 12 0–24 0 | Palms in variety, each | 2 6–21 0 |
| Euonym., in variety, per dozen | 6 0–18 0 | Pelargoniums, per dozen | 6 0–18 0 |
| Evergreens, in var., per dozen | 6 0–24 0 | — scarlet, dozen | 3 0– 9 0 |
| Ficus elastica, each | 1 6– 7 0 | Rhodanthe, per doz. | 6 0– 8 0 |
| Ferns, in var., dozen | 4 0–18 0 | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Myosotis, 12 bun. | 2 0 | 4 0 |
| Arum Lilies, 12 blms. | 3 0 | 6 0 | Pelargoniums, per 12 trusses | 0 6 | 1 0 |
| Bouvardias, per bun. | 0 9 | 1 0 | — scarlet, 12 trusses | 0 4 | 0 6 |
| Carnations, 12 bun. | 2 0 | 4 0 | Picotees, 12 bun. | 2 0 | 4 0 |
| — 12 blooms | 1 0 | 2 0 | Pinks, var., 12 bun. | 1 0 | 4 0 |
| Cornflower, 12 bun. | 2 0 | 4 0 | Primula, double, bun. | 0 9 | 1 0 |
| Eschscholtzia, 12 bun | 2 0 | 4 0 | Rhodanthe, 12 bun. | 6 0 | 9 0 |
| Eucharis, per dozen | 3 0 | 6 0 | Roses (indoor), doz. | 1 0 | 3 0 |
| Gardenias, 12 blooms | 1 6 | 4 0 | — coloured, dozen | 2 0 | 4 0 |
| Lapageria, white, 12 blooms | 2 0 | 3 0 | — per doz. bunches | 2 0 | 6 0 |
| — red, 12 blooms | 1 0 | 2 0 | — Moss, 12 bun | 6 0 | 9 0 |
| Lavender, 12 bunch. | 4 0 | 6 0 | Stephanotis, 12 spr. | 2 0 | 4 0 |
| Lilium longiflorum, 12 blooms | 2 6 | 5 0 | Sweet Peas, 12 bun. | 2 0 | 4 0 |
| Marguerites, 12 bun. | 3 0 | 6 0 | Sweet Sultan, per 12 bunches | 4 0 | 6 0 |
| Mignonette, 12 bun. | 1 6 | 3 0 | Tropæolum, 12 bun. | 1 0 | 1 6 |

## SEEDS.

LONDON: *July* 29.—The actual business doing in seeds continues small, the chief interest being centred in the new produce. Samples of this season's winter Tares, Rye, Trifolium, Italian Rye-grass, and Rape seed are coming to hand; and, while prices in some cases are not yet fixed, the general range of values promises to be low. There is nothing yet doing in Clover seeds. Hemp seed is rather firmer: no change in Canary seed. In consequence of the bad reports of the new crops holders of blue Peas are asking more money for what little stock they have left over. Feeding Linseed is steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday the business done in Wheat was too small to affect quotations. Flour was dull, but held for late value. Barley, Beans, and Peas were unchanged, but the drought gives support to the market for all feeding stuffs, and Oats were 6*d.* dearer on the week.—On Wednesday nothing transpired to establish any quotable change in current values of Wheat. Apart from this flour remained dull. Maize ruled slow. Oats and other spring corn were quiet and unchanged. —Average prices of corn for week ending July 25:—Wheat, 33*s.* 11*d.*; Barley, 29*s.*; Oats, 21*s.* 8*d.* For the corresponding period last year:—Wheat, 37*s.* 1*d.*; Barley, 27*s.* 5*d.*; Oats, 23*s.* 4*d.*

## CATTLE.

At Copenhagen Fields on Monday the trade showed increased depression. Sales of beasts, even at a decline of 2*d.* to 4*d.* per 8 lb., made but very slow progress. Sheep and lambs were dull of sale, and prices ruled lower by quite 2*d.* per 8 lb. Calves were most unsaleable and quotations nominal. Quotations:—Beasts, 3*s.* 10*d.* to 4*s.* 6*d.*, and 4*s.* 10*d.* to 5*s.* 2*d.*; calves, 3*s.* to 4*s.* 8*d.*; sheep, 4*s.* 4*d.* to 4*s.* 10*d.*, and 5*s.* 2*d.* to 5*s.* 8*d.*; lambs, 5*s.* 8*d.* to 6*s.* 4*d.*—On Thursday want of animation characterised trade. Supplies of beasts were not large, but they satisfied the demand, which continued heavy. Sheep were in a fair supply, and were a firmer market, the best Downs and half-breds making 5*s.* 4*d.* to 5*s.* 6*d.* per 8 lb. Lambs were quoted at 5*s.* 8*d.* to 6*s.* 2*d.* per 8 lb. Calves and pigs were unaltered.

## HAY.

Tuesday's Whitechapel Market report states that trade was very dull, with good supplies: and that inferior qualities of hay were almost unsaleable at the following quotations:—Clover, prime, 80*s.* to 107*s.*; prime second cut, 85*s.* to 107*s.*; inferior, 60*s.* to 75*s.*; hay, prime, 70*s.* to 98*s.*; inferior, 20*s.* to 60*s.*; and straw, 28*s.* to 38*s.* per load.—On Thursday there was a moderate supply on sale. The trade was very dull at Monday's rates.—Cumberland Market quotations:—Clover, best, 85*s.* to 105*s.*; inferior, 60*s.* to 80*s.*; hay, best, 85*s.* to 97*s.* 6*d.*; second quality, 75*s.* to 84*s.*; inferior, 40*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The Borough Market report states that there were fair supplies and quiet trade. Quotations:—Regents, 115*s.* to 140*s.*; Shaws, 100*s.* to 110*s.*; Early Roses, 85*s.* to 95*s.*; kidneys, 130*s.* to 150*s.*; Jersey rounds, 95*s.* to 110*s.*; kidneys, 110*s.* to 140*s.* per ton. The imports into London last week consisted of 1073 boxes from Barfleur, 40 packages Boulogne, 1415 cases Cherbourg, 12 sacks St. Brieux.

## COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Holywell West Hartley, 14*s.* 6*d.*; Dowlais Merthy, 16*s.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 15*s.* 6*d.*; Hetton Lyons, 13*s.* 6*d.*; Lambton, 15*s.* 6*d.*; Wear, 14*s.*; Caradoc, 15*s.* 6*d.*; East Hartlepool, 14*s.* 9*d.*; South Hartlepool, 13*s.* 9*d.*; Tees, 15*s.* 6*d.*

**Government Stock.**—Consols closed on Monday and Tuesday at 99⅛ to 99⅜ for both delivery and the account. Wednesday's figures were 99⅜ to 99⅛ for both transactions. The closing figures for Thursday were 99⅛ to 99⅛, for both money and account.


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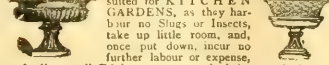
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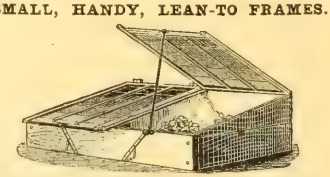


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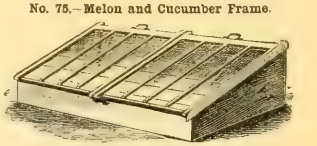
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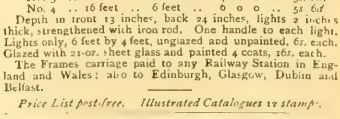
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| 9 | ,, ... | 0 | 5 | 6 | 20 ,, ... | 0 | 11 | 0 |
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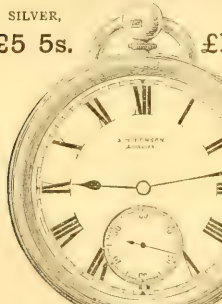
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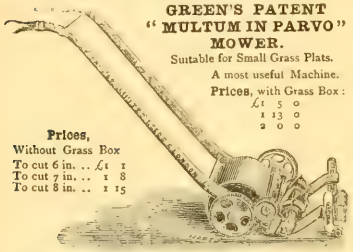
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| To cut 8 in. wide .. | £2 10 0 | To cut 16 in. wide .. | £6 10 0 |
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| To cut 12 in. wide .. | 4 10 0 | To cut 20 in. wide .. | 8 0 0 |
| To cut 14 in. wide .. | 5 10 0 | To cut 22 in. wide .. | 8 10 0 |
| To cut 24 in. wide .. | £9 0 0 | | |

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**"MULTUM IN PARVO" MOWER.**
Suitable for Small Grass Plats.
A most useful Machine.
**Prices,** with Grass Box:
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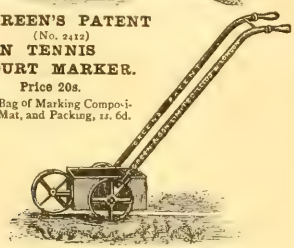
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It is simple in construction, easily adjusted, is well adapted for mowing small plats, cutting borders, verges, round flower beds, the edges of walks, &c. It is a most handy, serviceable machine, and very easy to work.



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**GRASS EDGE CLIPPER.**
With Chain and Wheel Motion.
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SIZE,
8 inches wide by
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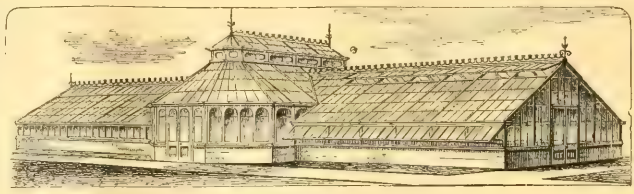
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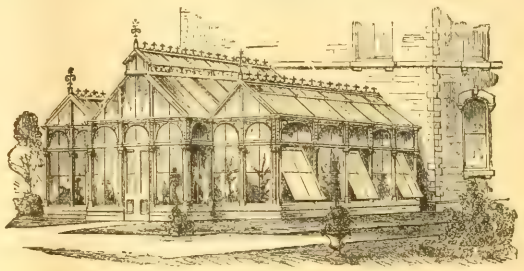
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THE

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*THE GARDENERS' CHRONICLE*, Volume XXIII., JANUARY to JUNE, 1885.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

SHOW of FLOWERS and VEGETABLES, in the Conservatory, on TUESDAY NEXT, August 11. Fellows admitted at 12 o'Clock. Visitors to the International Inventions Exhibition admitted free at 1 P.M.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory, and SHOW of PLANTS and FLOWERS on TUESDAY NEXT, August 11.

N.B.—Exhibitors' Entrance, east side of Royal Albert Hall.

DUDLEY and DISTRICT CHRYSANTHEMUM, FRUIT, and FLOWER EXHIBITION will be held, under distinguished patronage, in the Mechanics' Institute, Dudley, on TUESDAY, WEDNESDAY, and THURSDAY, Nov. 10, 11, and 12. The Prize Lists is now ready, and may be obtained from Mr. WM. WOODHOUSE, Sec. Mechanics' Institute, Dudley, Worcestershire.

SHROPSHIRE HORTICULTURAL SOCIETY.

The GREAT SUMMER SHOW will be held at Shrewsbury on WEDNESDAY and THURSDAY, August 19 and 20. TWENTY PLANTS, in variety, £25, £20, £15.

Schedules free on application to

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WILTS HORTICULTURAL SOCIETY SHOW, Salisbury, AUGUST 20. Division A Open. 12 STOVE and GREENHOUSE FLOWERING PLANTS, 1st Prize, £15; 12 VARIEGATED and FINE-FOLIAGE STOVE and GREENHOUSE PLANTS, 1st Prize, £13. Schedules on application to W. H. WILLIAMS, Hon. Sec. The Nurseries, Salisbury.

BATH AUTUMN SHOW, WEDNESDAY and THURSDAY, September 2 and 3.

Amongst the Prizes offered are:—

For 12 Ornamental Foliage Plants, 1st, £6; 2d, £4; 3d, £2.
For 12 Stove or Greenhouse Plants, 1st, £12; 2d, £8; 3d, £4.
For 8 Dishes of Fruit, 1st, £3; 2d, £2; 3d, £1.
For 8 Bunches of Grapes, 1st, £5; 2d, £3; 3d, £2.
Five other Classes for Grapes in varieties. Prizes in proportion.
Entries close August 29. For Schedules, apply to 14, Milsom Street, Bath. BEN. PEARSON, Sec.

MESSRS. WILLIAM CUTBUSH AND SON (Limited), of the Nurseries, Highgate, Barnet, and Finchley, beg to inform their Patrons and the Public generally, that their Business will be carried on as heretofore, and that all Orders entrusted to them will receive the same prompt and careful attention as hitherto.

Highgate Nurseries, London, N.

WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application. It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad.

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Tree Carnations and Tea Roses.

H. B. MAY offers a splendid batch in 48's, chiefly Miss Joliffe and Andalusia; also a quantity in 60's, fit for immediate potting.

TEA ROSES, Niphetos, Isabella Sprunt, and others, fine stuff. Price per dozen or 100 on application.

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To the Trade.

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R. AND A. MORRISON, The Nurseries, Elgin.

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To the Trade.

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FOR SPECIALLY CHEAP GLASS see Last or Next Week's *Gardeners' Chronicle*.

HY. WAINWRIGHT, 8 and 10, Alfred St., Boar Lane, Leeds.

## SALES BY AUCTION.

**Friday Next.—Very Valuable Importations.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 14, at half-past 12 o'clock precisely, very grand importations of LÆLIA PRÆSTANS and HARPOPHYLLA, CATTLEYA LEOPOLDI, SACCOLABIUM CHURCHILLIANUM, a most beautiful novelty, with spikes a foot and over in length, and very round pure white flowers with dark lip; a large double plant of CATTLEYA EXONIENSIS, best variety; PHAIUS HUMBLOTII, in bloom, perhaps the only plant in cultivation of this fine true Orchid; CATTLEYA SCHILLERIANA and ELDORADO in sound, superb pieces; CATTLEYA SUPERBA SPLENDENS, the Rio Negro variety; GALEANDRA DEVONIANA, COMPARETTIA MACROPLECTRON; a great variety of Mexican ORCHIDS, &c.

On view morning of Sale, and Catalogues had.

**Dutch Bulbs.—Special Trade Sales.**

MESSRS. PROTHEROE and MORRIS beg to announce that they have now FIXED THEIR SALES OF DUTCH FLOWER ROOTS for the ensuing season. The first AUCTION will take place on MONDAY, August 17. This and the three following sales will consist of lots, specially to suit the Trade and other extensive Buyers, and arrangements have been made for the supply of roots of the best quality.

Catalogues will be sent regularly on application. Central Auction Rooms and Estate Offices, 67 and 68, Cheapside, E.C.

**Clapham Common, S.W.**

CLEARANCE SALE of the whole of the CHOICE STOVE and GREENHOUSE PLANTS, including fine specimen and half-specimen CAMELLIAS and AZALEAS, specimen FERNS and PALMS, EUCHARIS, a fine DAVALLIA MOOREANA, 9 feet through; GARDEN UTENSILS, LAWN MOWER, ROLLER, FLOWER-STANDS, RUSTIC SUMMER-HOUSE, double set of Silver-plated HARNESS, single set Brass ditto; capital OMNICYCLE (Butler's patent), and numerous effects.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, Lynton House, Clapham Common, S.W. (next door but one to Elms Road), on WEDNESDAY, August 19, at 1 o'Clock precisely, by order of Mrs. Perrett, who is leaving the neighbourhood.

View day prior to Sale. Catalogues of Mr. GUYERT, Head Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

**Whetstone, Middlesex.**

Nine miles from London, and four minutes' walk from Totteridge Railway Station.

IMPORTANT TO MARKET GARDENERS, LAND SPECULATORS, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Davis & Son (in consequence of the failing health of Mr. Davis, jun.) to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, September 3, at 2 o'Clock precisely, in Three Lots:—

Lot 1, comprising the valuable and attractive FREEHOLD MARKET GARDEN, distinguished as The New Lodge Nurseries, Whetstone, N., containing an area of about 4 acres, 34 superiorly built Greenhouses, containing a superficial area of nearly 80,000 feet of glass, and heated by about 20,000 feet of 4-inch piping, and all other requisite appliances for growing plants and producing the greatest perfection, the whole of the luxuriant and productive Vines are planted out; the substantially brick-built twelve-roomed Residence, three Cottages, Stabling, and numerous other Trade Erections. This Lot will be sold as a going concern, together with the Goodwill of the long-established Business.

Lots 2 and 3 will comprise Two valuable Blocks of eligible FREEHOLD BUILDING LAND, containing a total area of about 13 acres, with commanding frontage to Oakleigh Road, presenting a desirable investment for subdivision into Building Plots.

The Auctioneers would wish to call the special attention of Market Gardeners to Lot 1. The property is in complete working order, and it is indeed seldom that such an opportunity presents itself of securing a first-class going concern under similarly favourable circumstances.

May be viewed. Descriptive particulars, with Plans, may be had on the premises; of Messrs. BERRY, BINNS, AND LINCOLN, Solicitors, 27, Chancery Lane, E.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, E.C.

**Tuesday Next.**—(Sale No. 6946.)

SOUTH LODGE, SOUTHGATE, N.

South Lodge is a mile and a half from Enfield Station on the Great Northern Railway.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on TUESDAY, August 11, at half-past 2 o'Clock precisely, a SMALL COLLECTION of ORCHIDS formed by the late J. S. Law, Esq.; also STOVE and GREENHOUSE PLANTS, FERNS, Tuberous-rooted BEGONIAS, &c.

May be viewed the day prior and morning of Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

**Thursday Next** —(Sale No. 6947.)

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 13, at half-past 12 o'Clock precisely, the COLLECTION of ESTABLISHED ORCHIDS, the property of C. R. Kesterton, Esq., of Nightingale Lane, Clapham, S.W., including fine specimens of Cypripedium Boxallii, C. Lawrenceanum, C. Dominianum, C. Sedeni, C. barbatum superbum, C. selligerum, Cattleyas, Lælias, Oncidiums, Odontoglossums, Miltonia spectabilis virginalis, several plants, Lycastes, Dendrobes, Vandas, &c.

On view morning of Sale, and Catalogues had.

**Thursday next.**—(Sale No. 6947.)

MR. J. C. STEVENS will include in his SALE by AUCTION at his Great Rooms, 38, King Street, TREE AND OTHER FERNS FROM NEW ZEALAND, Covent Garden, W.C., on THURSDAY NEXT, August 13, a consignment of CYATHEAS, DICKSONIAS, and other TREE FERNS, TODEAS, and other FERNS from New Zealand in fine condition, and a quantity of CLEMATIS CRISPA from America. Also 25,000 PHŒNIX RECLINATA SEEDS, a fine lot of CALADIUMS in variety, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6947.)

SPECIAL SALE of ORCHIDS in FLOWER.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 13, at half-past 12 o'Clock precisely, a COLLECTION of ORCHIDS in FLOWER, including some splendid varieties of Cattleya Dowiana, C. gigas, and C. Gaskelliana, fine plants of Aerides quinquevulnerum, Odontoglossum vexillarium, rubellum, Cobbianum, and Klabochiana; O. Pescatorei, O. Alexandræ, O. ramesi-morum, Acidites Lawrenceæ, &c.; also about 120 lots of good ESTABLISHED ORCHIDS in variety.

On view morning of Sale, and Catalogues had.

**Saturday next.**—(Sale No. 6949.)

DUTCH BULBS.—TRADE SALE.

MR. J. C. STEVENS begs to announce that his FIRST SALE of DUTCH BULBS for this season will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY, August 15, at half-past 12 o'Clock precisely, and will include consignments of first-class double and single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS from well-known Farms in Holland, lotted to suit the Trade and other large buyers.

On view morning of Sale, and Catalogues had.

MESSRS. GREGORY AND EVANS beg to inform the Trade that their GREAT SALE of Winter Flowering HEATHS, BOUVARDIAS, CYCLAMEN, SOLANUM, ADIANTUM, &c., will take place in SEPTEMBER, of which due notice will be given.

Longlands Park Nursery, Sidcup.

WANTED, TO RENT, about an ACRE of LAND, or a GENTLEMAN'S GARDEN, with Glass; also a COTTAGE, suitable for market purposes.

A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a compact NURSERY, easy distance from Covent Garden, comprising 8 well-built Houses, principally new. Well heated with 4-inch Hot-water Piping. Shed and covered Stokeholes. No encumbrance. No reasonable offer refused.—J. S., 41, Wellington St., Strand, W.C.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. T. THEOBALD AND CO., 419, California Street, San Francisco, California.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

## Bulbs for Early Forcing.

## SUTTON & SONS,

Having just received, in fine condition, their first consignment of

## ROMAN HYACINTHS,

*Are prepared to execute Orders at the following prices:—*

| | Doz. | Per 100. |
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| | s. d. | s. d. |
| SINGLE WHITE ROMAN HYACINTHS, finest selected .. | 3 0 | 21 0 |
| ditto second size .. .. | 2 6 | 17 6 |
| SINGLE BLUE, ditto .. .. | 2 0 | 14 0 |

SEEDSMEN BY ROYAL WARRANTS

to H.M. the Queen and H.R.H. the Prince of Wales,

READING.

**To Nurserymen, Seedsmen, and Florists.**

DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

**The Success of the Rose Season.**

PAUL AND SON'S

Three New Cheshunt Roses.

H.P. MADAME NORMAN NERUDA—The perfection of a show Rose. First-class Certificate Royal Horticultural Society, July 14.

H.P. LONGFELLOW—The new Moss Rose, vigorous, violet. Charles Lefebvre.

H.P. PRIDE of REIGATE—The finest striped real autumnal flowering Rose. First-class Certificate Royal Horticultural Society, July 14.

The Set of the Three, good Plants in pots, for budding from; or strong good Plants in November; 21s. the Set. Order at once. The "Old" Nurseries, Cheshunt, Herts.

SUTTON and CHEAM HORTICULTURAL SOCIETY.—The TWENTY-SECOND ANNUAL FLOWER SHOW, and County Show of the SURREY BEE-KEEPERS' ASSOCIATION, will be held (by the kind permission of H. Lindsay Antrobus, Esq.) in the Grounds of Lower Cheam House, on WEDNESDAY, Aug. 12. Mrs. Cubitt will distribute the Prizes at 6 P.M. The Bands of the W Division Metropolitan Police and S.M.D. Schools are engaged for the occasion. The Grounds will be opened at 2 o'Clock for Subscribers on presenting their Tickets, and to the Public on payment of 2s. 6d. Admission after 4, 1s.; after 6, 6d., Children Half-price. Admission to Bee Tents: Members, Free; Non-Members, 6d. each. For further particulars, apply to the Officers of the Society, or Members of the Committee, or to Mr. W. R. CHURCH, Sec.; for information respecting the Bee Exhibition to the Hon. Sec., Mr. WATERER, the Common.

TAUNTON DEANE FLORICULTURAL SOCIETY.

The EIGHTEENTH GRAND FLORAL FÊTE of this Society will be held in the Vivary Park, Taunton (by kind permission of Dr. KINGLAKE), on THURSDAY, August 13. About TWO HUNDRED and FIFTY POUNDS will be offered in Prizes for competition. The splendid Band of the Royal Artillery, Woolwich, will attend during the Fête, and Fireworks, under the direction of Cavaliere L. Zaverial. A grand and most extensive Display of Fireworks will be given in the evening by Mr. J. Pain, Pyrotechnist to the Alexandra Palace, including the Halt in the Desert, the Mammoth Balloons, &c.

C. H. SAMSON, Hon. Sec.

The Laurels, Taunton.

WARWICKSHIRE AGRICULTURAL SOCIETY.

Meeting at Royal Leamington Spa, 1885.

A GRAND HORTICULTURAL EXHIBITION will be held in the Jephson Gardens, Leamington, on WEDNESDAY and THURSDAY, September 2 and 3. Entries Close Aug. 19. Schedules on application to

H. J. SARNEY, Secretary, Horticultural Department. 51, Regent Street, Leamington.

**Royal Parks, &c., Grass Seeds.**

THE COMMISSIONERS of HER MAJESTY'S WORKS, &c., are prepared to RECEIVE TENDERS for the SUPPLY of GRASS SEEDS for use in the Royal Parks, &c., during the year 1886. Forms of Tender, containing full particulars, may be obtained at this Office any day except Saturday between the hours of 12 and 3. Tenders are to be delivered before 12 o'Clock noon on Saturday, October 31 next, addressed to the SECRETARY, H.M. Office of Works, &c., 12, Whitehall Place, London, S.W., and must be endorsed "Tender for Grass Seeds, Royal Parks, &c." The Commissioners do not bind themselves to accept the lowest or any Tender.

A. B. MITFORD, Secretary.

H.M. Office of Works, &c., 12, Whitehall Place, S.W.—July 29, 1885.

ADVERTISER having too many Orchard-house Pot-trees, wishes to dispose of about 100 APPLES, PEARS, PLUMS, and APRICOTS, mostly full of Fruit. Also very choice Hothouse Pot VINES, well fruited, including Muscat of Alexandria, Alicante, Gros Colmar, &c. Apply to AMATEUR, 1, Elmcroft, The Cross Road, Wandsworth, S.W.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN and SON, Nurserymen, Overveen, near Haarlem, Holland.

Intending purchasers of DUTCH BULBS are invited to read ANT. ROOZEN & SON'S CATALOGUE for 1885, and see the large saving effected by DEALING DIRECT WITH THE GROWER. The Catalogue, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants, and also particulars as to FREE DELIVERY, will be sent, POST-FREE, on application to them, or to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

**By Special Warrant.**

"Superb SEEDS for PRESENT and Later SOWING."

DICKSON'S CHOICEST strains of PRIMULA, CALCEOLARIA, CINERARIA, CYCLAMEN, BEGONIA, and AURICULA, in packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each. Double German WALLFLOWER, superb strain, 1s. per packet. Extra selected Single Dark Blood-red WALLFLOWER, 6d. and 1s. per packet. Also all other FLOWER SEEDS for "Spring Gardening," as well as VEGETABLE SEEDS for Present Sowing. Carriage and Post free. Seeds and Plants of every description.

Descriptive Priced CATALOGUES Post-free.

JAMES DICKSON & SONS, 108, EASTGATE ST., CHESTER.

**New Hybrid Aloe.**

ALOE INSIGNIS.—A very beautiful and highly ornamental Aloe, raised from A. drepanophylla fertilised by A. echinata. Flowers remarkable and beautiful; requires ordinary greenhouse culture. Described and figured in this volume of the *Gardeners' Chronicle*, p. 42, f. 41. Orders received will be sent out later in the season. Every one should possess this plant. Price 3 Guineas.

Also the new plant, THALICTRUM RHYNCHOCARPUM, with graceful Fern-like foliage, very ornamental. Now offered for the first time; referred to in *Gardeners' Chronicle*, vol. xxi., p. 22. Price 1 Guinea.

Also a large Collection of SUCCULENT PLANTS for sale.

THOMAS COOPER, Exotic Nursery, Brighton Road, Redhill, Surrey.

**Ferns.—Ferns.—Ferns.**

TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20s. per 100, £9 per 1000.

ADIANTUM LE GRANDE, nice plants, ready for potting on, 30s. per 100.

ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40s. and 50s. per 100.

The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

# ROSES

IN POTS; all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per doz.

*Descriptive LIST free on application.*

RICHARD SMITH & CO.,
WORCESTER.

The Livepool
Horticultural Co.
(John Cowan), Limited,

**GRAPE VINES.** Have this season a stock of GRAPE VINES which have never been surpassed, if indeed equalled. Intending purchasers are requested to come and see them during the growing season. The Black Hamburghs for fruiting in Pots are especially fine, and the entire stock are from eyes this season. Planting Canes, 5*s.* and 7*s.* 6*d.* each; Fruiting Canes, 10*s.* 6*d.* and 12*s.* 6*d.*, each.

**TEA ROSES.** The Company have a very large stock of TEA and NOISETTE ROSES, comprising all the leading varieties. The plants are healthy and in good condition for sending out. 12*s.*, 18*s.*, and 24*s.* per dozen.

**MANURE.** COWAN'S VINE and PLANT MANURE. This is too well known to need recommendation. 18*s.* per cwt.

**ORCHIDS.** The Company have a large stock of established and Imported ORCHIDS, all in fine condition, and they are constantly receiving fresh importations from various parts of the world.

CIRCULARS WITH FULL PARTICULARS ON APPLICATION.
*Special Prices to the Trade.*

THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

SEEDLING PLANTS
OF CHOICE
FLORISTS' FLOWERS.

*We have much pleasure in offering strong healthy transplanted seedlings from our superb strains of the following:—*

| | Doz. | | 100. | |
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| **Calceolarias,** from choicest flowers only, beautifully tigered and spotted .. | *s.* 1 | *d.* 6 | *s.* 10 | *d.* 6 |
| **Carnations and Picotees,** from stage flowers. Will produce 80 per cent. of fine double blooms .. .. .. | 1 | 6 | 10 | 6 |
| ,, choicest yellow, very fine .. .. | 2 | 6 | .. | |
| **Cinerarias,** from a grand strain of beautiful flowers .. .. .. .. | 1 | 6 | 10 | 6 |
| ,, New, dwarf, large flowered, splendid | 2 | 6 | .. | |
| **Primula,** Crimson King, magnificent .. | 3 | 6 | .. | |
| ,, **alba magnifica,** large, pure white, with beautifully fringed flowers .. | 2 | 6 | .. | |
| ,, Daniels' choicest red, very fine .. | 1 | 6 | 10 | 6 |
| ,, ,, ,, white, very fine .. .. | 1 | 6 | 10 | 6 |
| ,, ,, ,, mixed, very fine .. .. | 1 | 6 | 10 | 6 |
| ,, ,, ,, ,, extra strong plants .. | 2 | 6 | 15 | 0 |
| ,, Fern-leaved, very choice, mixed .. | 1 | 6 | 10 | 6 |

*Carriage Free on receipt of Post-office Order.*

DANIELS BROS.,
TOWN CLOSE NURSERIES, NORWICH.

# CLEMATIS

**JACKMANNI ALBA (Noble).**

"The hardy flowering plant of the season." "Certificated unanimously."

(See *Gardeners' Chronicle*, July 28, 1883.)

*Now being sent out at 7*s.* 6*d.* and 10*s.* 6*d.* each. Cash or reference.*

CHARLES NOBLE, BAGSHOT.

Come and See
5000 LILIUM AURATUM in Bloom.
Many Spikes with 15 to 20 large open Flowers.
A MAGNIFICENT SPECTACLE.
Spikes cut and sent to order, packing free.
8*s.* to 12*s.* per dozen.
NEW PLANT and BULB COMPANY, Colchester.

OUR AUTUMN TRADE LISTS, Nos. 75, 76, are now published. Traders not having received a copy are requested to apply for one.

To Cherry Forcers.

FOR SALE, a pair of splendid three-quarter Standard Trained Trees, BIGARREAU NAPOLEON and ELTON. Been four years under glass. Clean, healthy, and loaded with flower-buds. Roots lifted last year with view to disposal. Fit for removal early in September. For further particulars apply to
W. COLEMAN, Eastnor Castle, Ledbury.

BOUVARDIAS, in eight best kinds, including Doubles, bushy plants, 25*s.* per 100. GARDENIAS, nice plants, some in bud, 25*s.* per 100 POINSETTIAS, beautiful plants, 20*s.* per 100, package included.
W. JACKSON, Blakedown, near Kidderminster.

ADIANTUM CUNEATUM, good strong plants, from boxes, 6*s.* 6*d.* per 100, £3 per 1000. POLYPODIUM AUREUM, 5*s.* 6*d.* per 100, £2 10*s.* per 1000. Fit for putting in small pots. Sample, not less than 50, sent free for 4*d.* Cash with order.
G. ADCOCK, Florist, Rokeby Road, Brockley, S.E.

THE "GOVERNOR" CARNATION.—This beautiful Carnation is now in full flower, and one of the grandest sights of the season. Cut blooms 5*s.* per dozen, post free. Sample blooms on application. Plants ready in autumn, 1*s.* 3*d.* each. New PINK, "The Fairy:" plants, now ready, 1*s.* 6*d.* each. ROSES in splendid condition: prices on application.—CROSS and STEER, Salisbury.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks 25*s.*; sacks, 4*d.* each
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 25*s.* per half ton, 40*s.* per ton in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE: newly made. The same as supplied to the Horticultural Society.—Truck-load of 2 tons, 20*s.*; twenty sacks of same, 14*s.*; forty, 25*s.*, sacks included. All Free on to Rail. Cash with orders.—J. STEVENS and CO., Cocoa-nut Fibre Merchants, "Greyhound Yard," and 153, High Street, Battersea, S.W.

12-oz. Sample Packets, free by post, 12 Stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, £5 per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 Tons.
WALKER and CO., Farnborough Station, Hants.

GARDEN REQUISITES.
TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous .. 4*s.* 6*d.* per sack; 5 sacks for 20*s.*
PEAT, best black fibrous .. 5*s.* 6*d.* ,, 5 sacks for 15*s.*
PEAT, extra selected Orchid 5*s.* 6*d.* ,,
LOAM, best yellow fibrous ..
PREPARED COMPOST, best } 1*s.* per bush. (sacks included).
LEAF MOULD, best only .. }
PEAT MOULD,
SILVER SAND, coarse, 1*s.* 3*d.* per bush., 12*s.* half ton, 22*s.* ton.
RAFFIA FIBRE, best only .. .. .. 1*s.* per lb.
TOBACCO CLOTH, finest imported .. 8*d.* lb., 28 lb. 18*s.*
TOBACCO PAPER (Nicotianic) 8*d.* lb., 28 lb. 18*s.*
MUSHROOM SPAWN, finest Millrack .. 5*s.* per bushel.
SPHAGNUM MOSS, all selected, 2*s.* per bush., 6*s.* per sack.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* each; 20 sacks, 9*s.*; 35 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

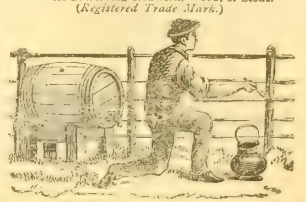
GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 2*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

CARSON'S PAINT.
Patronised by
*HER MAJESTY*,
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
15,000 OF THE NOBILITY, GENTRY, AND CLERGY.
Is extensively used for all kinds of
OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames.
CAN BE LAID ON BY UNSKILLED LABOUR.
1 *Cwt., and Oil Mixture, Free to all Stations.*
Non-Poisonous Paints for Inside Work, Conservatories, &c.
*Prices, Patterns, and Testimonials, Post-free.*
CARSON'S,
LA BELLE SAUVAGE YARD, LUDGATE HILL, LONDON, E.C.;
21 and 22, BACHELOR'S WALK, DUBLIN.
*Discount for Cash.*

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest prices of WATSON and SCULL, 90, Lower Thames St., London, E.C.

Oil Paint no Longer Necessary.
HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requiring no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.
Sold in Casks of about 50 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.
"*Piercefield Park, June 21, 1876.*—SIRS, I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow,—I am, Sirs, yours respectfully, WM. COX."

CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

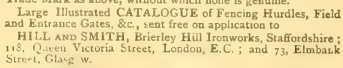
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HORTICULTURAL GLASS

| SHEET | |
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| 14×12 | 20×15 |
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21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.
A large stock of similar current sizes of 15-oz. glass in 200 feet boxes.
Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from
GEORGE FARMILOE & SONS,
GLASS, LEAD, OIL and COLOUR MERCHANTS.
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*Stock List and Prices on application.* Quote *Chronicle.*

Rosher's Garden Edging Tiles



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER and CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES: also for FOLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.
F. ROSHER and CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER and CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

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(*B B CANNON BRAND*).

GUARANTEED QUALITY.



**At much Reduced Prices per sheet, per cwt., per ton.**

Sheets, 5 feet long by 2 feet wide, 2*s.* per sheet upwards.

### Champion Prize Galvanized Wire NETTING.

THREE GOLD MEDALS. Much reduced prices. 2-inch mesh, 2 feet wide, 6*s.* per roll of 50 yards; Rabbit Netting, 1½-inch mesh, 2 feet wide, per roll of 50 yards, 8*s.*; other widths at proportionate prices.

### Extra Superior Jet Black VARNISH.

**Not to be Equalled.**

**PRICES.**—In Casks of 36 and 18 gallons, 1*s.* 6*d.* per gallon, carriage free to any railway station. NO CHARGE FOR CASKS. May be applied by any one, drying a beautifully smooth and hard jet black very quickly.

**J. B. BROWN & CO.,**

Offices: 90, CANNON ST., LONDON, E.C.

## GARDEN NETTING.

**S. A. SANDS**

(Successor to J. W. HAYTHORN),

**Manufacturer of Hexagon and Chiswick GARDEN NETS.**

Warranted to Protect Bloom from Frost, Winds, Hail, and Fruit from Birds, Wasps, &c.

**Pattern and Prices Free per Post.**

**Address—S. A. SANDS,**

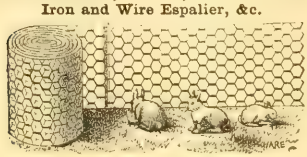
20, CLUMBER STREET, NOTTINGHAM.

TIFFANY and SCRIM, for Protecting Fruit Trees and Greenhouse Shading, from 2*d.* per yard. TANNED NETTING, in all widths, at wholesale prices. RUSSIAN MATS of every description. RAFFIA for tying. TOBACCO PAPER and CLOTH, and all Horticultural Sundries. Price LIST on application.

J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

## IRON HURDLES, GATES, TREE GUARDS,

**Iron and Wire Espalier, &c.**



*CATALOGUE Free. Please name this paper.*

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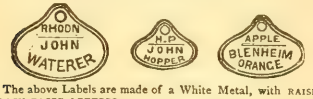
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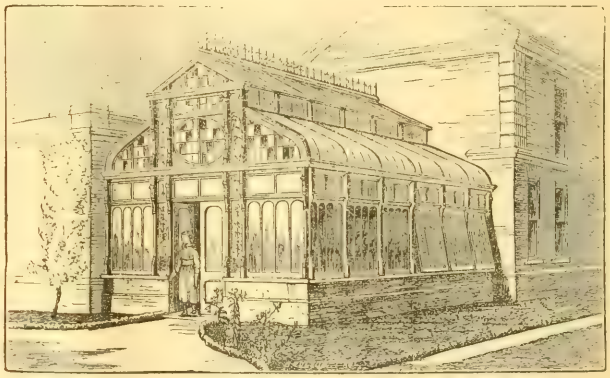
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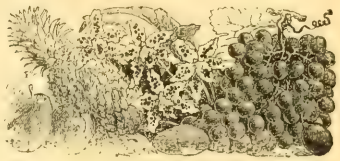
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# Gardeners' Chronicle.

*SATURDAY, AUGUST 8, 1885.*

## BURFORD LODGE.

SIR TREVOR LAWRENCE'S noble collection of Orchids, in spite of the hot, dry season, which has been very trying to most cool things, is making that good progress for which it is noted, and which, considering the extraordinary variety of the species cultivated, and the great age of many of the specimens, cannot fail to be a source of surprise to all who know how difficult it is to manage a large mixed collection, and how liable some of the plants are to decline in time unless managed with the greatest skill. So many of our Orchid-growers cultivate only the showy genera, and things which can be bought by the hundred, such as Cattleyas, Odontoglossums, and Masdevallias—things which can be treated in batches—that they know but little of the constant care and vigilance required in the Burford collection, which stands alone in the possession of specimens of the rarest things, both new and old, in many cases the specimens there being the only ones in cultivation. The interest of the Burford collection is also greatly enhanced by the many fine hybrids raised there, and of which every year brings forward new treasures, now that they have had time to grow to flowering size—hybrid Calanthes of great beauty, Zygopetalums of strange parentage, and Cypripediums, Cattleyas, and Dendrobes, some proven good, and others whose parentage give great promise. Among the Cypripediums raised at Burford may be noted that lovely plant C. Leeanum, the result of a cross between C. niveum and C. insigne violaceo-punctatum, and which was also raised by Messrs. Veitch, of Chelsea. The nice batch of it at Burford Lodge proves it to be one of the freest growing, as it is one of the handsomest of Cypripediums. Also growing very strongly is a nice lot of an interesting cross between Dendrobium Findlayanum and D. heterocarpum; the plants are from crosses both ways, but in both cases they seem alike and just intermediate between the two parents.

Among the rare plants which every one likes to hear about we noted a fine specimen of Aërides illustre, a rare species in the way of A. Schrœderii, the original plant of A. Lawrenciæ, furnished well with spikes; Saccolabium cœleste, that little beauty with spikes of pale blue flowers with dark blue labellums; Odontoglossum vexillarium Lawrenceana (superbum), the king of all "vexillariums"; O. Warscewiczii, very strong; Cattleya Wagnerii with twelve young growths—a grand mass; and the huge specimen of Renanthera coccinea, which was mentioned by Mr. J. O'Brien in his paper read at the Orchid Conference, as having been exhibited by A. Palmer, Esq., of Cheam., in 1846, with seven panicles of scarlet flowers, each bearing from 100 to 110 flowers. Of course the plant was an old one then, and the original label now in it at Burford dates back to 1816. The vigour of the plant, after so many years of cultivation, proves that Orchids need not die so prematurely as they often do, if they are well looked after. Among the other rare things are the new An-

græcum Leoni in bud, A. Scottianum, of the same importation, also well advanced for flower, and evidently true; and Odontoglossum excellens, which is one of the most beautiful of Odontoglossums. It was imported a few years ago by Messrs. Hugh Low & Co., and was evidently a natural cross between O. Pescatorei and O. triumphans; it is a very lovely thing, with lemon-yellow sepals, and petals blotched with reddish-brown, the large white labellum being also stained with yellow at the base, and marked with the same bright colour as the petals. The last new Cattleya, too, which every one is looking forward to seeing — C. Lawrenceana, from the Roraima — is sheathing up well, and will soon show what it is like.

The Odontoglossum-house is purposely kept short of bloom at this season, as the plants get through the hot weather better without having to support the flowers. A good plan of keeping the house cool in very hot weather is being tried at Burford, as it has been in many other places, viz., syringing the blinds from time to time during the heat of the day, and this is found to keep a good atmosphere in the house, and also to reduce the temperature 2°, which makes a great difference to highland and cold-loving Orchids.

The Cattleyas are in good order, the now favourite C. Gaskelliana and the varieties of C. Eldorado having to supply the greater part of the flower. Some good specimens of the former (one with ten large and perfectly formed flowers) are magnificent, being showy, delicately tinted, and delightfully fragrant; a well flowered plant of the white and orange C. Wallisii is also very handsome, and gives off a delicate odour of Honeysuckle.

The Cypripedium-house is the showiest just now, indeed, since the raising of so many fine hybrids its occupants seem never without a display, as one section follows the other, the perpetual flowering "Sedeni" section weaving them all together. Some of the best, of which there are large specimens at present in flower at Burford, are C. Ashburtoniæ and C. A. expansum, the latter being a much rounder and better thing in every respect than the former; C. œnanthum superbum, with large white and finely-marked dorsal sepal; C. tonsum, with immense flowers, shaped somewhat like C. Lawrenceanum, yellow, tinged with green, and sparsely marked on the petals with blackish blotches; C. Lawrenceanum, a noble plant of the best form, with fourteen flowers; C. ciliolare, C. Veitchii, and C. Parishii, with four spikes, and six flowers on a spike. In the same house is a grand specimen of the elegant Dendrochilum filiforme, with about one hundred flower-spikes, and beneath the stage are planted Eucharis amazonica, which seem to thrive well and give flowers freely.

In the other house—sall of which are patterns of cleanliness, neatness, and order—many other interesting things are flowering, among which we noted Dendrobium ciliatum, a curious species with buff petals and a brown lip curiously ridged and fringed; D. Smilliæ, with habit of D. secundum and pinkish green-tipped flowers a little resembling those of Veltheimia capensis; D. Jamesianum, Utricularia Endresii, with sky-blue flowers, many specimens; Bolbophyllum Dearei, Odontoglossum gracile, with brown flowers, white recurved lip and purple tint over the whole plant—very curious; Epidendrum stenopetalum, with bright rose-coloured flowers exactly like Barkeria blooms, a very rare plant, although dried specimens have been sent from various parts many years ago among others from Merida, near St. Christoval, where it was found in the forests at 3000 feet elevation; Epidendrum Cooperi, a gigantic plant of Sobralia macrantha splendens, Lælia callistoglossa, L. elegans, Calanthe pleiochroma, Cattleya Schilleriana, and Stanhopea eburnea are also in flower, and two fine specimens of the handsome white Mormodes luxatum eburneum, each with eighteen to twenty large flowers on a spike, are marvellously beautiful. The Masdevallia-house is spare of bloom, but the plants are perfect and many of the rare and curious things are in bud, notably a great panful of Masdevallia racemosa (Crossii) with many spikes, and the curious bell-flowered M. Carderii.

In speaking or writing of Sir Trevor Lawrence's pretty establishment the Orchids always come first, and naturally so, for they, the main feature there; but whatever other branches of gardening are gone into at Burford are equally well attended to, and equally successful; and the vineries, stove and greenhouse plants, and general outdoor garden, will compare favourably with the best. The large span-roofed cold house, devoted to greenhouse flowering plants at the present time, is charmingly arranged with tuberous Begonias, Impatiens Sultani, Trichinium Manglesii, and other flowering plants, the tall group fronting the door being a very effective display; it is composed of several large specimens of the orange Monbretia Pottsii, equally good; pure white Agapanthus, some fine plants of the tall shrubby Gloxinia maculata, with its spikes of wax-like blue flowers; some big bushes of Impatiens Sultani, and other flowers, and suitable foliage. In the stoves are some very fine Pitcher-plants, Anthurium Veitchii, A. Warocqueanum, and other fine-foliage plants. Here and there rise the tall curious scarlet spathes of Anthurium ferrierense, A. Andreanum, and A. Scherzerianum, the best forms of the last-named being the brilliant spathed Cypher's variety, which often measures 6 inches by 4 and is borne on very tall and strong stalks; and, A. S. Palmerii, with very long and narrow spathes of a very bright colour. The Tydæas, Clerodendrons, Gardenias, &c., are also very pretty in the arrangement. In the fernery varieties for cutting and for decoration are principally grown, and these are in good order. A great portion of the out-door garden is devoted to herbaceous perennials and florists' flowers, which are handsome to look at and useful for cutting, and notwithstanding the long spell of dry weather there is a profusion of bloom. The Alstrœmerias have seemed to like the heat, and have bloomed profusely.

The large beds of Gaillardias, Rudbeckias, Carnations, Phloxes, and other showy things are very effective and useful; and the general collection of herbaceous plants give some interesting things in bloom, one of the best of the blue flowers being Platycodon grandiflorum, and one of the most elegant for mixing with other flowers, Gypsophila paniculata, with its large panicles of silvery little flowers. As an ornate and noble plant Crinum Powelii, which has been growing in the open ground at Burford Lodge for some years, is one of the finest. It is there now, furnished with many spikes of large blush-coloured and fragrant flowers, which last a long time when cut, the buds opening in water as well as they do on the plant.

The whole of the gardens at Burford Lodge seem to improve every year, and the Orchids do not get neglected for the garden nor the garden for the Orchids, as sometimes happens.

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WOMEN'S WORK. — A French woman writes to the *Vigne Americaine* to say that although, unlike some of her sex, she does not attend a school of grafting, yet she manages to graft 300 Vines a day in March and April, besides attending to her children and to her household duties. Her husband, less embarrassed by other work, grafts twice the number. Numbers of women and girls are now employed at the proper season in grafting the better kinds of French Vines on to American stocks, which are less injured by the attacks of the Phylloxera.

# New Garden Plants.

## ODONTOGLOSSUM LÆVE (*Lindl.*) AURATUM, *n. var.*

Is this a second Odontoglossum læve? I think so. Its character is a very narrow lip, little dilated at the apex and acute at the top. It would also appear to have simple racemes in lieu of panicles, but of this I am not quite sure. I had it first in October 1, 1881 from Director Moore, of Glasnevin; then from Mr. F. Sander; finally from Messrs. J. Veitch & Sons, who obtained it from Major Lendy, of Sunbury House, Sunbury-on-Thames.

## MALVASTRUM GILLIESII (*Baker*) = MALVA (MODIOLA) GERANIOIDES (*Gillies*.); *Hook and Arn. in "Bot. Misc.,"* iii., 152, *non Cham. and Schlecht. in "Linnæa,"* v., 226 = MALVA GILLIESII, *Steud., "Nomenclature," edit.* 2.*

This is a fine plant, tolerably well known in gardens, but which is in want of a name. It belongs to the genus Malvastrum, and it was described long ago under the name of Malva geranioides, but we cannot call it Malvastrum geranioides, because that name is already preoccupied by a Mexican plant. Our only wild specimens in the Kew herbarium were gathered in Parana, by M. Gibert. It is closely allied to Malva purpurata, Lindl., *Bot. Reg.*, t. 1362, *Bot. Mag.*, t. 3814, which also is a species of Malvastrum. Malvastrum may be distinguished at a glance from Malva by its capitate stigma. It contains a great many fine plants, nearly all of which are natives of the Cape and the temperate regions of North and South America. It belongs to the same tribe as Malva, Althæa, and Lavatera, characterised by its solitary erect seeds. Modiola belongs to the tribe with more than one ovule in each cell. The present plant has been in full flower on the Kew rockery for the last month, and came to us from Mr. Joad.

A perennial, with habit and flower rather like Geranium sanguineum. Stems radiating in a circle from the root, about a foot long, slender, decumbent, pilose. Leaves alternate, with a long ascending petiole and two persistent green ovate free stipules; blade deltoid, deeply palmately quinquefid, or in the upper leaves trifid; segments deeply pinnatifid, with a few remote lanceolate lobes, the lower compound. Flowers solitary on long ascending slender pedicels from the axils of the upper leaves. Epicalyx of three ovate-lanceolate free persistent bracteoles. Calyx pilose, ⅝ inch in diameter, with a short tube and five ovate-lanceolate segments. Corolla bright deep rose-red, 1½ inch in diameter; petals orbicular, unguiculate. Staminal column less than half as long as the petals; anthers peltate; filaments free and spreading in the upper third. Pistil shorter than stamens; stigma blackish, capitate. *J. G. Baker.*

## ONCIDIUM CALOGLOSSUM, *n. sp.*†

A stately Oncidium from tropical America, introduced by and kindly sent to me by Mr. Bull, with the following remarks:—"It has a large branching inflorescence of about thirty flowers, with bulbs and leaves very much like those of Oncidium Marshallianum, the bulb perhaps smaller," the flowers equalling those of Oncidium pectorales. The sepals and petals are yellow, striped with sepia-brown, and those stripes remarkably confluent in the petals. The lip is of brighter yellow, with brown blotches in front, the warts of the calli reddish with numerous brownish-red spots all around. Column of the lightest yellow colour, with a greenish hue on the back and on the sides, with a few brownish-red spots at the base, and purple spots on the wings. *H. G. Rchb. f.*

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* *Malvastrum Gilliesii*, Baker. — Perennis; caulibus gracilibus decumbentibus pilosis; stipulis persistentibus ovatis, foliis longe petiolatis palmatim quinquefidis segmentis pinnatifidis pinnulis paucis lanceolatis remotis; floribus axillaribus longe pedunculatis; bracteolis 3 liberis calyce brevioribus; calycis pilosis tubo brevi segmentis ovatis acutis; petalis orbicularibus magnis rubris, staminibus petalis triplo brevioribus. *J. G. Baker.*

† *Oncidium caloglossum*, n. sp.—Affine Oncidio Mrshallii no, Rchb. f., et pectorali, Lindl. Labelli auriculis basilaribus ellipticis parvis, lacinia mediana cuneato dilatato antice biloba; calliorum systemalibus quinis, systemate basilari a basi aperta lata triangulo e papulis inter se liberis multis, area extrorsa hippocrepica e papulis utrinque, lamellis plantis divergentibus, margine papulis utrinque antice; columnæ alis brevibus abruptis paulo undulatis. Ex Am. trop.; introd. cl. W. Bull. *H. G. Rchb. f.*

## ORCHIDS FOR AMATEURS.

(*Continued from p.* 105.)

The genus Lælia contains some of the most beautiful, if not the most beautiful, plants of the order. The grander forms of Lælia purpurata and elegans are unequalled in the vegetable kingdom, and every species, even the tiny Lælia monophylla of the mountains of Jamaica, has a chaste elegance and a brilliancy of colour which cannot fail to excite the enthusiasm of the lover of Nature.

The close relationship of Cattleya and Lælia has already been noted, but to my mind the flowers of Lælia excel those of the sister genus. The two, however, cross freely, and some species are referred to either genus with equal propriety, if we except the single character drawn from the number of pollen masses, and even this character is purely artificial, and in some cases the four extra pollen masses in Lælia are rudimentary. One of the grandest of the Lælias is exceedingly abundant; it is known as Læ lia purpurata.

*Lælia purpurata.*—This plant is a native of Brazil, and it was introduced with the great majority of the genus in 1840. Perhaps no Orchid is more variable, but unfortunately many varieties fall very short in excellence when compared with such grand varieties as L. purpurata Williamsii and Brysiana. A "good" L. purpurata is a magnificent sight when in flower, but some are very disappointing. The flowers are from three to five in number, supported on a branching spike, surrounded by a green spathe, which is often spotted with violet. They are 6 inches in diameter, or even larger; the sepals and petals are narrow, white, or rose-coloured; the labellum is cornet-shaped, with a very broad lip, almost resembling that of Cattleya labiata. The lip is deep purple, with a yellow throat, and lines of purple extending back to the claw of the labellum. The points of excellence are the broadness and depth of colour in the lip, the definite lines extending into the throat, and the texture and flatness of the sepals and petals.

There is a strong tendency in the flowers of L. purpurata for the sepals and petals to roll up longitudinally, probably from poorness of texture. This is a great blemish. The margin of the lip is always paler than the rest, with a tendency to spread in the centre towards the throat; the extension of the pale area is also a blemish, and it sometimes destroys the dark purple of the lip, which is reduced to an irregular band or two spots. I believe these defects are the result of starvation. The yellow or orange in the throat of the type form is absent in L. Schilleriana, which appears to be a mere variety of L. purpurata.

Other varieties differ in having lilac or rose-coloured sepals and petals, and in the brighter colouration of the lip, which is crimson in L. purpurata Nelisii and Brysiana. The latter is perhaps a natural hybrid between L. purpurata and L. crispa.

*L. purpurata Williamsii* has a deep violet lip and pure white petals and sepals.

### Culture.

The cultivation of L. purpurata is easy, although great differences of opinion prevail as to the best temperature for its growth. It is a very accommodating plant, and will grow without much heat. My own belief is that it requires a high temperature and plenty of moisture during the period of growth, say, 75° to 85° or 95° to 100° on sunny days, with a very decided fall at night, say, to 60°. In the winter during its rest 50° is amply sufficient.

Plants which have lost their main lead are a long time before they flower, and this is the case with the majority of newly imported plants. The first shoots are often feeble, then two or three years are necessary to get a flowering bulb, but if each succeeding bulb is better than that which preceded it success is certain. In a healthy state the pseudobulbs of L. purpurata are quite smooth. The imported bulbs are usually deeply channelled or grooved, but these either die, or become plump and smooth in a year or two.

After the year's growth is completed the plant requires a distinct and decided rest, and scarcely any water, except an occasional syringing or sponging. The flowers and young shoots are produced at the same time, the former from the bulb of the preceding summer. As soon as growth commences the plants require a gradually increasing temperature, and a corresponding increase of moisture. I remove my plants to a cool well-aired house—Mexican—as soon as the growth is completed, and return them to a moist stove in spring. It is important to have the compost pretty dry before reducing the temperature in autumn.

*L. elegans* differs considerably in habit from the last species. Its cylindrical-jointed pseudobulbs, bearing one or two leaves, are very unlike the stout fusiform pseudobulbs of L. purpurata, although the flowers of the two species are closely related. The sepals and petals are white or rose-coloured; the labellum is edged with white, and marked with a deep purple band. The striæ leading to the throat, and the yellow band within the purple are wanting; some varieties are very fragrant.

Its cultivation differs little from that of its congener, but the flowers are produced in the same year as the bulb which bears them, before it arrives at maturity. So that the period of rest does not precede the flowering. The epoch of flowering is variable and depends upon the time at which the flowering growth is started. It is a maritime plant, a native of Brazil, and comparatively rare.

*L. Turneri* is a variety of L. elegans with very dark flowers and a bright blue border to the lip of the labellum. L. Wolstenholmiæ is also a variety of L. elegans.

*L. gigantea*, Lindley, is a distinct species closely related to L. elegans, from the Andes. The sepals and petals are green, and the labellum is reddish-brown. The plant, figured and described by Warner under this name is quite distinct, and is perhaps a variety of L. elegans. It is a native of Brazil; the petals and sepals are rose coloured dotted over with bright purple spots. It should perhaps be called L. elegans gigantea.

*L. superbiens.*—This is a very distinct species with the habit of L. purpurata. It has upright, somewhat compressed pseudobulbs, 12 to 18 inches long, with one or two coriaceous leaves growing from the summit of each bulb. The flowers are smaller and more fleshy, and the labellum is raised into parallel fleshy ridges. The flowers are purple, and the throat of the labellum is orange-coloured both outside and inside. The flowers are eight to twelve or more in number on each spike, and the spikes are said in its native country to be 10 or 12 feet long with twenty or more flowers. Twenty years ago a magnificent plant of this species was growing at Chiswick. It frequently had five or six spikes of flowers open at the same time. It was growing upon a large block in a cool stove without either peat or moss. It grew exceedingly well, and increased every year. It is said to have measured 5 feet in diameter, and it was purchased by E. Farnie, Esq., of Liverpool. This plant is a native of Guatemala, and was discovered by Skinner in 1839. It requires plenty of air, and, according to the Count de Buysson, it grows well in a vinery. He adds that it does best in a well-drained, dense compost, differing in this respect from all other Lælias, which flourish best in the most porous compost that can be afforded them. *B. T. L.*

(*To be continued.*)

## EUCALYPTUS.

You publish from time to time in the *Gardeners' Chronicle* notes on Eucalyptus, which greatly interest me. I have not only studied the numerous species, but I also interest myself in propagating them wherever there is a chance of success. This explains the interest that I have in reading in your journal of the attempts that are made in England.

The greater part of the experimenters only work with E. globulus, which is not the one that succeeds best in Northern climes. There are species much more hardy, such as, for example, E. viminalis, E. Gunnii, E. polyanthema, E. coriacea, and E. coccifera. It is believed, moreover, that E. globulus is the quickest grower, and certainly it is classic under this head; but I possess another undetermined species which grows at least twice as quickly. My tree at the present time, five and a-half years old since the sowing of the seed, is over 12 metres (more than 37 feet) in height, and more than 1 m. in circumference at the base. It is a very handsome tree, and of regular pyramidal form. Moreover, it is about to flower, and probably will yield seeds; so that the species may be propagated.

I have reason to believe that this remarkable tree has not yet been described or recognised among other species of similar appearance, for here the confusion of species is easy and frequent when there has been no opportunity of examining the young plants. If it is really new—and that is extremely probable—I will publish it under the name of E. Muelleri to commemorate the labours of the great Australian Eucalyptographer, who has contributed more than any one else to the propagation of Eucalyptus in the South of Europe and Algeria. The services which he has rendered us are inestimable, although the public is too prone to forget them. It is an injustice to be repaired.

The *Gardeners' Chronicle* has frequently noticed the *Eucalyptographia*, which contains a detailed description of a hundred species. To properly understand the difficulty of such a work it is necessary to be occupied specially with Eucalyptus, the incredible variability of which seems to defy the perspicacity of the most skilled botanists. Bentham himself, with the information supplied to him by F. Mueller, declared this difficulty "almost insuperable," and this assertion is not exaggerated. I have now hundreds of young Eucalyptus obtained from seeds, where individuals vary from germination to such an extent as not to be recognisable. It is said that the same species take different characters according to the locality whence the seeds are collected, and the question is presented, "Are there truly fixed species in the genus Eucalyptus?" Acacia and Melaleuca seem to me every bit as difficult to unravel, but that is a matter I leave to others. *Ch. Naudin.*

## CAMELLIAS.

Next to the Rose no flower is more beautiful or more useful than the Camellia. It may readily be so managed that its natural season of blooming shall be from October to March, thus coming in at a time when Roses can hardly be had without forcing. In every quality, with the single exception of scent, the Camellia may be pronounced the equal of the Rose. It can be used in all combinations or for all purposes for which Roses can be employed. In form and colour it is probably more perfect, and fully as brilliant. It is equally or more durable, either on the plant or as a cut flower. It is a little dearer to buy, and perhaps slightly more difficult to cultivate; but like most plants the Camellia has crucial periods in its life, when it needs special treatment. That given, it may be grown with the utmost ease; that withheld, its culture becomes precarious, or a failure. The Camellia is so hardy that it will live in the open air in many parts of Great Britain, and herein lies a danger to many cultivators. Because it is quite or almost hardy they keep it almost cool. This is all very well if the cool treatment be not carried to extremes, and persisted in all the year round. Camellias in a dormant state will live and thrive in any temperature above the freezing point, and will take little or no hurt if subjected to from 3°—4° below it, or a temperature of 27° Fahr.

They will also bloom freely in a temperature of 40°, though 45° suits them better. Hence, during the late summer and early autumn it is hardly possible to keep Camellias too cool either out-of-doors or in. They are also particularly sensitive to heat just before the flower-buds begin to swell in late autumn or winter; a sudden or sensible rise of temperature at that stage sends the flower-buds off in showers. This is what too often happens, in fact, to the Camellias of amateurs. No sooner do the buds begin to show than a natural impatience seizes the possessors of well-budded Camellias to have the flowers opened. More warmth, a closer atmosphere is brought to bear upon them, and down fall the buds in showers on stage or floor—the chief cause of this slip between the buds and the open flowers being a rise of temperature. A close or arid atmosphere often leads to the same results. Camellias can hardly have too free a circulation of air, or too low a temperature. Another frequent cause of buds dropping arises from either too little or too much water at the roots. Either a paucity or excess of water at the roots should lead to identical results. Most amateurs overwater their Camellias during their flowering stages. Seeing so many buds expanding they naturally rush to the conclusion that a good deal of water must be used to fill them to bursting point. But the opening of Camellia buds is less a manufacture than a mere development, and the strain on the plant and drain on the roots is far less during this stage than many suppose. Of course the opposite extreme of over-dry roots must be provided against, else this would also cause the plants to cast off their buds.

But our object now is less to point out how buds are to be developed into fully expanded flowers

than to show how they were to be formed in plenty, and the plants preserved in robust health year after year. One of the simplest and surest modes of reaching this desirable end is to adopt a system of semi-tropical treatment for two months or so after flowering. The moment or even before the late blooms fade the plants should be pruned if necessary. Few plants bear the knife better than Camellias, though it is folly to cut them unless they are too tall or too large for their quarters or have grown out of form. As a rule healthy Camellias produce sufficient or even a redundancy of shoots without cutting back; but should they need pruning, after flowering is the best time to perform the operation.

During the breaking of the tender leaves and the growth of the young shoots in their first stages the plants should be shaded from direct sunshine, unless, indeed, they are a long way from the glass, when the diffusion and dispersion of the rays of light tone down or break their scorching force; few young leaves and shoots are more tender and easily burned than Camellia, and scorching not only disfigures the plants but also hinders the formation of fine growths and the development of flower-buds.

The atmosphere during the early season of growth may almost touch saturation. It must not fail to be genial, and this geniality of the air must be kept up by the surface-sprinkling of paths, floors, stages, walls, and the plant themselves at least twice a day.

With the pots or border well drained it is hardly possible to overwater the roots of Camellias during their period of wood-making. The temperature may range from 50° to 65° during most of the period. As the flower-buds form, and become more conspicuous, the tropical treatment may become less and less tropical, until the Camellias are subjected to the common treatment of greenhouse or conservatory plants in summer. Even at this early stage it is wise to attend to the thinning of the buds. Many varieties of Camellias—notably that most useful of all varieties, the double white—will often set and swell five or ten times more buds than it ought to be allowed to carry. Nothing is gained, but a good deal is lost, by allowing so many embryo flower-buds to be formed or partially developed. It is in fact far wiser to take off the majority of the excess at the earliest possible point, so as to concentrate the strength of the plant into those that remain.

As it is, however, often a point of great moment to have a succession of Camellia flowers for as long a period as possible on the same plants, buds of all sizes should be selected to remain. Fortunately, it is found in practice that the plants, unless over-weighted with blooms, do not cast off the smaller or later buds in their efforts to open their earlier and larger ones. With the setting, thinning and partial swelling of the flower-buds the semi-tropical treatment of Camellias must close; continued longer the result would be their blooming out of season, or more probably their not blooming at all.

The best place for Camellias from the time of setting their flower-buds to their blooming season is a vexed question, which can hardly be said to have been settled as yet. They may either be left in a cool greenhouse, or placed in a shaded, sheltered position in the open air. Some of the finest Camellias ever seen have been placed in the open air from June to October. These in some cases have been stood behind south, and in others behind west walls. Those facing the east in their summer quarters were, on the whole, the finest, many of them being truly magnificent plants, not a few of them having been imported direct from Florence at a time when Camellias were far less grown in England than now.

In all cases where Camellias are placed in the open air in summer care will be taken to place the pots on worm-proof bases, and to shield the tops from direct sunshine from 10 to 4 o'clock. If these two points are attended to, and also shelter from high winds, it matters little where they stand. In all cases it will to place Camellias under glass shelter early in October, less for fear of cold than of saturating rains causing a sodden state of the soil in the pots.

While adverting, however, to the safety and usefulness of placing Camellias in the open air in summer, it must not be inferred that this is essential to the successful culture; it is, in fact, far otherwise, as the majority of the finest Camellias in the country are planted out in conservatories with immovable roofs. Many such houses are, however, treated to special semi-tropical treatment as has been described, and are kept as cool and open as possible after the flower-buds are fairly set, so that the cultural and climatic conditions approximate as closely as possible to those here indicated.

Soil and seasons of potting may be described as vexed questions in Camellia culture. As to the first, some affect pure loam, others peat only, yet more a half-and-half of both, with a liberal proportion of gritty sand, or a little smashed charcoal or bruised bones as porous or feeding agents, or both. Most growers prefer the mixture, and as good Camellias are grown in each of its constituents it follows without saying that they may also be well grown in various proportions of both.

Under rather than over potting suits the plants best, and the best time is doubtless just before they are about to start into fresh growth, though many good cultivators elect to shift their plants in the late summer or autumn, that is, soon after the growth is finishing, and the flower buds fairly and fully set for the next season. From all which it is obvious that the Camellia is not only among the most useful and showy, but likewise among the most accommodating of plants.

Under good cultivation it is also one of the cleanest, though when scab gets on it, it is difficult to get rid of it. Mealy-bugs also occasionally make a hurried visit to Camellias when making their growth, as well as aphides. But the leaves once formed and advanced to semi-maturity are too hard and leathery for such insects, while they will bear scale being rubbed off them with impunity. But really well grown Camellias, as a rule, are wholly free from insect pests, and their clean dark glossy leaves are only of secondary beauty to their brilliant exquisitely formed and many sized flowers. *D. T.*

## CATTLEYA LAWRENCEANA.

So much interest has been expressed on this splendid new Orchid from Roraima, in British Guiana (see fig. on p. 375 of our number for March 21 of this year), introduced into England by the successful Orchid collector Mr. Siedel, on behalf of Mr. F. Sander, that no excuse is needed for adding some further particulars about this plant, especially of its native home, to those already published in the *Gardeners' Chronicle*; and, in the first place, let me present a sketch of the exact place where this plant occurs (fig. 34), which is not, as seems to have been supposed in England, actually in Roraima, but is along the bed of the Kookenaam River, where it flows along the base of the south side of the twin mountains of Roraima and Kookenaam, at a level of only about 3750 feet above that of the sea, and not of from 6000 to 8000 feet as would be the case did the plant come from Roraima itself. The mountain in the background of the sketch is Kookenaam—its southern end, seen from a point somewhat to the east of south. The stream in the sketch is the Kookenaam River, which here runs along the bottom of a deep channel which it has cut for itself through the surrounding bare savannah lands. In the shelter afforded by the high banks of this channel, among the countless blocks of stone, of all shapes and sizes, which here occupy the bed of the stream, grow many shrubs and stunted trees, and some few trees of greater height, most of which latter, at the time when I made the sketch—Christmas Day, 1884—had been blasted by the hot breath of some recent savannah fire, which, however, had left unscathed the lower plants down in the cool shelter of the deep channel. It is on the trunks and branches, often big and gnarled, of the shrubs and trees down in this gully that Cattleya Lawrenceana grows in abundant splendour. Even as I was making the sketch I saw on a tree close to me two most magnificent clumps of this Orchid, on a tree overhanging the bathing pool of the Arekoona village of Teroota, the better of the two having five spikes of flowers, of which one bore nine, each of the others eight blossoms, in all forty-one, of some of the largest and finest Cattleya flowers ever seen on a single small plant, the roots of which easily lay on my extended hand. Our Christmas decorations that day consisted of an enormous pile of these flowers. And these were gathered after the Indians employed by Mr. Siedel had, day after day for many weeks, collected from that immediate neighbourhood, two, three, or even six enormous basketfuls of this plant—each basket a strong man's load. These baskets, by the way, as many of the plants happened to be in full bloom, were strangely beautiful. The Indians asserted that the Cattleya, which they expressively called by a word which means "blossom of the wood" (trunk), grows also along several of the other similar streamlets in the neighbourhood, though, they added, not always so large and fine in form.

Mr. Siedel had visited the place in the previous April, and had then detected the plant and collected considerable quantities of it; but that lot, being unfortunate in its journey to England, had perished. The same very diligent and patient collector was at the same spot again while we were there in December of last year, and was gathering a new lot, which, I am glad to hear, afterward appeared in fine condition in Mr. Stevens' sale room in London.

Lastly, while I connot help paying a tribute of admiration to the patient toil and endurance of dull hardship of such commercial Orchid collecting as this, and cannot help congratulating both the collector and his employer and the Orchid-loving English public on the successful result of this collecting, neither can I help expressing regret at the probable extinction in their native homes of such plants as this by their wholesale collection for market. A splendid Orchid at home is a thing of beauty, to be admired by many; the same Orchid in its native home is a thing of yet far greater beauty, seen and therefore admired by but few; but then these few are generally wearied travellers, who deserve and want the refreshment of the beautiful picture.

The precediug paragraph was meant to be my last, but, like Dr. Baxter, I have "more last words," and these are simply, that I purpose, with the permission of the Editor, at some future time to offer the readers of the *Gardeners' Chronicle* a short series of articles on Guiana Orchids in their native homes, in the hope that this may increase the interest felt in these same plants when transferred to English hothouses. [We accept the proposal on bahalf of our readers with cordial thanks. ED.] *Everard F. im Thurn, Pomeroon River, June* 18.

## SCHOOLS OF HORTICULTURE.*

HORTICULTURE may be considered to bear the same relations to botany as manufacturing chemistry does to general chemistry. In fact, horticulture is merely the application of botany to practice, nearly all the daily occupations of the gardener being founded on a basis of scientific rules. It is therefore plain that the study of this science should occupy a prominent place in the programmes of schools of horticulture, but it is important to point out what the nature of the teaching should be, in order to be truly useful.

### THEORETICAL INSTRUCTION.

This should be carefully adapted to the special requirements and capacity of the pupils. The requirements for the preliminary examinations in the Belgian schools are far from being difficult. They only require that the pupil should possess that slight amount of knowledge which may be acquired in a primary school. The regulations also allow the admission of pupils from the age of fifteen years. It usually happens that these lads have not had a sufficient education to understand anything more than an elementary course. The Professor should therefore endeavour to make his instructions as simple as possible, and employ all the means in his power to make himself understood. He will succeed the better in proportion as he makes his course more practical. To this end he should make use of fresh plants or dried specimens, museum specimens, diagrams, &c.; in short, of everything which appeals to the eye. Under these circumstances a junior pupil will understand and remember the explanations given. This theoretical course should be extended over two or three academic years, and should comprise general botany and special botany. In general botany the elements of anatomy should be studied, the forms of organs, and above all physiology. It is important that the gardener should have an idea at least of the structure of the different parts of plants and of their uses. He must know the details of the phenomena of the life of plants, in order to place plants under the most favourable conditions for their growth. To mention only a few examples chosen at hazard, how can he regulate the watering of plants if he is not acquainted with the mode of action of roots and leaves, with the phenomena of absorption and evaporation? How, if he ignores the peculiarities relating to sexual reproduction, will he proceed in any intelligent manner to effect artificial pollenisation and hybrid-

* A paper read at the Antwerp Horticultural Congress, by Professor Kickx.

isation? A very important chapter of the programme of general botany which must be taught to the horticultural pupil is the study of the influence of external agents—for example, light, heat, electricity, the soil, &c.—upon plants. The two first of these especially are concerned with a number of physiological phenomena which the gardener meets with in his daily work. He must understand the influence of temperature in order to manage the germination of seeds successfully, the ascent of the water of evaporation, this as it may, however, in this report I may be excused from dilating on this subject, because it will receive special attention at the hands of the Congress.

Special botany should hold a still more important place in the programme. It is indispensable, in fact, that all who apply themselves to gardening should be acquainted with botanical terms and descriptions, so as to be able to understand the descriptions of the plants given in the Floras, and to be able on occasion to make a dissection of the flower. The gardener possesses these facts will be less exposed than others to the risk of failure when he is called on to cultivate newly introduced plants. He will know, on the contrary, how to place them under conditions of existence analogous to those of their native country. The theoretical teaching to be easily understood by the pupils should, as is before said, be based as far as possible on practical instruction. What idea can a young man, having had little preparatory education, form of the cell, the seat of the principal functions of



Fig. 34.—The home of cattleya lawrenceana. (see p. 168.)

the ripening of fruit, seeds, &c. He should know how to regulate in an intelligent manner the operation of heat and light in his flower and fruit houses. If gardeners had clearer notions of the part which rays of various-coloured light play in the functions of life, we should not have seen advanced a few years ago the absurd idea of covering greenhouses with blue or violet glass in order to hasten the maturity of Grapes.

The study of vegetable pathology, which in most schools forms part of a course of botany, is also of great interest to horticultural pupils. The subject might even form the object of a separate course. Be should have as clear an idea as possible of classification. If they understood better what is meant by a natural group, family, genus, species, &c., they would not be so often seen trying to obtain a graft or a hybrid under impossible conditions, nor announce in their catalogues, as among new species, simple forms soon condemned to disappear by returning to the primitive type. It is equally a necessity that the pupils of a school of gardening should receive some information concerning the geographical distribution of plants, and the dispersal of different natural groups on the surface of the globe. The gardener who plants if the Professor has not shown it to him under the microsope? This simple examination will ensure a better result than the longest explanations. It is certainly of little use for the future gardener to be instructed in the art of making microscopical preparations for himself; but it is desirable to allow him to see from time to time those made by the Professor. It is especially in special botany that practical work is of use. To this end the Professor should lay before his pupils well selected specimens from the principal natural groups, and proceed to examine them with his pupils. In Belgium the excellent manual by

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M. Crépin is of great use in this respect, the pupils employing their botanical excursions successfully. These herborisations, in spite of all their advantages, have nevertheless a drawback; this is, they take up time which might be devoted to more useful garden work. When, as is the case at Ghent, a collection of plants exists, and in which the plants are labelled and classified after a natural method, the necessity for a number of excursions is in a great measure done away with. In a botanic garden instruction is made to bear on plants not represented in the native flora of a country, and which the gardener is perhaps specially interested in knowing. It is very important to teach the pupils to dry plants and to preserve them in herbaria. Each should be supplied with a label mentioning, not only the name of the species, but even the spot where it was gathered, the time of its blooming, and the name of the collector.

## ALPINE PLANTS ON THE GEMMI.

THESE notes were made on plants collected principally on the Gemmi Pass between June 12 and July 18, that is to say, I have crossed the Pass going up from Leukerbad, by one of the most wonderful zigzag paths in Switzerland, in June, thus passing into the Bernese Oberland; and in July we recrossed the Pass, this time, of course, descending to Leukerbad. In June the path, from the little hotel Wildstrubel at the top of the Pass to the inn of Schwarenbach, was only to be discovered by stakes driven in along the edge of the path itself, the ground on either side being covered with snow. The most noticeable plant was Saxifraga oppositifolia, forming large patches of pink, some of them nearly a foot in circumference, hanging down over the rocks on all sides; it was also in great abundance on the Torrenthorn, a mountain we ascended from Leukerbad in June, and we found it in flower there when we had left all other flowers far below; Crocus vernus and Soldanella alpina in great abundance on the Torrenthorn, the former struggling up through the snow as fast as the snow melted; Anemone alpina and A. sulphurea, the latter in one place only; on the Alp or lower pastures of the same mountain Anemone vernalis was also found. In the Pine forests above Leukerbad Viola biflora was very conspicuous with its small bright yellow flowers, also Valeriana montana. To return to the Gemmi—still in June—the rocks and ground (where the snow had already melted) on the left-hand side of the path, shortly before arriving at Schwarenbach, were a mass of colour—pink, yellow, purple, and white. Primula farinosa, Ranunculus (?) (yellow), Viola alpina (purple), Pansy, and Ranunculus glacialis, and Primula Auricula (yellow), and Gentiana verna, here and there, not in the same quantity as the first-named. I hav never seen such a blaze of colour, except, perhaps, ine Miss Jekyll's garden at Munstead. As we began to descend—that is, towards the valley of Kandersteg—we found the meadows full of flowers, Anemone narcissiflora being abundant. I was sorry not to be able to take either notes or specimens as we started late in the afternoon, and my guide said if that I stopped by the way we should not get to Kandersteg that night.

In July, when we recrossed the Gemmi, the flora was very much changed, all the species of Anemone being over, also Primula farinosa, and but few of either Viola alpina or Ranunculus glacialis remaining in flower; the two most showy flowers now were Dryas octopetala, which I think is "the beauty" above all the other alpines; and Rhododendron hirsutum, both in great abundance. R. ferrugineum we also found, but it is not common here; then Edelweiss, now (July 18) in flower, but still not fully out in many plants, though my guide managed to gather six fine bunches of the flowers. I give the names of a few other alpines I collected mostly on or about the Gemmi:—

Globularia cordifolia
Phaca astragalina
Saxifraga aizoides
" rotundifolia
Achillea moschata
Azalea procumbens (in June and July)
Aster alpinus (in July in flower)
Erigeron alpinus
Veronica saxatilis
" fruticosa
" latifolia
Gentiana bavarica
Gentiana acaulis
" lutea (in the valley of Kandersteg a very showy plant, 2—3 feet high)
Linaria alpina (common, but very pretty)
Myosotis alpestris (a lovely blue)
Rosa alpina
Cerastium alpinum
Alchemilla alpina
Bellidiastrum Michelii

And, lastly, among Orchids, all the following species I found growing together in the Oëschinenthal, a stony valley with a stream running down the middle, the overflow of the beautiful Oëschinen See, a small lake at the top of the valley, overlooked by the glaciers of the Blumlisalp, Dolderhorn, &c.:—Orchis maculata, O. conopsea, Ophrys aranifera, O. muscifera, Epipactis rubiginosa, Listera ovata; and the same day, on the Gemmi, Chamæorchis alpina and Nigritella angustifolia, the latter very sweet.

I must mention the Jardin d'Acclimatation at Geneva, of which my friend, M. Henry Correvon, is the able Director, and where all the rarer alpine plants are to be seen in perfection. Every one who goes to Geneva should pay the garden a visit and see for himself the good work he is doing in saving the rarer alpines from extermination, all the specimens being raised from seeds gathered on the mountains, and not by pulling up the plant. The letter of Mr. Justice Wills in your columns will, I hope, be of much service. *Scott Wilson, Geneva.*

## MARKET GARDENING.

(*Continued from p. 75*)

VEITCH'S AUTUMN GIANT CAULIFLOWER has been very extensively grown under field culture during the last few years, and here is seen an excellent illustration of the readiness with which growers keep pace with the requirements of the metropolitan markets. When, about six years ago, I first advised a neighbour to commence its culture it was unknown in this district—unknown, I mean, to market gardeners. The great success attending my friend's commencement, however, brought numerous competitors; so much so, that during the last two seasons large masses of these very superior "Whiteheads" became all but unmarketable at a fair remuneration. As regards its culture, very slight difference is made concerning the preparation of the ground and planting to that long in vogue with Savoys, &c. Certainly, an additional quantity of manure is generally applied immediately before the crop is planted, and more distance is given between plants as a matter of course. Again, a fact I have already endeavoured to emphasise, comes very prominently to the fore; viz., simply ploughing and rolling the ground produces by its inherent firmness, or clod consistency, as fine if not finer produce than highly manured and spade-wrought garden soils give. The field culture of this crop also affirms how very hardy this handsome variety is, as the seeds are sown broadcast across fields, at the same time and in precisely the same way as are those of Cabbages, hardy greens, &c. The seedling plants which result from them keep pace with all. One singular fact is always associated with the young plants, though the cause is difficult to explain—*i.e.*, quite 15 per cent. of the young seedlings prove invariably blind and quite useless.

One of the most prominent crops in this way is that known as the PURPLE-SPROUTING BROCCOLI. Probably there does not exist in the whole of the long list of species and their innumerable varieties of the Brassica tribe a more hardy one than this, in all that concerns its growth from the germination of the seed to the planting and full growth, though, owing to its luxuriance, it occasionally succumbs to severe mid-winter frosts. The young seedling plants are transplanted at any time, age, or size, when suitable ground space can be prepared for them. Sometimes they are so large, or so long, as to be planted by simply laying them along a freshly-opened trench and plough-planted. Often long attenuated seedling-bed drawn plants, 18 inches or 2 feet in length, are thus treated, and they form, even in this recumbent position, huge heads in due season. This system of planting, though the soil is heaped over the roots more freely and more loosely than is the case in regard to dibble-planting, never succeeds so well as the latter, albeit the stalks are often buried more deeply—sometimes a desirable feature, but in extensive practice the reverse. It is well to observe, these purple Broccoli are not planted simply for the flower-heads. The huge growths made—so fine often that two or three of them occasionally fill a sieve—are cut and marketed long before any signs of flowers appear. They are always appreciated by the public, and constitute one of the most tender and delicate-flavoured greens grown. Gardeners, having extensive supplies to provide during the months of January and February, will find it very advantageous to grow a quantity of this variety, to be used in lieu of Cabbage greens, &c., which are often too much depended on, though they have so little to commend them in point of tenderness or flavour.

DWARF FRENCH BEANS need no explanatory remarks: they are grown somewhat like garden crops, but the variety of Bean known more commonly as "Runners"—field-grown varieties of which comprise the Scarlet Runner and, though less frequently, the white Dutch—are cultivated around the metropolis in a way that would surprise many non-travelled country gardeners. Sown in hundreds of acres, across the fields, they are forced into early and very heavy cropping by a most persistent system of frequent stoppings: no sticks being ever used, except on very rare occasions, and then only to grow seeds of fine colour and quality, either for market or for a future season's planting. It is remarkable, also, how very early Runner Beans are field sown, sometimes even during the first of second week in the month of April, and always within this month where ground is ready to receive the seed. It is a fact, probably not too well known, that this plant when the first "spear" or shoot is cut down by an early frost will produce a second, and succeed in cropping well afterwards. As regards the stopping already alluded to: this is commenced as soon as the shoot forms, following the seed lobes or leaves. And this is followed up by close stopping whenever a young shoot shows above the leaves. By this means flowers are forced to form at once, and the result is early cropping. I gathered my first dish on a row so treated on July 20 last. Where the plant is permitted to run up sticks fruiting is of necessity later than this, and, as a rule, such abundant crops are not produced. As these plants have, moreover, the merit of continuing in vigour and uninterrupted fruitfulness until the frosts of early autumn cut them down, there is much to commend this simple system of culture, to say nothing of the saving made in regard to the outlay for sticks in places where they have to be purchased. *William Earley.*

## BOTANY AND GARDENING.

NOT so long ago it was considered high praise by some to say of any one that he loved flowers for their beauty, and did not care to pull them to pieces and examine their structure. Probably the same idea is still in existence. As well might it be thought that the musician who had studied the science of music must therefore enjoy the less its beauty as an art; yet no one believes that musicians would have produced compositions of equal beauty in harmony and melody had they ignored the scientific side of musical culture, or that their works would be the better interpreted by an absence of all such knowledge on the part of the performers. The same assuredly holds good in regard to the culture of flowers. It is possible to thoroughly love both music and flowers—to express artistic feeling in the one, and to cultivate successfully the other—without the slightest scientific knowledge of either; but the gain in either case is great if "the reason why" be carefully looked into. A world of marvels is opened up to the botanist, increasing the interest of practical gardening; and although the number of botanic gardens through the country must necessarily be small, there need be no such limit to the number of botanical gardeners. It is just such an army of intelligent observers which is at present wanted. There is work enough for all, since Mr. Darwin has, as it were, made botany a new science, and taught us that every smallest marking in a flower, every minutest peculiarity in a plant, has its meaning and history. No garden is too small, and no careful and accurate observer too ignorant, to be of some use in this great work. But of all things accuracy is the most important. An inaccurate observation is not only useless, but positively mischievous, and can only serve to mislead others. A certain amount of knowledge as to what is, and what is not, worth recording amongst these observations, is of course of great use; and probably a mass of observations which would be of value to scientists, is lost by the want of such knowledge. This can only be remedied by some degree of careful botanical training becoming part of the education of every gardener worthy of the name, whether professional or amateur. The sooner the old popular idea that botany means "how to know the names of plants" is annihilated the better. Useful, indeed practically essential, as such knowledge is to the gardener, it is but a small item in the sort of knowledge required, if gardening is to be, as it certainly ought to be, a rich field of observation, to which

science workers may look for a supply of some of the facts they require. Such facts often throw a flood of light on some of the deepest botanical questions; and amongst these facts worth recording, are the abnormal growths which perpetually occur, many of which may be full of interest as links in the evolution of the plant, and in its relation to far distant branches of the great genealogical tree of plant life. Some knowledge of structure and function, of vegetable biology in fact, is the requisite guide as to what to observe; for nothing is more curious than the way in which even a trained eye fails to observe what comes directly "under its notice," but what in reality is often not noticed at all. Herbert Spencer speaks of a fact which "has its significance observed by its extreme familiarity," and this is a danger which besets every gardener, and which cannot be too carefully guarded against. The very faculty of "wondering why" seems to be but too exceptional. Though it is by workers in the laboratory that some of the greatest botanical discoveries have been made, yet, from the very nature of their work—work often requiring a course of observation by night as well as by day—they cannot have the same kind of opportunities for observing the daily life of many a plant which gardeners necessarily have. And just as the work is different, so it may be of use. The gardener may not have time, or taste, or knowledge necessary for the patient microscopic observations and carefully thought-out conclusions of the scientist; but if the gardener be a botanist he will feel too deep a debt of gratitude for the results of such scientific work not to be ready to aid by accurate observation (however small in degree be the aid he can give) in the progress of scientific research.

By such means gardening becomes, not merely a useful and interesting occupation and a pleasant amusement, but an intellectual pursuit, with possibilities on every side for new observations which may sometimes lead to important discoveries; and at the same time the practical knowledge of plants which intelligent gardening involves adds in no small degree to the interest of botanical study, and to that of many books which open up fresh lines of thought with regard to plant-life—such books, for instance, as some of Darwin's, as Wallace's *Island Life*, Kerner's *Flowers and their Unbidden Guests*, &c., must be full of suggestiveness to the gardener, and make him realise that gardening and botany are in no degree antagonistic, but that to its work in connection with botanical science gardening must look for its highest development in both pleasure and interest. *C. M. Owen.*

## ROOT STRUCTURE.

The variation in the appearance of roots according as they grow below the surface, in the air, or in water, is well known. Latterly M. Constantin has pushed the inquiry further, and has examined the internal structural modifications which accompany the more obvious external changes. M. Constantin examined the structure of the root in terrestrial and in epiphytal Orchids respectively, and also made comparative experiments by causing aërial roots to grow underground, and others exposed to light or immersed in water, and so forth. M. Constantin's general conclusions are as follows:—

The growth of roots in the air—1, diminishes the bark, and, on the contrary, increases the pith; 2, causes an increase in the fibrous system of the bark as well as of the centre; 3, causes an increase in the number of ligneous vessels; 4, renders the endodermic cells harder and more impermeable.

When, on the contrary, the root developes in water, the following results are apparent:—1, increase in the size of the spaces between the cells; 2, diminution of the pith; 3, reduction of the fibrous and vascular systems.

These observations show plainly that the roots adapt themselves in the same manner as do the stems when under different conditions.

Like the aërial stem, the aërial roots are characterised by the great development of the central cylinder, of the fibrous and vascular systems.

Like the rhizomes, the subterranean stems are distinguished by the great thickness of their rind, the reduction of the pith, and the small importance of their fibres and vessels.

Like aquatic stems, the roots produced under the water are similar in structure to subterranean organs, but differ in having intercellular spaces, and in the lesser development of the vascular elements.

The analogy remains even when blanched stems are compared with roots, which have grown in air and obscurity, the rind and ligneous system being of less importance than in subterranean organs. The root is therefore as liable to modification as the stem, and if its organisation seems very uniform it is because it is most often developed under the ground. It is to the influence of the medium, terrestrial or aquatic, that we must attribute the feeble development of the pith of roots. The absence of this tissue consequently does not serve to characterise the root anatomically. The most striking result of these experiments upon the root as well as on the stem, is that the woody matter is formed with relative difficulty under the ground, in water, and in darkness. The consequences of this are very important, as the functions of the fundamental tissue and of the endoderm, are thus found to be entirely altered.

## GROUPING IN THE GREENHOUSE AT KEW.

It is a notorious fact that no system, however well designed, or novel at the outset, is destined to give satisfaction for any lengthened period of time. In evidence of this may be mentioned the summer flower bedding, and lately carpet bedding, which brought about such a revolution in modern gardening. Both these systems, except in public parks and gardens, have fallen greatly into disrepute, a circumstance to be accounted for in various ways. Nor is it a matter of surprise, seeing how the times change.

For some years back, at least, it has been the custom in the greenhouse at Kew to arrange plants, of any sort whatever, almost entirely in a mixed manner. One might occasionally see a group of Lachenalias or other spring flowering bulbs, but this was exceptional. Lately, however, what must be considered in the light of an innovation, is the arrangement of plants in groups of a kind. This system has by no means been rigidly adhered to throughout the house but is most fully effected in the side wings. The larger groups are made up of tuberous-rooted Begonias Pelargoniums, and Fuchsias, and one group in particular was most effective lately; this consisted of Ivy-leaved Pelargoniums, both single and double, in full flowering condition, occupying a bench, backed up by a huge plant of Bougainvillea glabra, monopolising the whole end of the wing, and flowering most profusely as it does annually for many weeks at this season. An attempt has been made to break the monotony or uniform appearance of some of these groups, for instance, by inserting plants of Cordyline, Cyperus, Grevillea, as well as the taller, shrubby fine-foliaged Begonias amongst the tuberous-rooted sorts. This undoubtedly carries with it its own attractions, but becomes objectionable on the ground that it frustrates to some extent the original design, the motive of which was to gain effect by the massing of varieties of one class of plants. Moreover the innovation has been eliciting the attention of the more frequent visitors.

Conspicuous amongst other things are some groups of the deservedly popular Scutellaria mocciniana, whose somewhat rigid massive spikes of scarlet flowers contrast well with plants of a more graceful character. There are several groups of Chrysanthemum carinatum, a most effective hardy annual, with more finely divided foliage and far showier flower-heads than C. coronarium, growing alongside of it. The disc is maroon, and the rays yellow, pink, or white, according to the variety, with a golden-yellow base frequently surrounded by a crimson zone. Both single and double forms are represented.

Distributed about the house are smaller groups of Datura suaveolens, Phlox Drummondi, Torrenia Fournieri grandiflora, and Carnation Souvenir de la Malmaison—the latter noticeable for its huge double pale-coloured flowers.

This may suffice to show the nature of the arrangement, and if the groups are occasionally removed and replaced by others in their season the design cannot fail to be instructive as well as attractive. The hinge of the novelty will rest on the variety and showiness of the groups introduced from time to time amongst the more permanent occupants of the house. Prominent amongst these in flower may be mentioned Banksia compar, Phormium tenax, Swainsonia Osborni, and S. galegifolia. The two latter are allied, but distinguishable species, of slender habit, and amenable for pot culture, or for planting out and training as climbers, when they will flower freely for many weeks together. Profusely flowered plants of Crassula coccinea, Trachelium cœruleum with its white variety, and Francoa appendiculata, exhibit decided tones of colour distinct from those around them. The climbers, twiners, and other subjects trained to the pillars and rafters, are a special feature of the house, and some one or other of them is in flower at almost any season. The graceful habit and showy character of Begonia fuchsioides would never be dreamt of by those who cultivate it in pots only. A great number of climbers are flowering more or less profusely at the present time, but it must suffice to mention a few, such as Passiflora cœrulea-racemosa, a hybrid with red sepals and pale violet petals, together with Mandevilla suaveolens, Trachelospermum jasminoides, and Jasminum confusum—the three latter of which have white flowers, and fill the house with their agreeable fragrance. *F.*

# Florists' Flowers.

## CARNATION AND PICOTEE.

For the last nine years I have sent a *resumé* of the new Carnations and Picotees exhibited at the exhibition of the National Carnation and Picotee Society. It is very interesting and instructive to look back through all these years, and contemplate the progress that has been made. My own experience is that seedling raising fluctuates very much. Some years a great many new and distinct varieties are produced, in other years they are few and far between; this is probably to be accounted for, by the greater difficulty in obtaining seeds when the season happens to be unfavourable to the proper fertilisation of the flowers. Hot and dry seasons are the best, and perhaps such a one as the present, which was very unfavourable to strong development of the plants at first, has been very favourable indeed, now that the plants are fully in flower. Some varieties are very unproductive of pollen, and unless very favourably placed will not produce seeds. The yellow ground kinds are most difficult to fertilise, and as far as my experience goes we are able to get one seed only for every two blooms. Perhaps better results will be obtained this year: we flowered the plants earlier, and the seed pods now formed promise well. I may allude first to a few of the old varieties, as it is of much importance to growers that they know how the best of those sent out in previous years yet maintain their early promise of goodness.

Beginning with the Scarlet Bizarre class, it is marvellous to observe how well Admiral Curzon holds the position it has so well kept for more than a quarter of a century. Arthur Midhurst and Robert Lord, raised by Mr. Dodwell, are worthy to be placed with it. Fred, which promised well at first, is not to be depended upon.

In Crimson Bizarres, most of the new ones already show signs of weakness, or they do not maintain their character. Samuel Barlow, for instance, certificated by the National Society in 1883, and sent out subsequently, is not pure enough in the white, and is not good enough to put in a stand of twenty-four at an exhibition, although it was placed in our own at the last. Master Fred already shows signs of weakness in constitution, and William Skirving has much degenerated in quality. H. K. Mayor (Dodwell) is a good substantial variety shown well by Mr. Turner. Thomas Moore has improved in quality since it was first sent out.

The Pink and Purple Bizarres do not yet form an important section. The best we had this year was Miss Gorton (Dodwell); it is far superior in form to Sarah Payne, and was equal to it in colour this year. Mrs. Barlow was superb last year, this year it has lacked brightness, but it is one of the best.

Passing to the Purple Flakes, Simonite's James Douglas certainly still heads the list, followed by Squire Whitburn (Dodwell), while for its distinct shade of purple, Florence Nightingale must form the last of the trios. In scarlet flakes, Henry Cannell (Dodwell) and Matador (Abercrombie) were about equal this year. The first named is very bright in colour, but the petals are too small, and in that respect Matador gains a point. John Bull (Dodwell) was well exhibited by Mr. Turner, but I cannot place it before that old and well-tried variety

Sportsman (Hedderley), as one of the three best. Rob Roy has come well to the front as by far the brightest and best rose flake. Tim Bobbin has gone back from its first promise of goodness, and is replaced by Jessica. John Keet must hold the next best place until some of the new ones not yet in commerce take its place.

The three best heavy red PICOTEES are Brunette, John Smith, and Princess of Wales. The best light red-edged varieties are Mrs. Gorton, Thomas William, and Violet Douglas. Heavy purple-edged varieties are best represented by Muriel, Mrs. Chancellor, and Zerlina, while in light shades Her Majesty, Jessie, and Baroness B. Coutts, hold the foremost place. Heavy rose edges have been much improved during the last few years. Constance Heron, Mrs. Payne, and Royal Visit have come well to the front, and are the best in commerce. In light rose edges, Liddington's Favourite, brought into prominence by Mr. T. Austin, of Brill, last year, and which gained "premium" in London this year, is easily Thalia is a promising flower, which received the 2d prize as a rose flake.

I have only to remark in reference to the exhibition, that it was very pleasing to see the classes so well filled. In some of them there were as many as ten entries; and considering the season the quality of the blooms was all that could be desired. I would also offer a hint to some exhibitors who showed remarkably well grown blooms, but failed to obtain the place their culture deserved, owing to the lack of variety. It will not do to place three blooms from one class in a stand of six, nor six from one in a stand of twelve. The classes should all be represented, and this can be done without growing a very large number of varieties; it is for that reason I have named three varieties only in each of the six classes of Carnations and Picotees. They can be obtained at a cheap rate, and are the varieties which are best to be depended upon for exhibition.

It is a pity that the yellow ground Picotees are not more grown. Some new seedlings were exhibited, first in the class. Estelle is second, and Ethel third.

I have selected the above, after long and patient comparison, as the best Carnations and Picotees now in commerce.

Amongst NEW VARIETIES there is not much room for difference of opinion, as so few were exhibited. Two new raisers of seedlings must be added to the list, viz., the Rev. F. D. Horner and myself. I have some rose flake Carnations from Mr. Horner, one of which, just flowered, promises well. He also raised the very beautiful red-edged Picotee, Dr. Horner, exhibited by me, and which was awarded 1st prize in its class and a First-class Certificate. Out of some 750 seedlings I have been able to select three or four that will probably hold a high position. Three of them received 1st prizes and First-class Certificates from the National Society, viz., Rosamond, crimson bizarre, a well-formed flower, with broad and regular flakes of rich red and purple; Grace, pink and purple bizarre, also a well-formed flower of a paler tint; Margaret, rose flake—it resembles Sybil in the broad regular marking, but the rose colour is paler, one at least of them is a great advance on the old varieties; it has a distinct red edge, the yellow ground pure and clear, without spot or bar. One bloom only was exhibited, consequently no award was made, except that it received a 1st prize in its class. *W. Douglas.*

## PLAN OF SUBURBAN GARDEN.

THIS is a design (fig. 35) which would be appropriate for small gardens in the suburbs of London and large towns. Straight walks and borders have been avoided, and specimen trees have been placed on the grass outside clumps, so as to produce an indefinite appearance. As the ground is very sloping, the banks are necessarily heavy, so as to make a good level for tennis. The circular beds between the clumps are placed so that they shall be well seen from the walks and house. This plan has been designed and laid out for Messrs. H. & E. Kelly, Fitzjohn's Avenue, Hampstead, by Mr. E. T. Chamberlain, landscape gardener, of 102, Haverstock Hill, London, N.W., and Harrow. The figures to the plan will supply what further details may be necessary.

## HARDY SHRUBS.

SPIRÆA DOUGLASII.—Amongst deciduous shrubs few are at present more attractive than the various species of Spirea, and amongst these as a valuable flowering shrub none can surpass and few equal the above interesting and highly ornamental form. Planted in good bold masses at say from a dozen to 40 or 50 yards back from drives and walks, this Spiræa will create a feeling of both delight and surprise, as well by its ornamental appearance as by its profusion and continuity of bloom. The flowers, which are nearly sessile, and vary in colour from pink to nearly white, are arranged in a dense terminal of from 6 to 9 inches in length. Hailing from North-west America, it is perfectly hardy, and well suited for our climate generally.

LEYCESTERIA FORMOSA

is a very distinct, interesting, and ornamental shrub, that is well suited for planting in similar situations to the preceding but, unlike that plant, it is, we think, better suited for growing as single specimens than for clump planting. The highly interesting and by no means inconspicuous flowers are borne in verticils, and gradually diminish in size towards the tip of the raceme. Deep purple berries supported by deep purplish bracts succeed the flowers, thus rendering the plant, both in flower and fruit, a desirable acquisition to our shrubbery borders. It is readily propagated by cuttings or division of the roots.

DEUTZIA CRENATA

—or as it is usually though incorrectly called scabra—is one of the most handsome or graceful flowering shrubs in cultivation. Planted in conspicuous positions on the lawn—a sheltered situation suits it best,—or within easy access of drives and walks, this lovely plant will at all times attract attention, indeed here the only fault we find with it is that the flowers are so enticing to the passer-by that unless well guarded, they are seldom allowed to remain intact for any length of time. It grows about 6 feet in height

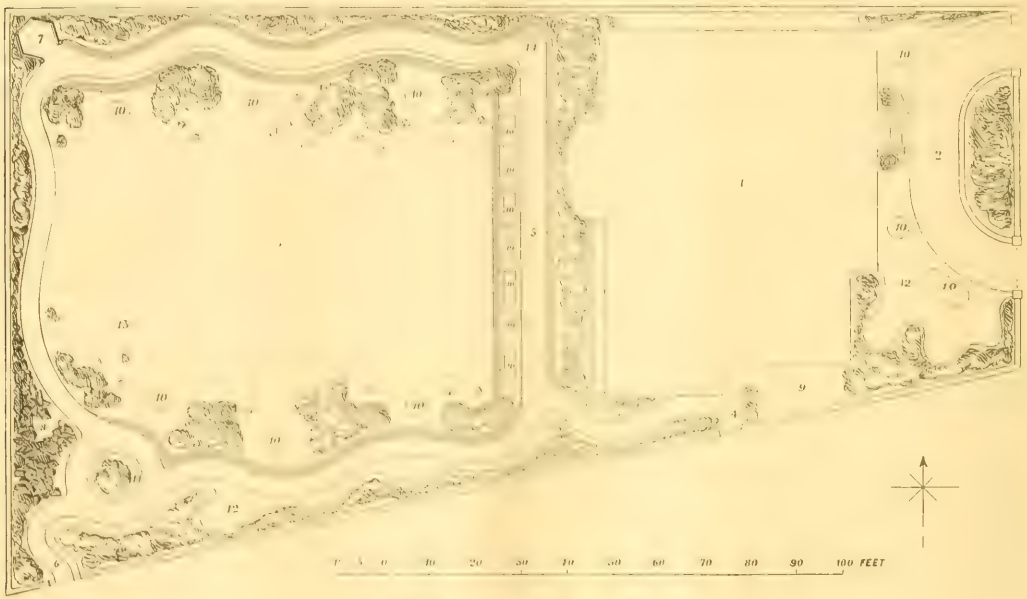



FIG. 35.—PLAN OF SUBURBAN GARDEN.

1, House; 2, Carriage drive; 3, Lawn; 4, Servants' entrance; 5, Terrace; 7, Garden gate; 8, Summer house; 9, Rockery; 10, Vases; 11, Flower beds; 12, Rhododendrons; 13, Grass; 14, 15, Seats.

with racemose or paniculate flowers, the stems being remarkably slender, which still further adds to the beauty of the plant when in flower. The true D. scabra is seldom seen in cultivation.

TAMARISK.

For planting in maritime situations we find few shrubs, when ornament is combined with utility, to equal the various species of Tamarix. The light, feathery branchlets, almost resembling our garden Asparagus, when tipped with their rosy-white spikes of flowers, have a very graceful and ornamental appearance. It is invaluable for seaside planting, succeeding well on bleak exposed shores where comparatively few things will flourish. Well grown specimens frequently exceed 10 feet in height, and nearly as much through; and when, as at present, they are laden with their conspicuous and sweet scented flowers, have a particular fascination of their own. T. gallica, which is now naturalised on some parts of our coast, is perhaps the best species for general use, although T. germanica, a native of Central and Southern Europe, and which bears red flowers, is more floriferous.

DESFONTAINEA SPINOSA,

with its scarlet and yellow trumpet-shaped flowers, is just now very effective. Perhaps, as a wall plant it is seen to best advantage—at least, in such a position it succeds best, as, being a native of Chili, it can only be classed as "rather tender." In most British stations it, however, grows and blooms freely. The prickly Holly-like foliage is of a deep green colour, and very ornamental, and the drooping, tubular flowers, red outside and yellow within, are borne in profusion. Having a good habit of growth, it would be difficult to imagine a more beautiful shrub either in or out of flower.

PERNETTYA MUCRONATA.

This spiny-leaved plant is of remarkably free growth, and a most ornamental subject when planted in rich peaty loam. Having a creeping rootstock, it soon covers a considerable surface of ground, the young suckers coming up in all directions, and is therefore invaluable for using either as game covert in the more ornamental woods, or for mass planting in conspicuous situations. The narrow coriaceous leaves, pink stems, and white pendulous flowers, are attractive features of the plant when well grown in deep sandy peat.

PHILADELPHUS.

Two or three varieties of Philadelphus, notably P. thyrsiflorus—which is certainly the finest of the whole group—P. coronarius, and P. grandiflorus, must rank among the most effective and beautiful of perfectly hardy deciduous flowering shrubs. North America is certainly the home of the Mock Orange, and our specimens being few, small-flowered, and, as regards nomenclature, in the most happy state of confusion, from the number of names being in excess of the number of forms. The common European species (P. coronarius), of which there are several varieties in cultivation, is perhaps the least showy, and cannot in point of beauty compare with P. thyrsiflorus, which is certainly the most distinct and by far the showiest of the whole tribe. The flowers approach in size those of P. grandiflorus, but are of a clearer and purer white.

KERRIA.

The variegated Kerria is really a charming shrub where it succeeds well in the open. Weaker in constitution than its parent, the old Japanese Kerria, this handsome plant is rarely seen in good form unless in dry, warm soils. During August it is invariably studded with golden-yellow flowers, which among the silvery-edged foliage produce an uncommon and pretty effect. *A. D. Webster.*

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AMERICAN FIBRES.—The *American Eagle* says, that among other matters of special interest connected with the American Exhibition, London, 1886, may be mentioned that of American fibres. During the past ten years many valuable discoveries have been made of fibrous plants in America, suitable for the manufacture of paper, rope, twine, &c., and some of the results have been of the greatest value to the future commerce and manufactures of the United States. The importance to all the world of this question of fibres has led to the appointment of F. ALBEE SMITH, Esq., of St. Louis, Missouri, as Special Commissioner for the collection and exhibition of American fibres to the forthcoming American Exhibition, London.

## DAVID DOUGLAS.

IT is well occasionally to recall the services of our great botanical collectors. It is not agreeable to have to write it, but the truth remains that the public is apt to ignore the services of some of their greatest benefactors. How many people know who introduced the common Aucuba or the Pontic Rhododendron? After a time such plants as these become so familiar that we almost look upon them as natives, and the coming generations do not trouble themselves to inquire into the history of what to them are such common plants. Already people begin to overlook the work that Fortune did, much more do they pass over the labours of Douglas. Yet of all the men who have enriched our gardens there is not one who ranks higher than David Douglas.

We owe the present opportunity of recalling his merits to the courtesy of Sir Joseph Hooker, who placed in our hands some time since the materials from which our illustration has been taken. The portrait is from a sketch taken about 1827, after his return from his first memorable journey. Those who would know to the full who Douglas was and what he did should consult the account given by the late Sir William Hooker in the *Companion* to the *Botanical Magazine*, 1836, vol. ii. There will be found a complete list of the plants introduced by this ardent collector. Douglas was born at Scone, in 1799. In boyhood he preferred bird-nesting to book learning, and was apt to play truant, but his master, Mr. Beattie, gr. to the Earl of Mansfield, afterwards said of him that "he preferred a deevil to a dult," from which we may gather some indication of the energy and determination which characterised the future traveller. Messrs. R. & J. Brown, of the Perth Nurseries, were good botanists, and encouraged the lad in his botanical tendencies by lending him books and giving him information. It was natural that such a lad should find a place in a botanic garden, and a fortunate thing it was for science and gardening that Douglas came under the notice of the Professor, Dr., afterwards Sir William Hooker, at Glasgow. Here he gained the goodwill of the Professor, helped him with his lectures, and accompanied him on his excursions. When, in 1823, the Horticultural Society of London—it was not Royal in those days—determined to send out collectors Douglas was recommended by Hooker to the then Secretary, Joseph Sabine, and was sent to the United States, and afterwards to North-West America and California.



DAVID DOUGLAS.

Now-a-days people go in Pulman cars and take their ease at their inn as they roll along the railway track, but it was very different in the days when Douglas first sighted the Fir which has since borne his name. In spite of the difficulties Douglas journeyed from the Pacific to the source of the Columbia River, and thence to the Atlantic. His plants were described in Hooker's *Flora Boreali-Americana*, and in the *Botanical Register*. The red-flowering Currant, now so common, Clarkias, Calochortus, Pentstemons, Eschscholtzias, and hosts of other plants were discovered and introduced by him, together with the Douglas fir, Abies nobilis and A. amabilis, Pinus Lambertiana, and many other Conifers. He returned to London, and for a time was made much of in London society, but eventually he paid a second visit to California, sending home Mimuluses, seeds of Taxodiums, and Pines such as ponderosa, Sabiniana, till he writes to Dr. Hooker, "you will begin to think that I manufacture Pines at my pleasure." Hearing that his friend Sabine had resigned the secretaryship of the Horticultural Society, Douglas resigned as collector to the Society, but continued to collect nevertheless, receiving every encouragement from his constant friend, Dr. Hooker, not the least of whose good qualities was the constant support he afforded to botanical collectors. In 1833, Douglas left California, and proceeded to the Sandwich Islands. Here was another fine field for his energies, and he entered upon it with his customary zeal, but it was not to be for long; for, in July, 1834, news of his death reached the missionaries at Hawaii, and the later research revealed that he had met with a fearful death. Some pits were dug on the mountain side for the purpose of capturing wild cattle. In one of these pits the body of Douglas was found under circumstances which led to the inference that he had fallen into the pit and been gored by the animal which was found in it. Thus miserably ended the career of one of the ablest and most successful of that army of martyrs—botanical collectors.

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## THE FLORA OF ICELAND.

A PAMPHLET, written by Grönland, the well-known author of the *Icelandic Flora*, in his native tongue, deserves the attention of all students of comparative botany. The title, *Karakteristic af Plantevæxten paa Island, Sammenlignet med Floraen i flere andre Lande*, "The characteristics of the Icelandic flora compared with that of several other countries," sufficiently explains its general character. The countries, however, in which the comparison is carried out most fully are the kingdoms of Denmark, and its dependencies Greenland and the Faro Isles, and Sweden and Norway, which for this purpose are considered as one country. It would have increased the interest of the work for English readers if Great Britain, or at least Scotland, had been included also.

Among other results of this comparison it is shown that the flora of Iceland corresponds very nearly with that of the higher regions of Norway, while there are found locally a certain number of plants which in Norway are met with almost exclusively in the deep valleys or in the warmer regions of the coast and islands. This circumstance is due in some slight degree to the influence of the hot springs, but far more frequently to the sheltered situations afforded by those drifts which frequently occur in the lava fields. Among plants of this kind we may mention the Rubus saxatilis, Viola canina, Pyrola minor, Listera cordata, Paris quadrifolia, Poa nemoralis, Lastræa spinulosa, Aspidium lonchitis, Polypodium dryopteris and Polypodium phegopteris, all of which occur, some of them chiefly in high situations, in various parts of Great Britain. Of the 340 flowering plants and twenty-five Ferns and Lycopodiums which occur in Iceland only five species and six varieties are not known to occur in Sweden and Norway. The former are Chamærium (Epilobium) latifolium, Pleurogyne rotata, Platanthera hyperborea, Carex anguillata, Carex capillipes. Of these five two only—Platanthera hyperborea and Carex anguillata—are otherwise confined to America, and one only—C. capillipes—is found only in Iceland. This is also the case with three of the varieties above referred to. On the other hand, only something over half of the species found in Iceland occur, as far as is known, in Greenland, and these are almost confined to such as are common to almost all arctic situations, including not only Siberia, Spitzbergen, but also the higher ranges of mountains throughout Europe. All this tends to prove an original continuity of continent between Iceland and Norway; but its further continuance to Greenland can hardly be considered established. This view has, however, been maintained by Axel Blytt, the well known Norwegian botanist, in his essay on the "Transmigration of Plants."

The rest of the pamphlet deals very ably with the question of the influences of the physical and geological conditions of Iceland upon the flora. The conclusions of the writer have been obtained by a

very careful comparison of the species found in different parts of the island. The conditions which are most calculated to affect the flora are—1, The high latitude of the island: 2, the volcanic character of its geological formation; 3, the warm and cold currents which touch the south-west and north-east corners of the island respectively; 4, the frequent occurrence of hot springs.

1. As a consequence of the first, we find the snow-line averaging only 3000 feet in the southern, and about 2500 feet in the northern half of the island. This accounts of course for the general arctic or subarctic character of the flora.

2. The volcanic character of the island affects the flora indirectly in many ways. The presence of large wastes of volcanic sand, constantly shifting with the wind, which prevail for many miles in extent over the central tableland, make vegetation impossible in those districts. Travellers between the north and the south have to rest for something like sixteen hours without being able to obtain fodder or water for their horses. Again, the lava streams, which occur pretty constantly in different parts of the island, especially in the more northerly and southerly districts, only very slowly become sufficiently disintegrated to admit of any considerable vegetation. The extent of the flora upon these lava streams or fields depends chiefly upon their age. The subject is one which perhaps can never be determined with perfect exactness: but a good deal of knowledge has been gained by a careful investigation of those lava fields whose date can be ascertained by historical records. Thus upon certain lava fields near Mijvatn, which were known to have existed between the years 1724—29, the flora is still very scanty. On the other hand, upon the lava field at Thing-bellir, which was in existence at the first settling of Iceland in the ninth century, there is a fairly luxuriant growth of grass and flowers.

Much depends upon the character of the lava fields. When the surface is rough the depression becomes filled with soil and moisture, and the growth of vegetation becomes more rapid. Again, as above mentioned, the rifts which frequently occur are chiefly in the older lava fields, and becoming filled with water or forming watercourses admit of often a very luxuriant vegetation. Again the fertility of a district may be at any time completely destroyed by a fresh eruption. The volcanic sand, when it falls into moist places, is specially favourable for the growth of some species of plants.

3. The ocean currents do not seem to affect the flora as much as it might be supposed they would. The general difference in the number of species found in the northern and southern halves of the island is quite inconsiderable, the chief difference being rather in the frequency with which certain species are met with. Thus some plants which are pretty frequent in the south occur only locally in specially favourable situations in the north.

4. The influence of the hot springs is also not so great as might be supposed. In some few places the neighbourhood of the springs is marked by a largely varied flora; but more frequently the difference is marked rather by the greater luxuriance of the species which occur. I remember observing myself, at the so-called Blass Well, the magnificent size of the fronds of the Cystopteris fragilis, which grew over the steaming waters. Again, the influence of the hot water is often more than counteracted by the sulphur which it contains. Thus, round the well known geysers very few plants occur except Plantago major and Stellaria media, and other coarse weeds of the kind, and the same is the case with the sulphur springs near Krisuvik, in the south-west.

The writer makes some interesting observations on the general character of specimens met with in the island. As a rule, the growth is stunted, and yet exceptions to this rule are by no means uncommon, especially when plants are found in sheltered situations. Thus, the blossoms of the Geranium sylvaticum, Arabis petræa, Rhodiola rosea, Bartonia alpina, Veronica saxatilis, are frequently quite as large as in other countries where they grow; and those of the Chamænerium (Epilobium) latifolium, a plant little known to European botanists, are singularly large and beautiful; indeed, they far exceed those of the larger species of Epilobium with which Swiss botanists are familiar. Sometimes, too, plants attain a very considerable height. Thus, specimens of Angelica archangelica have been found growing to the height of 6 to 8 feet. Again, very many plants which do not attain any considerable height, make up for this deficiency by the luxuriant tufts which they form. This is especially the case with Dryas octopetala, Salix herbacea, Sibbaldia (Potentilla) procumbens, Alchemilla alpina, which sometimes cover patches of many feet square.

Perhaps I may be pardoned if I add a few remarks of my own, which are the result of the impressions made upon me by the flora of the country during a visit I paid to the island some years ago, and which this pamphlet has brought back vividly to my mind. The botanist who visits Iceland, expecting to find a rich flora either in point of the number of hitherto unknown species, or of beautiful flowers—supposing, of course, that he is already fairly acquainted with the flora of such mountains as the Alps or the Pyrenees—will probably be disappointed. He will here find certainly a large number of the plants which are to be met with on almost every Swiss mountain above a certain altitude; but he will miss many of those larger and more beautiful plants, such as the so-called alpine Rose or the Edelweiss, which add so much enjoyment to a tour in the Alps. At the same time he will find some new species, which in point of interest or beauty he will feel, if he is a genuine lover of flowers, will make up for the discomfort which a tour in Iceland more or less necessitates.

Two of these I will specially mention. One is the Pleurogyne rotata. It belongs to the Gentian family, and is very closely allied to the Swertia perennis, a plant which is not uncommon in some parts of Switzerland. It, however, differs from it in the one essential characteristic from which it derives its name. It has no styles, and the stigmas are decussate on the sides of the ovary, which is, as is Swertia, coloured blue, like the rest of the flower. This plant is rather local, but grows, I believe, in several parts of the island. I found it only at Akreyri, the chief seaport on the north. The other, called by Gröuland Chamænerium latifolium, but given in an old Icelandic *Flora* as Epilobium latifolium, is by far the most beautiful flower I found in the island. It grows upon the gravel islands and banks of the large southern rivers much the same kind of way that the Epilobium Fleischeri grows on the glacier streams of Switzerland. The Icelanders themselves call it the Eyraros, or Gravel Rose, and do well to be proud of it. *Oxon.*

# THE PROPAGATOR.

## THE PROPAGATION AND CULTURE OF DRACÆNAS.

(*Continued from p. 737, vol. xxiii.*)

IT must not be forgotten that greenhouse varieties must be propagated in a warm house; it could of course be done in a cold greenhouse, but it would be such a slow process that it would not pay for the trouble, nor produce such good results.

When the plants have been brought together in a warm house for propagation the first thing to be done is to examine them, and if any red-spider is detected they must all be sponged with a mixture of weak-tobacco water and-soft soap; but should they be infested with thrips or green-fly, it will be necessary to lightly smoke the house three nights in succession. If after this has been done the weather is dull, no air need be given, but if the sun shines the house must be carefully ventilated. The floor of the house should be kept well watered. It will be found that if the house is lightly smoked for three nights in succession, it will do a great deal more good than one night of heavy smoking. The plants should not be syringed until after they have been smoked.

The plants should not be cut down for about ten days after they have been brought into the warm house, and during that time they should be well watered and syringed twice daily, except of course during the smoking time, giving them but little air, and shading them from the strong rays of the sun.

### D. INTERMEDIA.

This garden variety is one of the best in cultivation for dwelling-house decoration. It keeps green for a great length of time, and always looks well. When used in the dwelling-house it should, of course, be watered as it becomes dry, but it should also frequently be taken into the garden to be syringed, so as to cleanse it from any impurities it may have. After this has been done the plant should be held with the head towards the ground for a few minutes, so that the water which had accumulated in the axils of the leaves may readily run off. The plant should not be taken into the house until the foliage has become dry. If this simple plan was adopted with plants generally used in the dwelling-house, they would not require changing so frequently, and would thus be a great saving of expense to the owner. It comes between D. congesta and D. rubra.

1. *From Seed.*—This variety may be propagated from seed. When the plants are coming into flower they should be moved to a part of the house beyond the reach of the syringe, and as the flowers open they should be fertilised day by day until the flowers drop off. When as many flowers have been fertilised as it is thought the spike will be able to bear, the remaining unfertilised flowers should be picked off. They must now be well supplied with water. As soon as the seed is ripe it should be taken out of the pod and sown. For this purpose it will be necessary to prepare a well-drained pan, filling it to within a quarter of an inch from the top with soil, which should be firmly pressed in with the bottom of another pot and made level. The seeds should be thinly sown on the surface and covered with soil level with the rim of the pan. After well watering them with a fine-rose pot, place them in a cutting-case upon a gentle bottom-heat. Here they should be watered as they become dry, shaded from the sun's rays, and ventilated for an hour night and morning. When the seedlings have grown to the height of 1½ inch the pans should be placed outside the cutting frame for a few days, to strengthen them. At the end of that time they should be potted each into a small long thumb-pot, and after watering them replace upon the gentle bottom-heat. They must now be sprinkled with a fine-rose pot two or three times a day. They must also be shaded from the sun, but they should receive but little air until they get strong, then the quantity should be gradually increased. As soon as they have rooted through the soil they should be potted into large 60's, and a small stick should be placed to each one and tied in two places loosely. After watering them replace upon the gentle bottom-heat; they must now be kept well syringed, shaded from the sun and should be allowed a good supply of air. When the plants are strong enough they can be potted in large 48's and taken to a warm house and placed upon the cold ash bottom of a front platform. When the plants are established and well developed they can be removed to a greenhouse or wherever they may be required.

2. *From Cuttings.*—The plant must be cut down to 2 inches below the last leaf and cut up into pieces 1½ inch long; each piece should be divided down the centre into two pieces, leaving as far as possible an equal number of leaves on each piece. The top cutting, however, should have 2 inches of the main stem attached. After preparing the bottom of the cuttings with a sharp knife, they can be potted into long thumb-pots. The soil must be firmly pressed into the pot, and a small stick must be placed to each plant, the leaves being tied up loosely in an erect form. The cuttings must now be watered with a fine rose pot and placed in the cutting-frame upon a gentle bottom-head. While in the case the cuttings must not be watered overhead but with a spout-pot. This should be done while they are standing outside the frame for air, for an hour night and morning. They must be shaded from the sun. When they have become well rooted in the thumb-pots they should be placed outside the frame for a few days and then potted into large 60's, to be returned to the case after they have been watered. As soon as the plants have gained strength enough they should be moved to a cold bottom and potted into larger pots as it becomes necessary. When the plants are well developed they can be taken into the greenhouse or conservatory.

3. *From Root Cuttings.*—The old plants which have been cut down for the cuttings should now be taken and the soil shaken from the roots. The long centre fleshy tap-roots should be taken off and cut up into pieces an inch long, and some of the very strong pieces can be divided down the centre into two pieces. A well-drained deep pan or 32-pot should be half filled with soil, which should be firmly pressed down; the pieces of root can be placed on the levelled surface upon their sides, but not so near each other as to touch. They should now be well sprinkled with river-sand, and the pots may be filled up with soil. They must be placed in a frame upon a gentle bottom-heat, and for a week they must not be watered, but at the end of that time they should be watered as they become dry. The case should also be ventilated for an hour night and morning. When the young

plants the roots send up have grown about 6 inches high they should be taken off as cuttings, and potted into long thumb-pots, and placed in the frame to receive the same treatment as those referred to above. If the pans containing the old roots are placed back in the cutting-frame they will bear several further lots of cuttings; should, however, only a few plants be required, the old roots and their shoots can be potted up together, instead of being separated for cuttings, and thus forming strong plants at once.

The following varieties can be propagated in a similar way, viz., D. congesta, D. rubra, D. lineata, D. Veitchii, D. australis, and all other varieties of the same sections.

D. Draco.

The seed of this plant should not be watered for a few days after it has been sown, but at the end of that time they should be watered and placed upon the open bottom-heat to be watered as they become dry. As soon as the seedlings have grown 2 inches in height they should be potted off into long thumb-pots, and placed upon a gentle open bottom-heat. When they are strong enough they can be potted into 60's and placed upon a cold ash bottom at a cool end of the house. They can be further potted on as they increase in size and strength. To propagate this plant by cuttings the top growths must be cut out with about an inch of the old stem. After being firmly potted up and watered, they should be placed in a cutting frame; the case should be ventilated for an hour night and morning and shaded from the sun, and the plants should be watered with a spout-pot as they become dry.

When any of the cuttings have rooted they should be placed upon the open bottom-heat, and after a few days they can be potted into pots of suitable size, and placed upon a cold bottom in a warm house. They can be further potted on as required, and when they have become well established they can be removed to the greenhouse. The same mode of treatment can be applied to the following varieties:—D. Rumphii, D. spectabilis, and D. spectabilis variegata, excepting the last-named variety, which does not come true from seed.

The soil for the seeds and cutting should be composed of half peat, quarter loam, and quarter sand. The soil should be damped with a fine rose-pot as it is being mixed together. It should also be sifted and rubbed through a quarter inch sieve before it is used. For the old plants and rooted cuttings the following soil is the best, viz., one-half good turfy loam, the remaining half being made up with peat, leaf-mould, and river sand. *T. O.*

# The Flower Garden.

The flower garden is now in full beauty, and no pains should be spared to keep it so for the longest time possible. Never allow the beds or borders to get into a bad state for want of attention—such as a good supply of water. Attend to all weeding and the removal of decayed flowers and foliage, regulating the growth of the plants by pegging and pinching, for once they are allowed to get into a bad state it is most difficult to get them into a perfect state again. I never saw the flower beds looking better than they do at present: the carpet bedding is perfection, all the foliage plants are magnificent; I never saw the colours more brilliant than they are this season, the heat of July has brought colours out to the highest perfection. Begonia boliviensis I beg to specially mention as one of the most beautiful plants for groups: of brilliant scarlet colour, compact habit, and good free grower, and most abundant blossoms, I think no garden should be without this beautiful plant. And I can also recommend Begonias for bedding; so many beautiful hybrids, either mixed or kept in groups, make a grand show, and last till very late in the season, till frost kills them.

The Begonia should be a great favourite as a garden plant, as they are easily managed and easily propagated either by seeds or cuttings, and their bulbs can be kept in any shed through the winter if kept moderately dry, and covered with sand, to keep rost from them.

Propagation.

As the time for propagation will shortly have to begin, especially Pelargonium cuttings, they will strike freely in pots or boxes—if put into light sandy soil, and the boxes or pots placed fully exposed to the sun—or they will strike freely if the cuttings are put in very light soil in the open borders. They do best if sprinkled every morning with clean water, if the days are hot and dry, but I find it much more convenient to have them struck in boxes, or pots, or pans, as they can be removed without fresh potting them till after Christmas, when we have more time and more room for them than at present; also provide a moderate hotbed for striking such subjects as require it. There will be no difficulty in obtaining the desired quantity of cuttings if care is taken to thin out the same without injuring the beds. Most kinds of succulents that are used for bedding are also best propagated at this season. Offsets of Echeveria secunda glauca, E. metallica, and E. glauca metallica, are best raised from seeds sown now in gentle heat, or offsets will root freely if planted firmly in light soil in single small pots, and exposed to the full sun.

As soon as we get rain no time should be lost before planting out seedlings of Wallflowers, Sweet Williams, Pentstemons, Antirrhinums, Brompton Stocks, Pinks, Carnations, &c., and divide Pansies, Primroses, Polyanthus, and Daisies, well watering and mulching them, for the hot, parching weather that prevailed during the last two months has been a most trying time for most plants, and more so where a thorough system of mulching and watering has not been carried out. Lawns and walks are now in a very bad state for want of rain. We have not had any rain here since the 4th of June, and the grass is completely burnt up; and the walk gravel is in a very loose and dusty state; nothing can improve the grass or walk but a copious supply of water, which I am sorry to say we cannot afford in this part of the country. *Wm. Smythe, The Gardens, Basing Park, Alton, Hants.*

# Plants and their Culture.

Bulbs for Early Forcing.

The white Roman Hyacinths are among the most prominent of these, and the season has again arrived when they can be obtained. The sooner, therefore, that the desired quantity is ordered the better, as a rule, will it be for the purchaser; the first opportunity should be taken advantage of to pot-up at least a portion of these. For our own part we prefer to pot them all at once, it being a very easy matter to retard some if advancing too rapidly. Three bulbs in a 48-sized pot will make a very good display for decorative purposes, and be far better than placing the bulbs thickly in a pan or box, and then transferring them to pots as they advance into bloom. This latter system is, we are well aware, largely adopted now; it has not, however, anything in it to recommend itself, but should rather be discouraged when the practical side of the question is looked at. When the bulbs are in flower we want them to last as long as possible in a fresh state; and disturbing the roots, and thus causing the loss of many of them at that important period, is not the way to obtain satisfactory results. If the bulbs are only wanted to supply cut blooms then we have nothing to say against the system; pans, boxes, or any other receptacle will then answer the purpose, and be a saving of labour.

Good mellow loam, with well decomposed manure, should be chosen, and some sharp sand or road-scrapings added; this will give a soil wherein they will thrive well. Rich soil is desirable for these and other bulbs that have to make a rapid root-growth and develope their flowers in such a short space of time. After potting we still recommend the same practice as we have previously advised in other years, and this we will condense in a few words now. Choose a frame or cold pit with a sunny aspect, place the pots therein, and near the glass, then give a thorough watering, and cover with a layer of cocoa-nut fibre of about an inch in thickness, allowing the same material to settle among the pots as this operation is being performed. Damp the fibre as it becomes dry, and leave the lights off till the colder nights set in. If no space under glass is available, stand the stock close together in the open, and then later on a movable frame will perhaps be at command wherewith to cover them. If extra early flower is desired, then close the frame or pit early in the afternoon, after the bulbs have been potted a few weeks.

Early Roman and Paper-White Narcissus, and the Duc Van Thol Tulips may be treated in like manner as just recommended for the Hyacinths. Of the latter, also, some of the most early flowering kinds of the Dutch section should be secured early; of whites, Grande Vedette and Madame Vander Hoop are two of the best; of pink or red kinds choose L'Ami du Cœur and Homerus; and of blues, Grande Vedette and Argus; these kinds will be found to answer their purpose well, but bear in mind that when early flowering is expected a correspondingly early potting must be practised to obtain the best results. Failures at the blooming time are not so much the fault of the firms who grow and who supply the bulbs as we are at times disposed to attribute to them.

Other Bulbs.

Of these the Belladonna and Guernsey Lilies should be chosen as soon as the first importations arrive; delays are dangerous with these subjects, the flower-spikes often being on the move ere the bulbs can be potted up; in such cases do not fully expose them to the light at once, but give the roots a little opportunity of making headway in the first instance, nor is it advisable to attempt to hasten them at any time. More failures occur, we think, from these omissions than from any other cause.

Dracænas.

The reason previously given for now propagating Crotons also applies to this genus where struck from the tops, either by gradually severing them from the parent stock, or by taking them off straight away into small pots; and as soon as this work is performed, if any extra quantity be needed, it will be well to look after the stem and tap-root for this purpose. Before any Dracænas are stood closely together whilst under the process of propagation, look sharply after any of the thrips that are peculiar to the plants, as these if present will quickly work much injury to the leaves, which no after-cultivation whatever can efface.

Acalyphas.

These are handsome plants in a small state when of characteristic growth; their diversified markings and bright colours cause them to light up well at night. Where any extra amount of autumn and winter decoration is anticipated, some dwarf plants should be secured without delay; they are distinct from anything else, and easily grown, but require a light place.

Ananassa sativa variegata (the Variegated Pine-apple).

At this season of the year large plants of this form will probably be fruiting; fortunately, this variety with some cultivators has a disposition to emit several crowns of smaller size, rather than one large one, from the to of the fruit. These should be looked after, and propagated singly in small pots; the character of the growth from crowns is far more elegant than from suckers, and capital plants can be secured in 5-inch pots. If no better place is at hand, they can be suspended from the roof of the stove, but as near the glass as possible; they will thrive well in this position, and the foliage is not so liable to be injured. *James Hudson, Gunnersbury House Gardens.*

The Jerusalem Artichoke.—The Sunflower Artichoke is being extensively cultivated in Belgium, as by a new process of distillation some 8 per cent. of alcohol can be obtained from its tubers. More than 3500 acres of poor, almost waste land, around Antwerp will this year be cropped with the plant. The residue after distillation is nutritious. France is thus also in the way of cultivating large stretches of her poor, thin, chalky, and schistose soils with this new crop. The cultivation of Jerusalem Artichoke is very much the same as that for Potatos. February or March is the time to plant; the earlier, the better will be the yield. Indeed, if the soil be sufficiently friable, the planting may be made even in winter. Owing to the quantity of its foliage the Jerusalem Artichoke draws a great deal of its food from the atmosphere. Artichokes are now being cultivated alike in Iowa and Arizona as a material for fattening pork. In field culture they are not hard to eradicate, and must be replanted at least once in two years. An Iowa farmer finds one or two acres sufficient for quite a large herd of hogs. *Journal of Forestry.*

## APPOINTMENTS FOR THE ENSUING WEEK.

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| Tuesday, | Aug. 11 | Royal Horticultural Society: Show of Plants, Flowers, and Vegetables, at 12 noon; Meeting of Fruit and Floral Committees, at 11 A.M. |
| | | Sale of the Collection of Orchids, &c., of the late J. S. Law, Esq., of South Lodge, Southgate, at Stevens's Rooms. |
| Wednesday, | Aug. 12 | Sutton and Cheam Horticultural Society, with County Show of the Surrey Bee keepers' Association. |
| | | Ramsgate and St. Lawrence Horticultural Society's Show. |
| | | Taunton Dene Horticultural Society's Floral Fete. |
| Thursday, | Aug. 13 | Sale of Established and Flowering Orchids, Ferns, Caladiums, Seeds, &c., at Stevens' Rooms. |
| | | Aberdare Horticultural Society's Show. |
| Friday, | Aug. 14 | Sale of Imported Orchids, at Protheroe & Morris' Rooms. |
| Saturday, | Aug. 15 | Sale of Consignment of Bulbs from Holland, at Stevens' Rooms. |

THE hot dry weather experienced lately in the South naturally leads to some apprehension as to what the effects of such a drought may be, where circumstances do not permit of sufficient artificial supplies being afforded. The gardener and the farmer are fullyimpressed with the necessity that growing plants experience for water, but they apparently do not think it worth while to do much in the way of providing storage, and they have comparatively little information as to the exact nature of the changes in the plant brought about by water, whether in excess or in deficiency. In discussing this matter recently, M. DUCHARTRE referred to some experiments of HELLRIEGEL, of which it may be serviceable to give the general results. Seeds of Wheat, Rye, and Oats were sown under identical conditions in all respects except as to the supply of water. As to the supply of this agent the experiment was divided into seven sets. In the first set water was supplied to the soil to the amount of 80 per cent. (full saturation being considered as 100). To the second set 60 per cent. of water was supplied; 40 per cent. to the third; 30 per cent. to the fourth; 20 per cent. to the fifth; 10 per cent. to the sixth; and 5 per cent. to the seventh. The dry matter of the crop remaining after the watery constituents had been driven off by heat, was in round numbers as follows:—No. 1, 19.6; No. 2, 22.7; No. 3, 21.7; No. 4, 17.1; No. 5, 14.6; No. 6, 6.3; No. 7, 0.1. So that the largest results as estimated by the amount of dry matter were obtained when the percentage of water supplied to the soil was 60. A rapidly progressive diminution occurred when the amount supplied was less than 40 per cent., and in absolutely dry soil no growth at all took place. Following up these experiments, M. DUCHARTRE took some Yam tubers (Dioscorea), and placed them in a dry room where they were exposed to diffused light, but where they received no water at all save such as might have been in the atmosphere. After a time the tubers began to sprout as Potatos will do under like circumstances, the water in the tissues of the tuber being sufficient for a time. The shoots and leaves produced from the Yam under these circumstances presented precisely the same superficial appearances as do shoots that are produced in the dark; that is to say, they were much lengthened, very slender, and with small ill-developed leaves. The colour, however, was unaffected, and the internal changes were quite unlike those witnessed in the case of etiolated plants. In blanched plants the walls of the cells and vessels are relatively thin and flaccid, but in the Yam the shoots were extraordinarily rigid—a result due, not so much to any increased thickening of the cells and fibres which go to support and brace the plant, as to the great reduction of the more cellular portions; in other words, the woody framework was not much affected by the drought, but the portions devoted to the reception, assimilation, and digestion of food, were greatly reduced.

—— THE DROUGHT.—Mr. G. J. SYMONS writes to the *Times* as follows:—"Rainfall observations have now been made uninterruptedly in this country for 160 years, not, alas! at any one place, but by careful calculation I have obtained values which are, I believe, very near the truth, for every year from 1726 to 1885. During the whole of this long period there is no instance of more than five consecutive years being wet until we come to recent years, and then we have the unprecedented fact of nine consecutive years (1875 to 1883), each wetter than the average; in short, the quantity in those nine years was as great as usually falls in ten years and a quarter. In 1884 (just as in 1834, 1844, 1854, 1864, and 1874) the fall was below the average, and complaints of drought and of deficient water supply immediately arose. I have not had time to thoroughly examine the records of the early months of 1885, but my impression is that up to the middle of June the fall did not differ materially from the average, but the latter half of June was very dry. I now come to July, which has been so remarkably dry that I am sure the facts will be examined with interest. I append them in the form of a table."

*Rainfall in July*, 1885.

| County. | Station. | Average in July, 1726-1885. | July, 1885. | Deficiency. |
|---|---|---|---|---|
| | | In. | In. | In. |
| Middlesex | London, Camden Square | 2.47 | [illegible] | [illegible] |
| Kent .. | Maidstone, Hunton Court .. .. .. | [illegible] | [illegible] | [illegible] |
| Kent .. | Hythe .. .. .. | 2.46 | 0.47 | [illegible] |
| Hants .. | Isle of Wight, St. Lawrence .. .. | 2.48 | 0.70 | 1.78 |
| Hants .. | Strathfield Turgis .. | 2.30 | 0.22 | 2.08 |
| Herts .. | Hitchin .. .. .. | [illegible] | 0.10 | [illegible] |
| Bucks .. | Newport Pagnell .. | 2.70 | 0.14 | 2.56 |
| Norfolk .. | Swaffham .. .. | [illegible] | [illegible] | [illegible] |
| Wilts .. | Salisbury, Alderbury .. | [illegible] | [illegible] | [illegible] |
| Devon .. | Okehampton .. .. | [illegible] | [illegible] | 1.35 |
| Devon .. | Holsworthy .. .. | [illegible] | 1.14 | 2.00 |
| Gloucester .. | Clifton .. .. | [illegible] | [illegible] | [illegible] |
| Lincoln .. | Ulceby, Killingholme .. | 2.78 | 0.06 | [illegible] |
| York .. .. | Skipton, Arncliffe .. | [illegible] | [illegible] | [illegible] |
| Northumberland | North Shields .. .. | [illegible] | [illegible] | 0.96 |
| Monmouth .. | Newport, Llanfrechfa .. | 3.69 | [illegible] | [illegible] |
| Kirkcudbright .. | Cargen, near Dumfries .. | [illegible] | 2.68 | 0.45 |
| Kinross .. .. | Loch Leven .. .. | 3.05 | [illegible] | [illegible] |
| Forfar .. .. | Arbroath .. .. | 2.64 | 0.79 | [illegible] |
| Cork .. .. | Black Rock .. .. | 2.84 | [illegible] | 1.52 |
| King's County .. | Portarlington .. .. | 2.68 | [illegible] | 1.42 |
| Galway .. .. | Ballinasloe .. .. | 2.88 | 2.75 | [illegible] |
| Down .. .. | Waringstown .. .. | [illegible] | 1.85 | [illegible] |

—— THE ANTWERP EXHIBITION.—We publish in another column a report of this important exhibition, which however does not equal the corresponding exhibition in Paris in the spring. As usual on such occasions, great confusion reigned at the beginning, and our reporters complain that the facilities afforded by the authorities were not what they might have been. We Britons are very apt to grumble and parade our shortcomings, though we are not so pleased to hear other people do so, but in this matter of flower show arrangements and of judging, we have certainly little to learn from our foreign friends. Indeed, we think they might learn a lesson in organisation and economic management of time by studying our system, especially that of judging. We do not admit that Continental judging is any better than our own, but it certainly requires three or four times the length of time that our judges find necessary.

—— ODONTOGLOSSUM CORONARIUM (fig. 37).—We cannot do better than quote with reference to this species what Mr. WILLIAMS, in the *Orchid Growers Manual*, says:—"A charming species, from South America. It grows 18 inches high, with short thick pseudobulbs, and dark green foliage; the spike, which rises upright from the side of the bulb, is about 18 inches in height, sepals and petals reddish-brown, edged with yellow, lip bright yellow. It does best in a pot in heat, and will continue a long time in perfection." The specimen figured is of moderate size as compared to that figured at p. 304 of our number for September 6, 1879, where will be found some comments on the art of flower drawing, which are not without interest at the present moment. The plants of it in Sir Trevor Lawrence's collection are perhaps the most vigorous in the country, and there they are grown in long narrow baskets adapted to the creeping habit of the plants. They are placed in a cool, sheltered part of the Odontoglossum-house, where neither the direct rays of the sun nor varying currents of air can reach them. It is found to do best in fibry peat and living sphagnum moss, so placed about it as to allow of perfect drainage for the liberal supply of rain-water which the plant demands at all seasons. In several other places we have seen the plant doing well placed over the tank in the cold house.

—— "THE CANADIAN RECORD OF SCIENCE."—This publication includes the proceedings of the Natural History Society of Montreal, and replaces the *Canadian Naturalist*. The part before us is chiefly occupied with geological matters.

—— TURNER MEMORIAL.—We very willingly give insertion to the following:—"Some steps have been taken to raise a fund to provide a Memorial for the late Mr. CHARLES TURNER—the memorial to take the form of certain prizes offered at the Dahlia Show, but I think you will agree with me that something more should be done than this, to express the regret we feel for the loss of one who for nearly half a century held such a prominent position amongst us, and who was so universally respected. A meeting of horticulturists will be held at South Kensington on August 11, to consider the matter? J. DOUGLAS."

—— THE JUBILEE YEAR OF QUEEN VICTORIA.—The auspicious date of the "Year of Jubilee" of Her Majesty Queen VICTORIA is on the 20th day of June, 1886. The half-century of her reign will be completed on the 20th of June, 1887, but the precedents are in favour of the "Jubilee" being held at the beginning and not the end of the fiftieth year. "The most direct (says the *Globe*) is that of 1809, upon the 25th of October, when rejoicings were held throughout the empire because of the entrance of GEORGE III. upon the Jubilee Year; and in this the original institution of the Jubilee itself was obviously followed. 'Thou shalt number,' says the Mosaic law, 'seven sabbaths of years unto thee, seven times seven years; and the space of the seven sabbaths of years shall be unto thee forty and nine years. Then shalt thou cause the trumpet of the jubilee to sound . . . . throughout all your land. And ye shall hallow the fiftieth year, and proclaim liberty throughout all the land unto all the inhabitants thereof; it shall be a jubilee unto you.' Only three sovereigns in the whole tale of English history have been suffered to see the opening of such a year—HENRY III., EDWARD III., and GEORGE III." It is another happy coincidence that the year 1886 should have been chosen by Americans for the holding of the American Exhibition in London. It will lend an additional *éclat*, says the *American Eagle*, to HER MAJESTY'S Jubilee, complementing as it will the British Colonial and Indian Exhibition, and thus the whole of the English-speaking races will be represented in the British metropolis.

—— CHAMÆROPS EXCELSA.—Mr. SNOWDON HENRY of Bonchurch, has kindly favoured us, through Messrs. VEITCH, with a photograph of this Palm, which is flowering in the open ground, where it has been for the last four years without protection, which is not a common occurrence, though we remember to have seen it in bloom at Kew. We hope shortly to give an illustration of the inflorescence.

—— MORMODES LUXATUM EBURNEUM.—The flowers of the type are a straw-coloured yellow, and in this variety, although not so white as the name would lead one to imagine, they are nearly so with a faint trace of green veins, and a blood-purple band on the lower half of the labellum. They are deliciously fragrant, and produced on a long, pendulous, many flowered peduncle with a bold striking appearance. M. luxatum was described by LINDLEY, but since his day science has brought more light to bear upon the limits of the genus, and this species must now be included amongst the Catasetums, although, in all probability, the older name will be retained amongst gardeners. There are three form (namely, male, female, and hermaphrodite) belonging to the same species, and M. luxatum is the female form, belonging to the section Monachanthus of Catasetum. It is characterised by the absence of the bristle-like appendages of the column by which no doubt LINDLEY considered it to be a Mormodes, under which name it is figured in the *Botanical Register*, 1843, t. 33.

But the labellum is sessile and deeply concave, not clawed as a true Mormodes should be. What is even more peculiar, it is twisted on one side, so that one of its lateral edges, not the apex, faces the column. A strong flowering plant is now conspicuous amongst the Orchids at Kew. A large page illustration is given in our columns, July 29, 1882.

—— Flower Show Ethics.—A correspondent writes:—"At a recent show I sent some plants to compete for a cup. Through an oversight no entry was made, but the plants were accepted, shown, judged, and awarded 1st prize, which was stuck up, but afterwards taken down again, and the committee decided that no prize should be given. I have entered a protest, saying that the committee has no right to withdraw the cup after having allowed the plants to be shown and the judges to award them the 1st prize. Am I right or not?" [This is a difficult point to decide, as so many considerations are involved, and so many irregularities seem to have been committed. For our part, we think that the committee is in this case the final court of appeal. The committee was wrong in the first instance in allowing the competition to be made at all, because it was unfair to those who had complied with the rules; but this initial error does not, in our view, deprive the committee of its rights as supreme arbiter to revise its decision in the case. Ed.]

—— Scottish Arboricultural Society.—This Society held its annual excursion in the Carlisle district, and Mr. Watt, of the firm of Little & Ballantyne, offers hospitality to the members on the morning of August 6, at 8.30, previous to the excursion to Lowther. Mr. Watt invited several members of the English Society to meet their Scottish associates on this occasion. The meeting was a representative one of the arborists of Great Britain, and now that the subject of forestry is receiving great attention, is likely to be productive of much good.

—— Iris lævigata.—It is highly gratifying to note how plentifully this noble Japan Iris is becoming disseminated in this country. When properly understood it is by no means difficult to cultivate, and if planted in a suitable position the trouble of attention as to watering is reduced to a minimum. Being subaquatic in habit, it enjoys a constant supply of moisture in the growing season, while in the absence of that the plants not only fail to give satisfaction, but merely dwindle, and ultimately perish. A most natural position would be the banks of a stream or pond, where the roots on descending would find an unlimited supply of moisture. Two fine clumps on the banks of the pond facing the Museum at Kew have been the admiration of visitors for some time back. The massive-looking flowers are 6 to 8 inches in diameter, and several varieties offer strange contrasting mixtures of purple, indigo, violet, white, and the never-failing yellow blotch in the throat. The species is figured in Regel's *Gartenflora*, 442, i., in the *Botanical Magazine*, t. 6132, and in *Gardeners' Chronicle*, July 11, 1874, and is best known in English gardens under the name of Iris Kæmpferi.

—— Conandron ramondioides.—At first sight this bears a strong resemblance to a white-flowered Ramondia, but the anther connectives are produced beyond the cells and united to form a cone round the style. The rotate corollas and prominent stamens also bear a strong superficial resemblance to the flowers of a Solanum; but as a matter of course it differs widely in the construction of the ovary and other particulars. The leaves are ovate, rugose, of a deep shining green, and lie pretty close to the ground. The flowers are produced in corymbose cymes on naked scapes about 3 to 6 inches high, and as a rock-garden plant may be considered neat and attractive. It is a native of the mountains of Japan, introduced to this country as late as 1879, and still a rare plant. There is a figure in the *Botanical Magazine*, t. 6484, and a flowering specimen on the new rockery at Kew. Hitherto its hardiness has been doubted, but should it resist the severity of our winters as well as Ramondia pyrenaica, British gardens will have made an acquisition; otherwise, however, the cultivation of the one will suit that of the other.



Fig. 37.—Odontoglossum coronarium. (see p. 176.)

—— The Rowe Orphan Fund.—We are sorry to have no further contributions to record this week—a circumstance attributable to the August holiday season probably, but the need for help is sore.

—— Dr. Reichardt.—The *Times* correspondent telegraphs that Dr. Henry William Reichardt, one of the Professors of Botany in the University of Vienna, committed suicide recently by hanging himself in a fit of temporary insanity. This sad event, which occurred at Moedling, deprives Austrian science of a man who, though he was but fifty years old

at the time of his death, had long ago made his mark among the botanists of Europe. Dr. REICHARDT had many friends in England, and was an occasional contributor of articles on botany to English periodicals. Most of his writings, however, were published to the monthly journal of the Vienna Academy of Sciences. His last undertaking, which remains unfinished, was the compilation of a catalogue of the Imperial Botanical Cabinet, of which he was the keeper, and the arrangement of this valuable collection in the rooms allotted to it at the new Natural History Museum. REICHART was born at Igiau in 1835. He graduated as doctor in medicine at Vienna in 1860, became Assistant Professor of Botany in the same year, and in 1866 was named Deputy-Keeper of the Imperial Botanical Cabinet. In 1879, on the death of Dr. FENZL, he succeeded the latter in his Chair of Botany at the University, and also in his appointments as Chief Keeper of the Botanical Cabinet and Vice-President of the Vienna Horticultural Society. He had previously been Secretary of this society.

—— BELLADONNA.—The leaves of this plant, which is grown about Hitchin for medicinal purposes, should be collected at the flowering period, when it is found that they are richest in atropin. An article in the *Pharmaceutical Journal* states that GERRARD finds the leaf to be the part of the plant richest in alkaloid, the root, fruit, and stem, next in order. An examination of parts of wild and cultivated plants by GERRARD showed 100 parts each gave as follows :—

| | Wild. | Cultivated. |
|---|---|---|
| Root .. .. .. | .450 | .350 |
| Stem .. .. .. | .110 | .070 |
| Leaf .. .. .. .. | .580 | .400 |
| Fruit .. .. .. | .320 | .200 |

The leaves, without exception, have been found to yield the largest percentage of alkaloid.

—— THE AMERICAN EXHIBITION OF 1886.—As already announced, a great Exhibition of American Products and Industry will be held next year at the same time as the Colonial Exhibition. The committee have secured 22 acres of ground, near Earl's Court, in direct communication with all the leading railways. The *American Eagle*, from which we take some of the following particulars, is a monthly journal published at 7, Poultry, London, E.C., and devoted to the interests of the Exhibition :—

"The industrial departments of the Exhibition, in all their varied branches, will invite and attract special attention to the wonderful progress made in the United States of America since the Centennial Exhibition of 1876. Comprising much that has not yet been seen in Europe, the great improvements made by Americans in all branches of labour-saving machinery, especially for the utilisation of wood and metals, the practical helps for household purposes, the advantages secured by new motors and the most rcent completed appliances for using the telegraph and the telephone, will possess a deep interest for Europeans and visitors from the colonies.

"It is proposed to arrange the entrance hall so that the European visitor shall take leave of his native soil, and shall temporarily be in and commence his visit to North America from the harbour of New York, with the BARTHOLDI statue of Liberty, and the striking features of the eastern entry to the United States around him.

"On leaving 'New York harbour,' the visitor's first excursion will be through the various States across the continent to San Francisco—from the Atlantic to the Pacific seaboards. He will have the opportunity of inspecting collections illustrating the wealth and civilisation of the entire country from east to west, from north to south.

"The railway routes and the picturesquely diversified scenery of the agricultural, pastoral, forest, and mining States will be illustrated by paintings, plans and products. The material resources and characteristic social conditions of the various parts of the vast territory extending from ocean to ocean and from the Lakes to the Gulf of Mexico, will thus be exposed to view, and offer exceptional facilities for comparison.

"The condition of the respective agricultural, grazing, mineral, and manufacturing localities will be particularly shown, and in a manner which will be intelligible and inteesting to all; whilst the state of development and the undeveloped resources of the various sections will be brought under the visitor's notice in such a form as will enable him to establish a trustworthy basis for judgment as to their respective advantages.

"About 10,000,000 of people reside within one hour of the proposed American Exhibition Station, in addition to the 150,000 strangers who, it is estimated, enter the city of London daily. For accessibility by railway the site at Earl's Court is probably not equalled by any other in the United Kingdom.

"The manufacturing department of the Exhibition will comprise the development in every branch of that inventive genius which in the United States has reached so high a point; and, so far as possible, it is proposed to present the various processes in working order by the aid of electricity, steam, gas, or hydraulic power.

"A separate hall (the Industrial Hall) will be devoted to the handicrafts pursued by white, Chinese, Indian, and negro men and girls. The labour-saving machinery, by which manual toil is reduced to a minimum, will be plentifully exhibited. The systems of working the great railways and canals, the oil wells, and the coal and silver mines will be shown, together with the machinery and organisation by which American manufactures are produced.

"The site selected will furnish 10 or 12 acres of grounds for these purposes, and afford ample space also for the display, in climatic sequence, of exclusively American Conifers, and other plants, shrubs, and flowers, including an avenue commencing with those found in the Northern and Eastern States, and ending with those of the Southern and Western States.

"The Exhibition will include a Californian wine-shop, Florida fruit stores, an Indian village, Indian canoe-makers and mat-weavers, ice-drink pavilions and bars. Restaurants, with the products of the Eastern and Pacific coasts, of the Northern and the Southern States characteristically prepared and served by white and coloured male and female cooks and waiters, will help to mark the peculiarities and variety of American social development. Arrangements are being made to include a press pavilion, an Atlantic cable office, an electrical elevated railway, and reproductions of the façades and interiors of remarkable hotels and public buildings.

"Proposals are on foot for the holding in England of the annual conventions for 1886 of American learned societies and other similar bodies. The corresponding British societies have already cordially offered hospitality and the use of their respective headquarters to their 'American cousins.'"

—— WESTON-SUPER-MARE. — The annual flower show will be held on August 18.

—— "RABENHORST'S CRYPTOGAMIC FLORA."—The fourth volume of this important publication commences with the Musci, described and illustrated by Herr K. GUSTAV LIMPRICHT. The illustrations are very clear.

—— "COMPENDIO DELLA FLORA ITALIANA."—The last portion of the text of this publication is now issued. The plates contain carefully drawn illustrations of the several genera of the Italian flora, while the text contains concise descriptions, in Italian, of all the species. The work has been edited by Professors CESATI, PASSERINI, and GIBELLI, and has been several years in execution.

—— GARDENING APPOINTMENTS.—Mr. W. JARMAN, for upwards of thirteen years Head Gardener to the late S. HEREPATH, Esq., has left Westwood Lodge, Thanet, and been appointed Gardener to J. FARMER, Esq, Chapel Hill House, Margate.—Mr. WALLACE ADAMS, for the past four years Foreman at Stoneleigh Abbey, Kenilworth, has been appointed Gardener to W. J. LEGH, Esq., M.P, Lyme Park, Stockport.

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CACTUS HEDGES.—The Cactus makes an admirable hedge, and is easily propagated by cuttings. Snip off a piece and bury its end in the ground, and it will generally grow. Some nervous people, however, object to it for its supposed property of harbouring snakes or vermin, and the authorities, in some places, wage a war of extermination against this useful plant. A sort of Cacticide epidemic raged some years ago in Madras, and a native medical officer won both honourable mention and a tangible reward by divulging to the authorities his discovery that the "Coccus," or Cactus bug, was the natural and appointed destroyer of the Cactus tree, and should be therefore enlisted for its destruction! The suggestion was rapturously received. The labours of gangs of convicts employed in grubbing up and burning the plant were dispensed with, and in lieu thereof a departmental issue of Cactus bugs was at once ordered on the most profuse scale. For months the luckless postal runners groaned beneath the weight of parcels of the Cactus plant, with healthy "cocci" adhering, pieces of which infected plant were to be distributed in spots where the Cactus was plentiful, that the great battle of *Coccus* versus *Cactus* might be fairly fought out. It reads like a scheme disinterred from the archives of the philosphers of Laputa, but was actually conceived and carried out in Madras, and is too curious an example of intellectual idiosyncracy to be passed over in silence by the conscientious historian. *Mason's "Burmah.*

## THE DATE PALM.

IN the *Gardeners' Chronicle* for February 21, 1885, page 240, the following statements occur, quoted from *Nature*, under the heading of "The influence of direct sunlight on vegetation." Regarding the Phœnix dactylifera, L., it is stated that "it never forms dense forests;" that "the Date Palm is indigenous to the Great Desert (Sahara);" that "nowhere else does the plant vegetate so rapidly;" that "when cultivated with success, it is also in a desert climate, as, for instance, in that of Murcia in Spain;" that "the cause of its being without fruits in the Mediterranean is the dry summer, their being no subterranean wells, as is the case in the Sahara."

I think these theories are erroneous, as I shall endeavour to show further on, but before doing so, I would call attention to an article in the *Garden* of February 28, 1885, page 165, on the "Palms at Bordighera," in the Mediterranean. It says, "But by far the most lucrative trade is in Palms. They are planted in every available spot, and most carefully cultivated; the soil is excellent and suits them well. As the plants attain a certain height they are swathed, or tied up in the same way that we treat Lettuces. Large quantities thus blanched are sent to Rome and other places for Palm Sunday, while a considerable number find their way in the month of August to different Jewish communities for the Feast of Tabernacles." [See also illustration in *Gardeners' Chronicle*, April 8, 1876]. Further on, it states that "Many old Palms have strings or orange-coloured Dates depending from the crowns, but these are never fit for food." The group of Palms selected for the illustration in the *Garden* certainly does not show careful cultivation. They are growing out of a hillside, where they could get little water, either from rain or other sources.

I do not know whether the Date Palm is indigenous to the Sahara desert; but this I know, that it has been disseminated wherever the Arabs have gone. All along the North of Africa, up the Nile, into the Soudan, into Spain, whence it could have been easily introduced into Bordighera, on the Riviera, by "Dominican monks some centuries ago," as the *Garden* states. In Mooltan, Sindh, and adjacent countries the Date Palm grows in hundreds of thousands. There is a legend that the seeds were introduced by the Arab conquerors of Mooltan in the seventh century. It is largely grown on both coasts of the Persian Gulf, whence the best Dates found in the London shops come. The Date Palm is more likely, I think, to have been indigenous in Arabia (or wherever the Phœnix sylvestris has its home), and then to have found its way to the Sahara with the Arabs.

There is no doubt that most trees require direct sunlight to grow luxuriantly and strongly, provided they get moisture at their roots, and I should say the Date Palm is no exception to the rule. I know it grows badly under trees, but I would not be certain that this happens because of the absence of direct sunlight, and not because it is robbed of nourishment by the trees. The Phœnix dactylifera and the P. sylvestris are, I believe, botanically identical. At the foot of the Kalka Hill, in the Punjab, there is a dense forest of the latter. The Wild Date Palm is also to be seen all over India. It is one of the "Toddy" Palms in Mysore, the Deccan, North-western Provinces, and even further north. In many parts of this district (Etawah) there are groups of the wild Date Palm, with numbers of young Palms growing at the foot of the old ones; and in the latter case their source of water can only be from the clouds, in the rains, as the subsoil water is too deep (often 60 or 70 feet) to suppose that their roots get down to it.

I think the Date Palm will vegetate rapidly wherever it gets water at its roots, at the same time that it has a suitable soil, and a sufficiently warm atmosphere.

In Bengal immense plantations are made of the Phœnix sylvestris. Date-sugar is made from its sap. In Jessore alone, in 1882—3, official reports state that there were 24,122 acres under Date cultivation, and that the value of moist and dry sugar in that year, came up to Rs. 48,46,241. In Bengal the subsoil water is near the surface, and the atmosphere is more or less damp throughout the year. This Palm is grown there only for its sap, and the Palms are so planted that their leaves touch, when full-grown.

As to the Phœnix dactylifera, the cultivated variety, I have studied it more closely. In the

Persian Gulf there is a great trade in Dates with Europe and America. From information obtained through the British political Resident, it appears that in the Gulf there are upwards of one hundred varieties of Dates, that some do not ripen their fruit beyond the red or yellow stage, which is crisp and astringent, or sweet, according to the amount of ripeness. These are called "Kharek," and those kinds which are exported to Europe in boxes, after passing through their "Kharek" stage, become soft and sweet, and acquire the well known amber-brown colour, and when allowed to become semi-dry on the trees are picked and packed for exportation. These are called "Khoorma."

Now everywhere in the Gulf the Date Palm is very carefully cultivated. Plantations are formed of female offsets only, the trees are irrigated from whatever source may be possible—rivers, wells, springs, rain torrents. Irrigation appears to be an important matter in Date cultivation. The trees are also well manured; in short, they are treated in every way as fruit trees are from which a first-class crop is expected. When in flower artificial fertilisation is practised, without which, they say, a crop cannot be relied on. Moreover, they say that "unfertilised Dates are stoneless and insipid, and only fit for goats." If the Palms are well cared for and in good soil, they begin to bear in five or six years from offsets.

All along the Gulf, at Busra, Bushire, Lar, Bunder-Abbas, Bahrein, El Hasa, &c., the Date Palm has the influence of the sea; in the interior of Arabia it has not. Palgrave met with it throughout his journey, but always in oases, where it could be watered from some source or other. He says, "it is the staff of life and the staple of trade." In Muscat it has also the sea air. There the annual rainfall is only 6 inches.

On the other hand, in Mooltan, it grows from seed spontaneously. It is never cultivated. In Sindh, Bahawulpoore, Dehra Ghazi Khan, Dehra Ismail Khan, and as far as Bannu, it is equally abundant. Mr. O'Brien, Deputy Commissioner of Mooltan, informs me that the P. dactylifera grows literally in hundreds of thousands, so that in the Mooltan district alone the Government revenue, at the nominal rate of one anna per female tree (four farthings) comes to Rs. 12,084. At this rate there cannot be less than 193,344 female trees. There are, however, many exemptions, and the male trees are not taxed. The annual rainfall in Mooltan is 7 inches, and there is no such thing as sea air. *E. Bonavia, M.D., Etawah.*

*(To be continued.)*

# FORESTRY.

## THE THINNING OF WOODS.

I NOW come to what I consider the most important part of a forester's responsibility. He has fenced, drained, and planted, and it will now devolve upon him to attend to the future welfare of the plantation. I do not expect that for the first ten years much thinning will be required, but side branches on Firs may be overreaching the hardwood; these should be cut back, and if any rival branch be appearing on the hardwood tree, it should be neatly cut off. This will give liberty for two or three years more, but after that time the cutting-out process must begin. It is now of the utmost importance to thin by carefully cutting out the worst trees, and allowing a free circulation of light and air to penetrate through the whole plantation. This should be continued with the same care, at stated intervals of four or five years, up till thirty years of age. Beyond that age thinning may not be required for six or eight years, and at intervals up till sixty years of age, when much more cannot be done until they are finally all cut down. I always class a certain number of acres of aged plantations with a given number of young to be thinned during the year, so that both classes of plantations may receive their due share of attention. Besides, the receipts and expenditure, on a yearly comparison, appear more evenly adjusted by adopting this plan of thinning. I manage to get over the whole every seven years. And in order to show that planting is not a losing investment, I herewith give the result of my twenty-eight years' management and experience, during which time I have planted 800 acres of old and new land, yielding therefor little or no return as yet. The receipts properly have been derived from 2000 acres, making £1 10*s.* 11*d.* per acre, and the expenditure 12*s.* 4*d.* per acre. If I take the whole 2800 acres into consideration, the receipts are £1 2*s.* 1*d.*, and the expenditure 8*s.* 5*d.* per acre, leaving a clear nett balance in the first case of 18*s.* 7*d.*, and in the second case of 13*s.* 8*d.* per acre. Moreover, there is a crop of fine thriving trees left standing on the ground for futurity, worth from £40 to £60 per acre. "*Management of Plantations in Cumberland*," *by W. Baty.*

## ARISÆMAS.

THE interest attached to these singular-looking plants is of no ordinary kind. Few of them have been cultivated in this country for any considerable time, but their distribution in gardens is not so universal as the beauty of their foliage or the unique character of their inflorescence would warrant. Probably their want of popularity is due in a great measure to the absence generally of gay colouring—a feature of leading importance in the horticultural world. The cultural treatment is of the easiest, as the tuberous rootstock may be potted, grown, and rested exactly as in the case of deciduous bulbs. The species under notice are natives mostly of the Himalayas and cooler parts of Asia, and consequently succeed in a cool house provided the atmosphere be not saturated with moisture nor stagnant for any lengthened period, otherwise a deposit of water, resulting from condensation, collects in the spathe, causing the whole inflorescence to damp off prematurely. On the other hand, if subjected to too drying an atmosphere by ventilation necessary to regulate the temperature, the healthy green colour of the leaves is changed to that of a sere or sickly hue, or, in other words, the plants are hurried to maturity much sooner than is desirable. They will also succeed in an intermediate or cool stove temperature, but apparently a cool atmosphere is more appropriate to their well-being, and conducive to the proper development of the foliage, which in Arisæma speciosum and A. galeatum attain handsome dimensions. In either case the leaves are ternate, the leaflets elliptic and margined with dark brown or red. They are figured in the *Botanical Magazine*, tt. 5964 and 6457 respectively. One leaf only is produced from a tuber contemporaneously with the inflorescence. The spathe of A. speciosum is unusually large, and of a deep blood-purple colour, while the enormously elongated and slender tail-like continuation of the spadix, together with other characters in both species, are broad and distinctive marks of affinity. These appendages doubtless serve as guides to creeping insects, there being no question about the necessity of the intervention of insect agency in the process of fertilisation. A. ringens, better known perhaps as A. præcox, and synonymous with A. Sieboldi, differs from the above in having two leaves and in the absence of the attenuated appendages to the spadix. The large-hooded spathe is green, striped with white lines, and bears striking resemblance to a cobra in the attitude of striking. The deep brownish-purple auricles surrounding the lateral orifices form another conspicuous feature of this species. It is a native of Japan, and a figure is given in the *Botanical Magazine*, t. 5267. A. curvatum, figured in the *Botanical Magazine*, t. 5931, exhibits a striking departure from the above type. The enormously elongated leaf-sheaths clasp the flower-stalk and greatly simulate a true stem bearing two or three cauline leaves. The two lateral leaflets of each are branched in a helicoid manner, doubtless giving rise to the synonym, A. helleborifolium, by which the plant is frequently known. The sheaths are most beautifully marked with zig zag red blotches on an olive and pale green ground, presenting in different individuals a wide range of colour in ever-varying intensity. The flowers are monœcious or mostly so, that is, the male and female flowers are found within the same spathe—a character of uncommon occurrence in the genus, as these organs are mostly always on different plants. The spadix ends in a curiously curved proboscis-looking structure. We have a third and very distinct type of leaf in A. concinnum, figured in the *Botanical Magazine*, t. 5914. It is cut up into a great number of linear leaflets that simulate the radii of a wheel. The spathe is green striped with white lines; and slender branching processes above the female flowers representing abortive stamens is another marked character of this species. In A. nepenthoides, figured in the *Botanical Magazine*, t. 6446, the sides of the spathe above the tubular portion are drawn out into yellowish-brown auricles, thus mimicing in some degree a Pitcher-plant. Another species that surpasses A. speciosum for decorative effect is A. Griffithi, otherwise known as A. Hookerianum, and figured in the *Botanical Magazine*, t. 6491. The spathe is very large, hooded, and a curious mixture of brownish-violet striped or reticulated with green. The spadix is also drawn out into a long appendage. It is to be regretted this species is not more universally cultivated. A. triphylla has a green spathe, striped with broad bands of purplish-brown, and is interesting as the oldest introduction belonging to the genus. It is the Arum triphyllum of Linnæus figured in the *Botanical Magazine*, t. 950.

Fifty species are known to science, but only a few comparatively have been introduced. A collection is annually flowered at Kew in some or other compartment of the T-range. A full-sized illustration of A. speciosum is given in our columns, vol. xii, 1879, p. 585, and at p. 689, November 29, 1884, a new and very remarkable species, A. fimbriatum, is described and figured. *J. F.*

# The Apiary.

THE present year, 1885, has been a very good one for our little friends the bees. The early part of the season, especially during May, was very unfavourable to them, and many good stocks were lost throughout the country for want of a little attention and feeding. But those who fed their pets have been well rewarded since. It may be taken as an axiom, that if it does not pay to feed animals, it certainly will not pay to starve them, and bees form no exception to the rule.

It is well known to experienced bee-keepers, that the great breeding month in England is May. While bees are breeding they require a great deal of food, and if they cannot get it out-of-doors they must be supplied with it artificially in the shape of sweet syrup, or they will get very weak, and much valuable time will be spent in recovering their strength, which might be spent in gathering honey.

It was not till June 1 that bees generally began to work hard, but ever since that date they have been working early and late. Honey has been stored at an amazing rate, and it has also been a great swarming year. I have great respect for good second swarms, and as a rule I always keep them, instead of returning them to the parent stock. All swarms after the second had better be returned from whence they came, to prevent the parent stock from becoming hopelessly weak. My reason for liking good second swarms is because they contain young queens, and it is of the utmost importance to have good, fertile, young queens in the Apiary. The natural time for a queen to exist is four or five years, but as a rule their laying powers begin to fail at the end of the third year, and it is then very desirable to destroy them and put in their places young queens. A very good time to do this is at the end of August, for no honey of any importance is collected after that. In my own Apiary this year I have several second swarms, which are doing more work than the firsts; and I attribute this to the age of the queens, as the first swarms are always headed by the old queen. When it is understood that a hive is only prosperous when it is well peopled, and that a young queen lays about 2000 or 3000 eggs a day, it will be seen that as soon as she begins to fail she must be superseded, if large quantities of honey are to be obtained. In my next paper I shall give very clear instructions how to take the honey, and double up weak stocks for winter. *Agnes.*

## A PINE DESTROYING FUNGUS.

IN the list of awards of the International Forestry Exhibition at Edinburgh in the *Gardeners' Chronicle* for December 6, 1884, p. 726, it appears that in Section 12, "On the Destructive Influence on Wood of Fungi," no essay was received. We in this country have rather dropped behind our German *confrères* in this matter. Much attention has been recently paid by them to the destructive influence which the larger fungi have upon living trees. It has taken us about twenty years to grasp the fact that some of the Uredines are heteræcismal in their life-

history (that is, they assume different shapes, according to the plant upon which they live), so that by the beginning of the next century we may come to recognise the fact that many Agarics, Polypori, Peziæ, &c., are not confined to dead and rotting matters, but that they actually cause the death and decay of living trees.

Dr. P. Magnus has recently drawn attention to the fact that Polyporus Schweinitzii must now be regarded as a fungus capable of causing the death of certain species of the Pines. He recently communicated to the Botanical Society of the province of Brandenburg the following facts concerning the death and destruction of a fine tree of the Weymouth Fir (Pinus Strobus, L.), in the Berlin Botanic Garden. On October 9, 1881, during a severe gale, this tree was blown down, when it was discovered that the interior of the base of its trunk was rotten through the action of the mycelium of Polyporus Schweinitzii. Since 1874, possibly before, specimens of this fungus had been observed growing beneath the tree in question, they occurred annually more or less regularly in converging lines corresponding to the principal roots on one side of the tree.

In 1874 the fungi were found at a considerable distance from the stem; year by year they got nearer and nearer to the trunk, until at last they occurred upon it. Dr. Magnus pointed out that those specimens which grew at a distance from the tree where they had to push themselves through a layer of earth were of typical central stemmed form (Mesopus); when they were produced on the stem in the fork between two main roots they were provided with a lateral stem (Pleuropus) but when they grew from the stem itself they were stemless (apodia), and further, that when they occur upon a flat surface they are in the young state resupinate, constituting the Polyporus coruscans of Schulzer v. Müggenburg. In the affected wood of the Berlin Fir tree the mycelium of the fungus formed the same kind of "mycelial nests" or "mycelial cushions" which Hartig describes with his Trametes radiciperda* (Polyporus annosus, F.) The woody cells were perforated by the mycelial hyphæ, and in those parts in which the wood was quite soft and rotten the tissues were more or less absorbed. The fungus in question also attacks the roots and base of the stem of other Pines. This Dr. Magnus has observed with Pinus sylvestris at Konigsdamm, near Berlin, and with Larix europæa in the Engadine, near Pontresina. *Charles B. Plowright, 7, King Street, King's Lynn.*

## AN ABNORMAL FORM OF PUCCINIA BETONICÆ, DC. *

A SHORT time ago I received from Mr. Downes, of Bristol, a Puccinia on the leaves of Betonica officinalis, which presented a very abnormal appearance. Very many of the spores, about one-eighth of the entire number as near as I could estimate, were three-celled. Many of these had the three cells placed one above the other so as to approach Phragmidium, but others had them arranged at various angles and in various relative positions so as exactly to resemble a Triphragmium. There were also a few meso-spores, or one-celled teleuto-spores. The great variety present will be seen from the accompanying drawing (fig. 38). The ordinary two-celled spores were the most numerous, and in other respects the fungus exactly agreed with the type of P. betonicæ. I have examined specimens from three other localities, but failed to find any but the ordinary spores.

There are at least two other species of Puccinia besides P. variabilis and (according to Rev. J. E. Vize) P. conii, with the same peculiarity—P. tomipara, Trelease, which is sometimes even 5-celled; and P. triarticulata, B. and C., both of which occur on gramineous plants. Phragmidium triarticulatum, B. and C., on Potentilla (which is only a form of P. obtusum); and Triphragmium deglubens, B. and C., on a leguminous plant, also have two horizontal septa; the latter, *par parenthèse*, appears to be a good Phragmidium. Thus the form of P. betonicæ here figured (fig. 38) is a connecting link between Puccinia, Triphragmium and Phragmidium, and if it were not for its smooth spores and the great preponderance of the two-celled forms it might be doubtful how it should be classed. Mr. Downes informs me that he has found it only in a single spot, on the downs, near the Avon gorge, and the species is, I believe, hitherto unrecorded for the Bristol district. *W. B. Grove, B.A., Birmingham.*

* Hartig, "*Lehrbuch der Baumkranheiten*," p. 77, f. 33.

## COMMON GARDEN INSECTS.

IN my last article on this subject I glanced at a few of the insects to be found haunting the ground, and concealed beneath stones and in crevices. I now change our place of observation, and look amongst the vegetation for other garden inhabitants. Here we shall find a much greater variety of insect life, and here also we shall have to look closely to find out the full extent of that small life. Most of these insects are of such colouring or form as to be easily mistaken for the surrounding objects the insect may happen to frequent—such as the leaf on which it feeds, or the timber in which it burrows. Thus it will often be found that the insects on green leaves are green, and of so similar a shade that it is but the motion of the insect that enables us at a glance to detect its presence;—thus to most minds will recur the instances of green caterpillars, green aphides, and green bettles. Some caterpillars are so exactly like bits of broken twigs that they often startle children who take hold of them, and feel the bits of twigs soft and alive. Many plant beetles are the imitation of buds, others are like seeds. Many other examples might be given, but these suffice to show that close observation is necessary in this interesting branch of natural history. It is astonishing how quietly and how unobservedly insects at times destroy

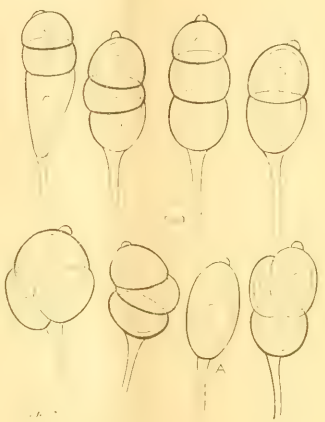


FIG. 38.—ABNORMAL FORM OF PUCCINIA BETONICÆ

vegetation; they do it in so subtle and sure a manner that often the first indication of their presence is the ruins of once-flourishing beds of plants, or the sudden withering of the foliage of hitherto healthy trees. This is often due to the similitude in appearance between a portion of the plant and its destroyers—or to the nocturnal habits of the depredators.

A more careful observation of the curious and of the complex habits and transformations of insects enables us to discern which are beneficial and which injurious, and how to encourage the one class and eradicate the other. Thus it is that we know aphides to belong to the latter and ladybirds to the former class.

The foliage and flowers of spring and early summer shelter countless minute caterpillars, and a variety of small variously coloured insects; later in the summer months it is observed that the majority of the caterpillars are of larger size, and there is an evident increase of brightly-coloured beetles, spiders and flies. The caterpillars are mostly hatched by the warm rays of sunshine from minute eggs which are dispersed in immense numbers on the leaves, stems and bark of trees, &c., where they had been deposited in the previous autumn. No better example of this class of garden denizen could be given than that of the common large garden white butterfly (Pieris brassicæ), the life history of which is illustrated in the lower half of fig. 39, p. 181.

### THE CABBAGE BUTTERFLY.

A patch of eggs and the minute caterpillars or larvæ nearly immerged from them are seen on the leaf. These tiny eggs are at first quite white or pale yellow, and form an object for the microscope of remarkable beauty, which is worthy the examination of all who take an interest in the garden and its insect life. An egg magnified is drawn at the bottom left-hand corner of the woodcut. When the eggs are near the hatching point they darken in colour, and a magnifying glass reveals through the delicate transparent shell a sight which fills the observer with amazement: the embryo caterpillar is seen in gradual course of formation, and if patience and warmth have permitted it, the observer will witness slight movements within the life-case, and presently the shell will break and a black head with moving jaws will be thrust out; the little caterpillar unfolds and slowly crawls away from the egg-shell and inserts its jaws into the green leaf. It is curious to witness how judiciously the little creatures avoid crowding together, but strike out in different directions, and thus they make sure of a plentiful supply of food, and distribute the effects of their depredations. These caterpillars eat continually, and hence rapidly increase in size, until they present the appearance shown in our drawing in the centre of the illustration, which is a full-grown caterpillar.

It will be observed that this insect is composed of thirteen segments from head to tail, which is a distinctive characteristic of all insects both in the larval and perfect states; but in the case of this and most other caterpillars these segments are sharply defined and readily recognised. It will also be noticed that the three segments or "joints" nearest the head bear a pair of legs each; these are the real feet, or claspers, as they are sometimes termed, which develope into the feet of the future butterfly. There are four pairs of false feet or suckers, which adhere to the ground by suction, and which disappear in the butterfly. On the last or tail end is a fifth pair of suckers also, which can attach themselves to a surface with considerable force, as any one can attest who has noticed the wrigglings of one of these caterpillars when feeling for new feeding ground.

The caterpillar now ceases to eat, and quietly betakes itself to a secluded corner, where in peace it spins a web around its body, and wrapt therein remains quiescent awaiting its change into the butterfly. Although so dormant outwardly, activity reigns inside; processes are going on within that chrysalis-case which are the amazement and the puzzle of all naturalists. In course of time the worm is changed into the beautiful winged butterfly, which breaks its case and emerges soft and wet; but it quickly dries and spreads its wings to commence its life in the air and sunshine. The chrysalis is represented in fig. 39 on the left. The butterfly, it will be recognised, is one of the common insects so familiar to all, with strongly veined white wings, bearing three black spots, two on the upper and one on the lower wing, and dark colouring on the corner of the upper wings. The antennæ, as with all butterflies, is clubbed at the extremity—unlike moth's, which are tapering—and the large black staring eyes are the optical apparatus, containing, we are told, thousands of lens, each a perfect, simple eye.

The wings derive their chief beauty and their colouring from the covering of scales which lie on like slates on a roof, and are attached in a similar manner. A small portion of the wing magnified is drawn in fig. 39, at the bottom right-hand corner, and detached scales more highly magnified next to it, exhibiting somewhat the form of battledores.

### THE PEACOCK BUTTERFLY.

Another well known insect is illustrated in fig. 39, upper portion—the Peacock butterfly (Vanessa Io). The curious spiked and spotted caterpillar feeds upon the common Nettle. This beautiful butterfly—common in most districts—is brilliantly coloured and figured in the upper side of the wings but only of a mottled brown on the under-surface, somewhat resembling a dried and brown leaf, so that it is no easy matter to detect the conspicuous brightly-decked insect when it alights from flight upon foliage and brings its wings together over its back after the manner of butterflies. At the left-hand corner is seen the head of the insect, magnified, showing the long spiral tongue.

This is a curious structure, and one that will repay the trouble of microscopic examination; in the figure the profile is seen, the large compound eye at the side and the long curved tongue, so elephantine-looking in form though of minute size, is seen unrolled as it is when about to be inserted into flowers to pump up the honey-juice. This little piece of insect apparatus is a mass of muscles and sensitive nerves comprising a machine of greater complexity and of no less precision in its action than the modern printing

machine. When not in use the tongue rolls into a spiral and disappears under the head. A butterfly's tongue may readily be unrolled by carefully inserting a pin within the first spiral and gently drawing it out.

## Home Correspondence

**The Big Vine of Kinnell.**—Auchmore, one of the seats of the Marquis of Breadalbane, is situated at the top of Loch Tay, and near to the pretty village of Killin. This district partakes strictly of a beautiful and romantic character. On rising ground in the neighbourhood of the village is pointed out by tradition the grave of Fingal, and to the west of the village, immediately below the bridge that crosses the river Lochy, on a little island clothed with Fir trees, in the middle of which is the burial-place of the MacNabs, once the potent chieftains of this district; and on the north of Loch Tay stands the lofty Ben Lawers, the monarch of mountains in this district, and well-known to botanists for its native plants. Being in this district some time ago I took the opportunity to visit Auchmore, to see the famous Vine planted in the gardens at Kinnell, the old residence of the MacNabs, and a short distance from the mansion house. [It is a Black Hamburgh, and was planted fifty years ago in a lean-to house over 200 feet long, and the stem measures (1 foot from the surface) 18 inches in circumference, and has carried for the last six years the following crops :—

| Year. | Bunches carried | Bunches taken off. | Bunches matured |
|---|---|---|---|
| 1879 .. . | 1100 | 476 | 624 |
| 1880 . .. .. | 1474 | 760 | 714 |
| 1881 .. .. | 1[illegible] | 1[illegible] | 700 |
| 1882 | 1[illegible] | 11[illegible] | 5[illegible] |
| 1883 . | [illegible] | 1[illegible] | [illegible] |
| 1884 | 1[illegible] | 1[illegible] | 520 |
| 1885 . | [illegible] | [illegible] | 550 |

I may state that the Vine is in excellent health, and everything about the place is in perfect order. On visiting Kinnell I was fortunate to meet Mr. Cant, the head gardener there, who is justly proud of his grand Vine and its extraordinary productions. Professor Blackie, when in that district, spoke of this Vine in the following terms :—"I visited the grounds of Kinnell, which contains one of the greatest natural curiosities, or rather one of the grandest natural productions. Like Ben Nevis among the mountains so is the Vine of Kinnell among Vines. I have seen the old Yew in Fortingall, in Glenlyon, certified to be more than 50 feet in girth, and more than 200 years old, but it is a vegetable ruin, and, like old churches, it can live a long time with a green outside; but the Vine of Kinnell is as lively as a young salmon, for it fills the whole house of 200 feet, and there are gathered from it yearly hundreds of bunches of luscious juicy purple Grapes, and although fifty years old it is as healthy as the heather on the hills." Professor Blackie states that he wrote the following lines as a memorial of so elevating a spectacle :—

"Come hither all who love to feed your eyes
On goodly sights, and join your joys with mine,
Beholding with wide look of grand surprise
The many-branching glory of this Vine.
Pride of Kinnell, the eye will have its due,
And God provides rich banquet, amply spread,
From starlit cope to huge Ben swathed in blue,
And this empurpled growth that overhead
Vaults us with pendent fruits. Oh, I would take
This lordly Vine, and hand it for a sign
Even in my front of estimate, and make
Its presence teach me with a voice divine.
Go hence, and in sure memory keep with thee,
To shame all paltry thoughts, this noble tree."

*John Downie, Edinburgh.*

**New Pea, Ameer.**—A writer in the *Gardeners' Chronicle* at p. 107 says that Laxton's new seedling Pea, Ameer, certificated by the Fruit Committee of the Royal Horticultural Society on July 2 after trial at Chiswick is but a reproduction of William I., with pods a trifle finer. The suggested similarity of these two Pea potentates has never presented itself to my mind, as the raiser—the two varieties differing widely in origin, habit of growth, and shape and colour of the seed, and in the shape, as well as in the larger size of the pod, William I. showing its green marrow or Prizetaker origin—Ameer, on the other hand, being a blue Pea from Laxton's No. 1 Early Blue Wrinkled (a Pea now almost lost sight of), and having in it the blood of Little Gem. *T. Laxton, Bedford, July 29.*

**Passiflora fœtida.**—It would appear from the sample of Passiflora fœtida which I enclose, that my statement that the fruit was not "dry inflated" needed "confirmation," as the green fruit I have just cut through are not juicy. It may be the juice, &c., is secreted in a later stage. I do not recollect that I ever cut through a green fruit before; but I have grown the plant for many years, and have no recollection of having ever found a ripe fruit which was not as I described it. What I am now growing is a self-sown seedling of this year; it may be that the plant varies in this respect. When the fruit is ripe I will send you it in that condition. *Edmund Tonks.* [The fruits of Passiflora sent are, as we have seen them always, dry and inflated. There is, however, a little pulp around individual seeds. ED.]



FIG. 49.—THE CABBAGE AND PEACOCK BUTTERFLIES. (SEE P. 182.)

**Potato Disease.**—This, I fear, will be bad this year, for, though we have had a dry time, which is generally considered unfavourable to the spread of the Oïdium, the tops of many kinds of Potatos are showing the dreaded spot and tainting the air with the odour of decomposition; and no doubt when we get rain or a moister condition of the atmosphere the spread of the disease and the rot which follows will be rapid, and therefore the sooner the tubers of such sorts as are fully grown are out of the ground the better. If the skins are not quite set it matters but little so long as they are lifted and handled carefully, and laid in a cool dark airy place till wanted for use. Those for seed may be left out for a few days to get a little green and hardened, but not to that extent one sometimes sees them, as they lose too much of their sap and vitality. *J. Sheppard.*

**Turner Memorial Prize.**—I met at the Carnation show Mr. Glasscock, of Bishop's Stortford, who told me that it was intended to raise funds for the purpose of providing certain prizes at the Grand National Dahlia show as a memorial of the late Mr. Turner, I was too busy to take any notice of it at the time. I now read a paragraph in most of the gardening papers that subscriptions may be sent in to the Hon. Treasurer, Mr. T. Moore. May I be allowed to say, first, that sufficient prizes are already offered to make a first-rate Dahlia show in the schedule already published, and if larger prizes were offered the best blooms would be merely shifted from one class to another—an arrangement which would scarcely make any difference to the general effect. I wish to say, in the second place, that raising a few pounds to provide prizes at one exhibition for Dahlias is an arrangement totally inadequate to provide a memorial for Charles Turner. Now that the idea of a memorial has been started it must not be a restricted affair, as this promises to be, but a national one. In order to carry this out I propose that a preliminary meeting be held ot South Kensington on August 11, immediately after the various committees have completed their labours, which will be at 12.30 P.M. The name of Turner is honoured and respected all over the country, and an appeal for funds, backed up by the leading horticulturists of the metropolis, would meet with universal approval and support. *Jas. Douglas, Great Gearies, Ilford.*

—— Will you allow me space to remark concerning a proposal made by Mr. Douglas in reference to the Turner Memorial Prize to be offered at the forthcoming Dahlia Show, that the latter will in no way interfere with his larger scheme. It is specially appropriate as an acknowledgment of what Mr. Turner did to establish that show; it is prompt as to time, and, moreover, it has been widely announced both in the Press and by private means. Why attempt to disturb it? The larger scheme could not possibly be brought to any satisfactory head before next year, and should be established as a permanent Memorial, like the Veitch Memorial, whereas the Dahlia Memorial Prize is to be offered once for all. I hold several subscriptions towards it, and hope to receive more before Tuesday next, when the sum in hand must be dealt with, and the nature and conditions of the prize settled. *T. Moore, Hon. Secretary, Dahlia Show.*

**Fungus Poisonous to Pheasants.**—In my notice of this subject on p. 148, I omitted to say that Agaricus fibrosus, Sow., a close ally of the plant described, is—judging by its deterrent odour—also probably poisonous. Mr. Mills' fungus presents considerable resemblance to A. fibrosus, as well as to A. scaber. *W. G. S.*

**Disease in Plants.**—I enclose a Cockscomb affected with the same disease as the Myrtle which I sent to you about twelve months ago, when you requested me to send you another specimen worse affected. I had not one in a worse condition, I thought that bad enough—however, perhaps this plant will meet that description. For years I have been unable to grow a healthy Cockscomb, the same with Capsicum, and many other plants. I notice that the Begonias and Fuchsias at Chiswick are very badly affected with the same disease. Mr. Barron once came to my place to advise me on the disease, but he could make nothing of it, nor can he now with his own experience. It is a very formidable disease, which appears to me to be spreading, and certainly demands more attention on the part of scientific horticulturists than it has yet received. *Edmund Tonks.* [We shall advert to this later on. ED.]

**Fertilisation of Passiflora.**—I have a Passiflora Buonapartea which at the present moment has seven fruits about 5 inches in length, all the flowers having been fertilised with their own pollen before the house had been opened in the morning. As to whether the fruits contain perfect seeds, of course at present I cannot say; but on the said fruits becoming ripe (if you would care to know) I will let you know the result—or, what would be better, I will send you some of the seeds, so that you can judge for yourself. *A. J. Hemmerde.*

**Winter and Spring Lettuces.**—To supply the above without stint during the winter and spring months is a matter of no small importance. Such has been ably treated in your columns before; still the subject is so urgent, that it may be retold with profit. For early winter supply we rely on such sorts as All-the-Year-Round and Hick's Hardy Cos, which are sown, say in the middle of July, then duly pricked out, and before severe frost comes on they are lifted carefully and planted in cold frames. For late winter and spring use we sow the first and second week in August: Grosse Blonde d'Hiver, Lee's Immense, and Hardy Hammersmith, are the varieties sown. When fit to prick out they are put three rows in a 4-feet bed, in clumps of five, to be covered with *cloches* or French bell-glasses, as the season comes round that they are wanted to come in. In case of damp they are to be tilted up a little from below. The *cloches* are invaluable for such purposes, as they seem to concentrate the light during the dark days of winter. We find Grosse Blonde d'Hiver Lettuces to be most excellent for the above purpose, as, being so tender, every leaf can be used. *L. L.*

**Phormium tenax.**—Doubtless the fine warm summer of 1884 had a good deal to do with the flowering of this Australian Flax, in ripening up the crowns; here we have a plant with a spike quite 12 feet high within 400 yards of the sea. *H. Carter, The Gardens, Downhill, Coleraine.*

**Cockscomb, McLachlan's Glasgow Prize Dwarf Crimson.** — This novelty, sent out by Messrs. Veitch, of Chelsea, merits all that has been said in its praise. We grew an early batch of two dozen for carpet bedding; our object was to grow them as dwarf as possible. Not having a suitable pit or frame at our disposal, they were grown on a shelf 2 feet from the glass in the Melon-house, where they grew with great vigour, showing a dwarf, compact habit. After the combs developed they were the admiration of all who saw them, the colour being of such a brilliant deep crimson, the plants being at the same time of a uniform size. Several weeks ago, after selecting what we required for bedding, three which were of a superior quality to the others were placed in an intermediate-house amongst some Adiantums, &c. To-day (July 27) we measured them; the first was 2 feet 3 inches from tip to tip, 10½ inches in breadth, and 7¾ inches high from the rim of the pot; the tips meet within 1¾ inch. The dimensions of the other two are not so good. The above are in 7-inch pots. Had the above pots had a more generous treatment the dimensions would have been larger. We were told to-day by a veteran Cockscomb grower of forty years' standing they were the best strain he had seen. *William Kettlewell, The Gardens, Balrath Barry.*

**Campanula Hendersoni.**—In the *Gardeners' Chronicle* for July 21, 1883, p. 75, are several remarks upon this interesting Campanula. Firstly, Mr. Wolley Dod supposes it to have originated from a cross between C. carpatica and C. pyramidalis, and the Editor says it is stated to be C. turbinata × C. alliarifolia. Mr. E. Jenkins has a note on the same page in which he doubts if C. pyramidalis played any part in this plant, because he found it lacking in vigour. Now we have lately had a new Campanula sent out by an Irish firm under the name of C. Tymonsii, a hybrid raised by the Rev. C. Tymons, of Cloghran. It was stated to be a natural hybrid between C. turbinata and C. pyramidalis, and quite intermediate between these two most distinct species; of low bushy pyramidal growth, and blooming profusely all through the season; colour clear blue, paler in the centre (see the *Newry Catalogue*, p. 8). Now this proves to be exactly the same plant as C. Hendersoni, sent out many years previously, and it therefore confirms Mr. Wolley Dod's original surmise, as there is very little difference indeed between C. turbinata and C. carpatica. One thing is, I think, quite certain, viz., that C. alliarifolia had nothing whatever to do with C. Hendersoni. The leaf and habit of that plant are altogether differing. *W. Brockbank.*

**A Nice Point.**—A somewhat curious question affecting exhibitors at flower shows was submitted to me a few days ago, with the request that I would, as far as I could, express an authoritative opinion upon it. At a flower show there was a class for a group of plants arranged for effect. The prizes were good, and there appears to have been a keen competition in this particular class among the gardeners residing in the neighbourhood. The awards were duly made, and later in the day a protest was lodged against the awarding of the 1st prize on the ground that the cultivator of the plants had engaged some one outside of his own garden to arrange his group for him, and it was surmised, if not asserted, that he who had arranged had at one time been engaged in this work while serving a firm of well known floral decorators in London. The point submitted to me was this: Did the employment of an outsider contravene the regulations of the schedule of prizes? The class was set forth as follows:—"A group of plants arranged for effect, to fill a space of 120 superficial feet; a tasteful arrangement to be primarily regarded by the judges." It will be observed that the way of stating the conditions of the class does not assert that the cultivator is required to arrange what he sets up for competition, though, it may safely be stated, this is generally understood. The rules and regulations governing exhibitors state that "All articles exhibited for prizes must have been grown by and have been the property of the exhibitor, and in his possession at least two months previous to the day of exhibition;" and further, that there "must not be the exercise of any artifice to deceive the judges, or attempts to gain prizes by unfair means." On consideration, I thought the generally understood spirit of the regulations had been violated, because it is an invariably recognised principle that an exhibitor arranges his or her exhibits; but no letter of the law had been transgressed. I could not say that the exhibitor had employed artifice in order to deceive the judges; nor dare I assert that there had been an attempt to gain a prize by unfair means. I therefore recommended that the decision of the judges should be allowed to stand, but suggested that in the future a proviso should set forth that the cultivator of the plants, or one of his assistants, should be required to arrange the subjects forming the group. I think it not unlikely that some—perhaps many—will be disposed to dissent from this decision; but it was not made until the facts of the case had been carefully weighed. And I was greatly comforted in respect to my decision by what I witnessed at the exhibition of the National Carnation and Picotee Society, at South Kensington, on the 28th ult. I saw a well-known cultivator, raiser, and exhibitor of Carnations and Picotees—who I believe afterwards acted as one of the judges—dressing the flowers of a brother exhibitor. This is, I have no doubt, an occasional practice at exhibitions of this description and sanctioned by usage. But I could not see the slightest difference between the two cases—there was in each the employment of extraneous aid to give effect to the exhibit; only it might be said that the act of dressing Carnations and Picotees gives an artificial value to the flowers, but this can scarcely be said of the mere act of grouping plants. Perhaps some of the readers of the *Gardeners' Chronicle* will give their opinions on the two cases. *R. Dean, Ealing, W.*

**Valerianella eriocarpa, Desv.**—A correspondent has sent a Valerianella badly affected with a fungus, and asking if the parasite is a Peronospora. The curious point is this: Valerianella dentata, Poll., Koch, or Deitr. was growing plentifully in the neighbourhood without the parasite, but wherever the fungus was detected the host plant appeared to be V. eriocarpa, Desv. The change in appearance was entirely brought about by the fungus growth. *Quære.* Were the plants found by Mr. E. Lees in Worcestershire, and referred by him to V. eriocarpa, Desv. (according to Babington), mere fungus-attacked forms of V. dentata? I venture to think this is very probable, and that V. eriocarpa will have to be expunged from our Floras even as a mere "reputed casual." The fungus which caused the transformation was Oidium Balsamii, not Peronospora Valerianellæ. Wooliness and hairiness in plants often follows the attacks of both fungi and insects. *W. G. Smith.*

**Industrial Exhibitions at Flower Shows.**—It is customary in the case of some flower shows about the country to have what is known as an industrial department, in which prizes are offered to cottagers, their wives, and daughters, for examples of needlework—many different objects being required, such as underclothing, children's frocks, stockings, hearthrugs, patchwork, patches of calico, darned stockings and linen; prizes are also offered for children under fifteen years of age, while another division is for children under ten. The male head or member of the family is encouraged to send specimens of cottage handicraft or other industrial work done in leisure hours, other than that which belongs to a man's own trade. Prizes are offered to the wives of cottagers for home-baked bread, plum cakes, fruit and jam tarts, jam, &c. It does not appear to be necessary that the prizes be of large amounts, at the same time they should be high enough to encourage competition. Such an exhibition as this has recently been held in connection with the Warwick Amateurs' and Cottagers' Horticultural Society, which took place in the exhibition buildings at Warwick on the 29th ult. This department was managed by a committee of ladies, a few of whom formed themselves into a jury for the purpose of inspecting the exhibits and making the awards. At Warwick, notwithstanding this was only the second exhibition of such industries, a large number of articles, especially in the way of needlework, were shown; and the stands appeared to interest the company greatly. Some managers of flower shows might doubtless be disposed to look upon such an addition to their exhibitions in the light of a startling innovation, but it is a matter of high practical importance, and in the case of cottager exhibitors, it is well, while the head of the family is encouraged to till and keep his cottage or allotment garden to the best of his ability, that the female members of the family may also be stimulated to rise to a higher level of excellence in regard to domestic pursuits. Some of the goods are ticketed according to their value, and sales take place, though, as in the case of plants, &c., the exhibits are not removed until the close of the shows. The practice appears to be a beneficial one, and worthy of wider application. *R. D.*

**Royal Horticultural First-class Certificates.**—There is something ludicrous in the way in which some hardy herbaceous plants, after having been for several years common both in nurseries and private gardens where such plants are cultivated, and having been rejected by some and retained by others, at last find their way to a committee of the Royal Horticultural Society, and are rewarded with a First-class Certificate as novelties. I always look at the record of certificates given, in the hope—a forlorn one—of sometimes finding something new; and not unfrequently I see that plants which I have long discarded as worthless have been honoured by a certificate, though I freely admit both that people have a right to differ in taste, and that difference of soil and climate may make a great difference in the merit of a plant. In illustration to what I have said, I read on page 152 of the *Gardeners' Chronicle* that at a meeting of the Royal Horticultural Society, on July 28, three, and only three hardy herbaceous plants received First-class Certificates. The first is called Dracocephalum virginicum album. I presume the plant meant is the white variety of one of the many forms of Physostegia virginiana (Asa Gray, *Synoptical Flora of North America*, vol. ii., part 1, p. 383). The best garden form of this very polymorphous plant, of which I have had, including the so-called white, four distinct forms, is figured in Sweet's *British Flower Garden*, tab. 93, as Dracocephalum speciosum. A white variety of this form has been distributed from the nurseries of Messrs. Dickson, of Chester, and Messrs. Sutton, of Reading, and probably others, for the last five years, and is certainly in many Cheshire gardens. If this is the plant intended—and I think it can be no other—I certainly should not call it of first-class merit. But however this may be, it should at any rate have been certified under its right name, which is Physostegia virginiana var. speciosa flore-albo. The second plant is Campanula Hendersoni. This is a garden hybrid between C. carpatica and probably C. pyramidalis, which I, and many of my gardening friends, have cultivated for at least six years. It has also been commonly offered in nursery catalogues during that time. It flowers so freely as almost to simulate a biennial habit, and is easily lost, so that few nurserymen will be at the trouble of keeping it. It had begun to get rather scarce when it recently reappeared from Ireland as a novelty under the name of C. Tymonsi, by which name it will probably receive another certificate in a few years more. Lastly we have Helenium pumilum, one of the many forms and names by which H. autumnale has for long been offered to us. If it had been a novelty, a better name than pumilum might have been found, as it grows in good soils more than two feet high. I consider it a fairly good garden

plant, though some of the visitors "cannot admire those horrid yellow Daisies with round buttons in the middle of the flower." It entails, too, a good deal of weeding, as it runs about the bed like the garden variety of Anemone japonica. At any rate it has no claim at all to be considered a novelty in gardens *C. Wolley Dod, Edge Hall, Malpas, August* 1. [It is right to say that the plants are certificated, not necessarily as novelties, but if they are shown in good condition, so as to take the fancy of the committee, and have not previously been certificated, they receive an award by vote of the members present. In the case of the Helenium the ordinary form was shown for comparison with the new variety, and the latter was so far superior that it obtained an award which probably the original plant would not have gained. *Reporter.*]

**A Specialist's Garden.**—Aim high throughout is a good maxim in gardening, and the more it is exercised the more evident is the corollary, Aim at a limited highest. Colonel Powell, of Drinkstone, near Bury St. Edmunds, intends that Orchids, Roses, and Grapes should be the specialties of his garden. Mr. Palmer, his gardener, carries out his wishes, so that they really are remarkable even in these days of testing and competition. It is a bad time now of course to look over Orchids. The gem of the Drinkstone collection—I mean of those in flower—is the rare Sobralia xantholeuca. The plant there is probably one of the largest in the country, and is still continuing to make vigorous growths. The three sepals are of a light cream colour, the petals, two in number, are of a similar tint, but much lighter; the labellum is canary shading down to pure white at the edges, the surface is wavy, and the rim charmingly crimpled. Dedrobium Devonianum is subjected to cool treatment, and flowers and prospers well. Mr. Palmer, who knows Cornwall well, and its more favoured spots, such as the Fal valley, suggested that Epidendrum vitellinum majus might perhaps be grown without any artificial heat at all in that county. Have any of your correspondents tried? A plant of Odontoglossum pulchellum was carrying two well-developed seed-pods. The little Heaths and Ferns which grow up from the sphagnum moss are left, and care is even taken to insert various little things, such as Streptocarpus biflorus. It would be well if this kind of thing were more frequently done, and also to try and tame little Jenny Wrens to flit about the plants. In a cool fernery, unheated, I believe, Nertera depressa is extremely well grown on pillars of slag, stone, or clinkers. The secret appears to be to bed the plants on moss. It is a great mistake to coddle Todea pellucida; it will even bear being frozen. *C. A. M. C.*

**What is a "Border Carnation?"**—As I have hitherto understood, a border Carnation is planted out permanently during winter in a bed or border, and flowers the succeeding summer. I have read carefully the description of the splendid collection of Messrs. Veitch in the *Gardeners' Chronicle* and your contemporaries, but have since been informed these most desirable city flowers were housed during the winter, and would therefore [not be "border Carnations" in the ordinary acceptation. I do not make this reference—if true—to in any way detract from the splendid show of them at Chelsea, but to draw attention to a point that would probably be a *sine quâ non* towards attaining the same success in most parts of the British Isles, as every Carnation will not equally succeed permanently planted out. *W. J. M., Clonmel.*

**The Rating of Nurseries.**—I was pleased to see an account of the Finchley rating case in the *Chronicle* last week. As this is a matter of importance to market growers round London—and, indeed, everywhere they are situated in Local Board districts—it is a good opportunity to fix the principle, and make it known to the gardening world. I may say that our Board have decided not to appeal, although it may perhaps at some other time arise in another part of the country. The points that might be remarked upon are, first, the illogical contention that glasshouses whenever in the form of vineries or greenhouses are not part and parcel of a market-garden or nursery ground and neeessary adjuncts thereto; secondly, the unfairness of such places contributing to the general district rates, which are used solely for sewerage, curbing, lighting, &c., in an equal manner as dwelling-houses. In my own case the nett annual value is arrived at—as indeed in all assessments—in the same manner as dwelling-houses, and it must be unfair for them to contribute equally while the benefits are unequal. *Peter E. Kay.*

# Reports of Societies.

## INTERNATIONAL HORTICULTURAL EXHIBITION: Antwerp, August 2—6.

This great gathering of horticulturists, which was intended to be—as its title designates—an international affair, but which in reality was an exhibition of the horticultural treasures of the Netherlands, with an insignificant contingent from France and Germany, forms a portion of the greater International Exhibition of Antwerp which was inaugurated in May last. This last is, perhaps, as regards completeness, one of the best which has been held in Europe, and in so far as the machinery productions of Belgium stand unequalled, so the gardening exhibits are thoroughly worthy to to be associated with them. As is well known, the large trade establishments of Ghent, Antwerp, Haarlem, and Liège, possess unrivalled collections, especially rich in Palms, Cycads, Anthuriums, Crotons, and Dracænas; and we found these fine plants brought out in great numbers, and either exhibited as decorative objects, without being intended for competition, or else were shown for honours. Notwithstanding the choicest groups of foliage plants, &c., was the property of a lady at Antwerp, and Madame Le Grelle D'Hanis, and the next best came from M. Vander Wouwer of the same town. The flowering section of the show was perhaps its weakest side, the late season of the year having fewer first-class flowering plants to compare with the months of May and June—Lilies, Pelargoniums, zonal and Ivy-leaved, Orchids, tuberous Begonias, and Carnations, forming the bulk of these. Other flowering plants, which appeared occasionally in competing and other groups, consisted in many instances of species which it is unusual to find in our less varied if more brilliant collections, and which will be noticed in their proper place. We may perceive from this that our Continental brethren are by no means so gregarious as we, as any plant which has a decorative value, and which may be improved by culture, is pressed into the service of the gardener. There is one matter in which the gardeners there might take a useful lesson from the converted practitioners here, and that is in the matter of training their plants. We noticed the same stiff and unnatural system of tying-in closely all the shoots so as to make formal-looking balls, balloons, pyramids, &c., that for so many years appeared the best of all possible methods among English gardeners. Given a lot of tight-laced plants and place them almost as contiguous as it is possible, and an arrangement exists that is anything but pleasing to our taste. Foliage plants seldom need much attention in this respect, and so escape the ill-treatment meted out to the others, and it must be confessed that here the Continental growers excel.

### New Plants introduced into Belgium since 1882.

The 1st prize for these, a Gold Medal, given by the King, was won by MM. Jakob-Makoy & Co., nurserymen, Liège; the group consisted of the following:—Dieffenbachia Regina, a native of Colombia, 1883, the leaves dark green, with paler markings over the larger part; Dieffenbachia Jenmani, from British Guiana, 1884, dark green foliage, with blotches of pure white on each secondary rib—the habit is distinctly climbing; a useful decorative plant; Nidularium acanthocrater, Brazil, 1884—the inflorescence is rosy-red, with leaves short and broad; Kæmpferia Gilberti, East Indies, 1882—a pretty sub-stove shrub with lanceolate foliage of green margined with white; Philodendron Sodiroi, Ecuador, 1883, having a cordate leaf of light and dark tints of green, the habit in the plant seen being dwarf and compact; Croton Witterianus, Dutch Indies, 1885—dark green leaf entire, above ordinary size, possessing a yellow midrib, and same coloured blotches—it is a distinct-looking species; Alocasia Van Houttei, Indian Archipelago, 1883, with leaves cordate, the leaf-stalks light green, with a marbled appearance; Alocasia Sanderiana, Indian Archipelago, 1884, with sagitate foliage, the midribs and secondary ones being tinged greenish-white—the leaves are coarsely dentate, the plant is showy and striking, but not altogether pleasing; Alocasia Bernardi, Borneo, 1885, with large sagitate leaves, the ribs of which are all coloured white; Leea amabilis splendens, Borneo, 1884, with dark green, serrate, lanceolate foliage of a bronzy green and narrow white markings on the midrib; Cryptanthus Regeli, Brazil, 1885, a Bromeliaceous plant with marbled foliage light and dark green, the margins of leaf being spiny; Brocchinia demerariensis, British Guiana, 1885, also a Bromeliad, with foliage long and broad, boldly channelled—a striking plant; Piper ornatum, Malacca, 1885, described in *Gardeners' Chronicle*, August 1, 1885; Carludovica rubricaulis, New Granada, 1885, foliage long, entire, of a cheerful tint—the plant was young, and the foliage too little characteristic; Aralia Kerchoviana, South Sea Islands, 1883, an elegant small-growing species, with palmate foliage, the leaflets being of considerable length and serrated at the edge; Hoplophytum robustum fol. var., a Bromeliad, with recurved foliage on which are longitudinal green and white bands—a pretty plant that will become a favourite when plentiful; Schismatoglottis decora Wittiana, Borneo, 1885, a dwarf tropical herb with greyish-green marbling on the leaf; Dichorisandra Sieberti, Brazil, 1884, foliage obtuse lanceolate, of dark green with broad bands of greenish-white running longitudinally—a distinct plant of some merit; Pandanus discolor, India, 1884, has foliage of a dark green tint, light brown on the underside, and in young plants seems of considerable length—the edges are serrated as in Pandanads generally; Selaginella cognata, India, 1884, of arboreal habit when not a climber, fronds dark green and much divided when young—a pretty species; Philodendron Maurei, Eucador, 1883, cordate foliage, darkish green with light markings.

M. Louis van Houtte, Ghent, was awarded the 2d prize for twenty-five new plants, consisting of the following:—Alocasia Van Houttei, a robust example, with foliage 2½ feet by 2 feet; Selaginella grandis, 1883; Heliconia metallica, a plant with Canna-like foliage, bronzy in colour, with midrib brown; Schismatoglottis crispata purpurea, 1883, a stove herb with leaf greyish-green in the centre, the margin being of a lively green and the habit dwarf; Anthurium splendidum, 1883, with foliage cordate-pustulate, of two shades of green; Alocasia Regina, a striking plant of a grey metallic lustre on the upper surface, ribs of dark green, leaf-stalk bright green with thinly-scattered black points, the under-surface of the leaf being of a crimson colour—an acquisition of much merit; Dieffenbachia magnifica, 1883, of robust habit, leaf green, with numerous white blotches; Ardisia picta, 1885, a plant too young to speak with confidence of: the leaves are silvery-green in centre and on the margin, whilst the rest of the leaf is bronzy-green; Gymnogramma schizophylla var. gloriosa, 1885, a graceful fern; Anthurium Gustavi, with immense foliage at least 3 feet by 2 feet, and leaf-stalk of 1½ inch in diameter, which is corrugated: the leaf is of a green colour; Tillandsia Eeckhautei, marbled green foliage, the central portion of the plant being violet-rose; Pritchardia grandis, 1885; Phœnix gracillima, 1884, an elegant Palm; Alsophila Beccœ, a species with fronds long and slender, colour dark green; Tillandsia hieroglyphica, with marbled foliage—a handsome species; Pandanus D'hæni, a dark green variety, dark green foliage, with mealiness on the lower surface of leaf. Some of the plants shown by M. Van Houtte were found in M. J. Makoy's collection, and were there described. M. Aug. van Geert, Ghent, showed likewise a collection of new plants, almost similar as regarded species and varieties to those mentioned previously. Other than those we may name Encephalartos Thielickei, Transvaal, 1885, an imposing-looking plant; Tillandsia Pasluchoffiana, Brazil, 1885.

For flowering or non-flowering plants introduced for exhibition into Belgium, but not yet in commerce, shown by MM. Jakob-Makoy & Co., were Alocasia Closoni, Cryptanthus Lubbersi, Dieffenbachia gemmata, Eugenia elegantissima, Hoplophytum robustum foliisvariegatum, and Schismatoglottis Watteana, all being introductions of the present year. MM. Makoy & Co. took the 1st prize for a collection of three plants of recent introduction, but not yet in commerce, consisting of Anthurium loricatum, Colombia, 1885; Kæmpferia spectabilis, India, 1885; and Schismatoglottis rotundifolia, Borneo, 1885.

For a collection of twelve species of New Palms, shown by nurserymen, M. Aug. van Geert took the 1st prize, and M. D'hæne, Ghent, the 2d. In the first were Thrinax graminifolia, Phœnix graminifolia, P. hybrida, a robust growing species; Calamus calocarpus, an elegant Palm, with spiny leaf-stalk; Williamsi speciosa, Cocos flexuosa, Licuala grandis, broad entire foliage, at least in the young state; Kentia Massangeana, Pritchardia grandis, Acanthophœnix Houtteana, a plant of an elegant pendulous habit; Phœnix Andersoni, of similar habit to the preceding, but with numerous leaflets. M. D'hæne was the winner also of the 1st prizes for a collection of twenty Palms, and for a collection of twelve Palms—good examples of cultivation. Zamia tonkinensis, a slender, light green-coloured Cycadaceous plant; and Pandanus D'hæneï were exhibited as new.

In a class for new plants not as yet in the Belgian trade, we noticed Maranta Arriatii, shown by MM. Jacob-Makoy & Co., with slender, narrow foliage of greyish-green, 6 inches in length and 1 inch wide, the habit of growth apparently low; Dieffenbachia aureo-variegata, a white-blotched leaf, one-half the leaf being sometimes white, and the other green. And among plants remarkable for their foliage was a Clivia with distinctly creamy variegation on the foliage; and in the same class was Phormium tenax roseum pictum, the variegation being of pleasing character; Croton Prince Baudouin, Tradescantia alba vittata, Begonia M. De Cock, Areca Bausei variegata, Dracæna Veitchii aureo-variegata, with white-striped foliage. Of open-air plants of a notable character shown was Picea pungens, of Californian origin, the needles of blue-grey, and habit very compact, not to say stunted, but the specimens having been grown in a pot, the style of growth could not be ascertained with certainty.

FERNS, NEW AND RARE,

Of these, the prizes for which fell 1st to M. Van Geert, Ghent, and the 2d to Messrs. Wallem & Son, there were Adiantum dolabriforme var. obovata, with slender, wiry black frond-stalks, the pinnules oval, and arranged at wide distances apart; Pteris ternata, a small, upright grower; Gynotheca Raddiana crenata, of robust habit, fronds of much substance, of a dark green colour; Osmunda javanica, Adiantum rhodophyllum, Davallia fijiensis plumosa, and dense habited species, with thick hairy rhizomes running on the surface of the soil; Hæmadictionum marginatum, a coarse-fronded species, the pinnæ being quite 9 inches in length and 2 inches in width, the total length of frond being 6 feet; a variety of Pteris serrulata named Ouvrandi, the fronds of which are often crested—it is a distinct and pretty kind; Platycerium Hilli, a Fern differing from the other Elkhorn species by the fronds being of abnormal height; and, lastly, Adiantum cuneatum strictum.

ORCHIDS.

Of these plants three collections were shown, and if the plants, taken as a whole, were smaller than we are accustomed to see here, yet they were well grown and flowered and exceptionally clean. The best groups were not staged for competition, but one or two smaller groups were so entered.

In the non-competing groups, among which that of M. Peeters, Brussels, was specially remarkable, plants of the following were noticed:—Odontoglossum vexillarium Lehmanni, O. Alexandræ, O. luteo-purpureum, O. Alexandræ Trianæ, with two spikes; many Cypripediums, as Stonei, with eight blooms; Curtisi, Morganiæ, which is the first plant having flowered in Belgium; selligerum superbiens Veitchi, with six flowers expanded; niveum, Argus, and a few other of not so recent introduction. Cattleyas were not in any abundance, exhibited but few blooms, and consisted of C. gigas—a very rich form of it, guttata, bearing a splendid bloom-spike; Gaskelliana, of which in one collection there were four examples; and Loddigesii. There were several plants of Lælia majalis, so rarely seen in collections; a good piece of Oncidium, Lanceanum, and O. macranthum.

The rare Phalænopsis Esmeralda, the flowers of deep rosy-purple, small, but set in numbers on a long slender spike. Of Saccolabiums were remarked Blumei and B. majus; a nicely flowered plant of Dendrobium Dearei, carrying about a dozen of its snow-white flowers; five or six plants of Disa grandiflora were distributed in the group, lightning up the paler tints of the other Orchids capitally. The second-best group contained an over-abundance of Odontoglossums, and seemed to be the favourite of the judges, although the award was finally given to the one we have just mentioned. Odontoglossum, shown by M. Vuylsteke, numbered sixteen species; of these there was a fine piece of O. Stewartianum and O. odoratum, and the seldom seen O. Lindleyanum. Acineta Humboldtii had three beautiful spikes of its massive rich brown flowers, and was really the best plant in the collection; Dendrobium formosum giganteum and Cattleya Sanderiana and C. gigas, together with Disas, as in the other group.

In a competitive group were noticed some very large Vandas, shown by M. Cannart d'Hamale, as suavis, Veitch's variety, with two fine spikes of bloom; Linden's variety of V. suavis, 8 feet in height, bearing also two fine spikes; and V. insignis with two spikes—all these plants being remarkable for healthy foliage development. An Oncidium superbiens was well bloomed, it having two flower-spikes two yards in length, smothered with its diminutive brown and green blossoms; O. phlegiferum had nine spikes of its yellow, brown, and green blossoms; and a Cattleya Mendelii had four flowers of very large size and good colours, open.

The 1st prize for twelve species of Cypripediums was awarded to M. Hye-Leysens, Ghent, consisting of prettily bloomed specimens of C. Stonei, C. Veitchianum, C. Lawrenceanum, C. marmophyllum, C. Roebelini superciliare, C. Ashburtoniæ, C. barbatum, C. selligerum, and C. Parishii, &c.

NEPENTHES AND SARRACENIAS.

These were well shown by M. Louis van Houtte, who took the 1st prize for twelve excellent baskets, the plants carrying generally abundant pitchers. Extra fine were N. Outramiana, N. Hookeriana, N. Dominiana, N. intermedia, perhaps the finest plant in the group; N. Mastersiana and N. Wrigleyana; equal 1st being M. P. F. Boutmans, Lille, whose best were N. coccinea, N. rubra, N. maculata, N. Stewartiana, N. Morganiæ, N. robusta, and N. compacta. M. P. F. Boutmans took the 1st prize for a collection of Sarracenias and Dionæas—a good representative collection of plants of small size; MM. Jacob-Makoy & Co., Liege, being 2d.

M. Alex. Dallière, Ghent, showed a nice collection of sorts of Nepenthes, which were arranged in a small octagonal glass house; but although the arrangement was a good one, he failed to secure a prize, owing to the paucity of pitchers on his plants.

EUPHORBIACEÆ, PROTEACEÆ, AND ARALIACEÆ.

Crotons were largely shown. For fifteen plants, Madame Le Grelle D'Hanis, of Berchem, took the 1st prize, and Messrs. Wartel Brothers the 2d. It was remarked that these plants were wonderfully well grown, but were deficient in leaf colour, the green tint predominating. The sorts in the first-named exhibition lot consisted of the following: — Rosea picta, ovalifolia, President Chirceau, Morti, one of the best when well done; magnolifolia, also very bold, fine foliage, yellow and green; Baroness Rothschild, and Massangeana, the two latter being the highest coloured of the collection. For six specimens, M. D'Hæne was 1st, and Messrs. Wartel Brothers 2d. Of Araliaceæ, fifteen specimens were shown by M. D'Hæne.

MARANTAS.

These plants were shown abundantly, as is the case in most Continental exhibitions, and were uncommonly well grown by all those who exhibited. The 1st prize fell to Madame Le Grelle D'Hanis, whose twenty specimens it would be difficult to match in our country. The species and varieties were Kerchoviana, M. Kegeljaniana, 6 feet across; fasciata, Roseo-picta, Selosi, Wagneri, Berchemiana, a distinct, narrow-foliaged variety, grey-green in colour; Ignea, 4 feet by 5 feet, a very fine specimen; and M. Porteana.

DRACÆNAS.

These plants were far better coloured and as well grown as the Crotons, both being specially cultivated in Ghent and Belgium generally. In most cases the plants were furnished with foliage to the ground, but in some instances they had suffered from want of space or too great distance from the glass.

For twenty distinct varieties, Messrs. Wartel Brothers were placed 1st, M. De Duvivier 2d, and M. L. van Houtte 3d.

GENERAL COLLECTIONS.

For the best collection of fifty species and varieties of plants, flowering or non-flowering, there was an immense group in one corner of the great hall, where the most important exhibits were arranged. The 1st prize was deservedly earned for this group by Madame Le Grelle D'Hanis, of Berchem. Amongst the plants, all of which space forbids us to name, was one of the finest specimens in Europe of Licuala grandis, a fine plant of about 3 feet high, with unblemished foliage; Philodendron crassifolia, Latania rubra, and Cattleya speciosa; many fine Palms, Cycads, Musas, Heliconias, Marantas, Crotons, &c. The group was arranged lightly, and with judgment, so that the proportions of each plant were fully seen. M. Moens, of Lede, took the 2d prize for a group of plants of much smaller size, but equally choice; Tillandsia tessellata, Dracæna fragrans variegata, Cycas siamensis, were beautiful examples. M. De Hemptinne, Ghent, was 3d; in this group were also many fine things.

In the nurserymen's class for the same number and description of plants M. Louis van Houtte was 1st, the group of decorative plants of large size and superb cultivation, containing the choicest species and varieties found in any European nursery. Anthurium Veitchii was a magnificent specimen, the leaves being immense; Licuala grandis, a much larger plant than Madame Le Grelle D'Hanis; Sphærogyne latifolia, very beautiful dark foliage, the young leaves being pink; Croton Hanburyana, Dieffenbachia splendens, grand dark foliage with bright green spots; Alocasia Thibaut, Schismatoglottis Robelini, a very fine piece; Pothosi acaule, a very large Maranta zebrina, and numbers of superb examples of Palms, Zamias, Ficus, Crotons, &c.

Madame Le Grelle D'Hanis had twenty-five species of ornamental foliage plants, taking therewith the 1st prize; the 1st prize in the nurserymen's class going to M. D'Hæne for fifteen species; M. De Beucker, Antwerp, being 2d.

For twenty-five plants (specimen), with coloured or variegated foliage:—1st, M. L. van Houtte; the plants shown were not remarkable for large size—we noticed Maranta picturata, Dracæna Lindeni, Croton Imperator, Diffenbachia magnifica, Phyllotænium Lindeni, a splendid specimen; the pretty Alpinia vittata, white and green leaves; Pothos aurea, and Tillandsia fenestralis; M. D'hæne was awarded 2d prize for a collection but little behind that of the 1st.

*(To be continued.)*

## LIVERPOOL HORTICULTURAL ASSOCIATION: Aug. 1 and 3.

THE summer show took place on the above days, in the grounds of Sefton Park. Two very long tents, besides others of lesser size, were brought into use, and here were brought together a very creditable lot of plants, fruits, and flowers. The Crotons and the fine-foliage plants of C. W. Neumann, Esq., were superb, and the Ixoras and Allamandas from W. H. Watts, Esq., were examples of no ordinary culture. The cut Roses were very fine, and, since the greater part had travelled for very long distances, were very fresh, and highly admired. In the fruit classes a little falling off was observable in the quantity, but the quality made amends for any slight deficiency in this respect. The weather on the opening day was very fine and pleasant, and a large number of visitors entered the show grounds.

Taking the classes somewhat seriatim, for twelve STOVE and GREENHOUSE plants (six foliage and six flowering), C. W. Neumann, Esq., Allerton (W. Mease, gr.), was 1st. For foliage we observed Latania borbonica, Croton Weismanni and Queen Victoria, grand masses, 6 feet by 6, superb in colour and form; also C. Disraeli and nobilis, less in size, but of fine colour; Gleichenia Mendelii. Flowering plants comprised Clerodendron Balfourii, Bougainvillea glabra, Erica Ne Plus Ultra and æmula, and Stephanotis grandiflora. Messrs. J. Cypher, Cheltenham, were 2d, with, among others, Croton majesticus, very well done; Kentia australis and Forrestiana, Ixora Pilgrimii, grand heads; Dipladenia amabilis, Erica Irbyana and Paxtoni, 3 feet across; and Anthurium Andreanum.

For ten stove and greenhouse plants, W. H. Watts, Esq., Wavertree (Mr. A. R. Cox, gr.), was well to the front with choice and well-grown examples of Croton Victoria, Dicksonia antarctica, Alocasia macrorhiza variegata, Ixora Dixiana, with over 200 heads of bloom; L. coccinea superba, with sixty, and I. regina with forty-three plants of exceptional merit; Allamanda Hendersoni, covered with bloom, and Statice Bulcheri, with ten large spikes. 2d fell to J. H. Gossage, Esq. (J. Jellicoe, gr.), Wootton, who had a grand Pritchardia pacifica and Vinca alba in good form; 3d, B. Hall, Esq. (A. Crosbie, gr.), Wavertree: in this group a good plant of Croton Mooreana was staged.

For six stove and greenhouse plants in bloom, Messrs. J. Cypher came in 1st, showing Alamanda nobilis with thirty fine trusses, Dipladenia amabilis with forty flowers, Ixora regina, thirty trusses, Erica ampullacea Barnesii, tricolor major, and Phœnocoma prolifera Barnesi. Very close came C. W. Neumann, Esq., with fine plants of Clerodendion Balfouri, 4 feet through; Ixora Hendersoni, Erica tricolor Wilsoni, and E. ampullacea Williamsi, Bougainvillea, scarcely at its best, and a small Dipladenia.

With four stove and greenhouse plants in bloom, W. H. Watts was 1st, and the same exhibitor was 1st with six stove and greenhouse in 12-inch pots; nice examples were to be seen in this group of Calamis ciliaris, Croton nobilis and Disraeli, Kalosanthes Dr. E. Regel, Allamanda Hendersoni, and Ixora coccinea superba.

For one stove plant C. W. Neumann was 1st with Authurium Andreanum. H. Drysdale, Esq. (G. Buller, gr.), was 2d with Allamanda Hendersoni; 3d, Mr. A. Johnson, with a similar plant.

For one greenhouse plant, J. Cunningham, Esq. (T. Gowan, gr.), was placed 1st with a grand plant of Kalosanthes, very effective and well done; C. W. Neumann being 2d, with Erica Irbyana.

For eight FINE-FOLIAGE PLANTS, C. W. Neumann, Esq., was again to the front, showing grand examples of Crotons, Prince of Wales, 6 feet high, and as much through Countess, Morti, grand colour and fine in form; Weismanni, 6 feet by 6; Areca lutescens, and Latania borbonica. 2d, Mrs. A. Johnson (C. W. Waterman, gr.), having Cycas revoluta, Alocasia Lowi, very good; Croton Weismanni and Alocasia macrorhiza variegata, a very fine specimen. Six fine-foliage plants was awarded to F. H. Gossage, Esq., who had Maranta Veitchii and Dracæna Veitchii, good; J. Brancker, Esq. (T. Foster, gr.), was 2d. Three Palms were awarded to Mrs. A. Johnson, who had a nice Cycas Stevensoni and Areca lutescen, the 2d falling to R. Coltart, whose plants were Areca lutescens, Seaforthia elegans, and a Thrinax.

For eight exotic FERNS, Mrs. Horsfield (Mr. G. Rhodes, gr.) succeeded in getting 1st with well-grown examples of Dicksonia antarctica, Alsophilla Moorei, Davallia Mooreana, 5 feet across; Dicksonia squarrosa, a nice compact plant, with three dozen fronds; 2d, W. H. Watts, Esq., whose best plants were Gleichenia dichotoma and Davallia Mooreana; 3d, W. B. Baring, Esq. (J. Hurst, gr.). For six Ferns, J. Cunninghan, Esq., was 1st, showing good plants of Adiantum farleylense, Davallia Mooreana, Gompholobium subauriculatum, with fronds 5 feet long; Gleichenia microphylla, Pteris scaberula, and Adiantum Veitchii; 2d, Mrs. A. Johnson, in whose collection was a large specimen of Microlepia hirta cristata. In the class for three Filmy Ferms, W. Holland, Esq. (W. Moss, gr.), was 1st with Todea superba and pellucida, and Trichomanes radicans; the same forms being shown by J. Brancker, Esq., who was placed 2d. Hardy Ferns were shown by Mrs. Barnsley, J. Brancker, and Mrs. A. Johnson, and prizes awarded in the order in which the names occur. Good plants of Athyrium, Lastræa, Polystichum, and Onoclea were amongst the things shown, but none of very large dimensions. Lycopodiums were shown by J. Brancker and Mrs. A. Johnson, the former winning with good plants of Wallichii, Wildenovii, caulescens, Mastersii, umbrosa, and dichrous.

Ericas were not numerous, only two exhibitors appearing in the class for four, the 1st prize falling to C. W. Neumann; the 2d to Messrs. J. Cypher.

Four lots of four Orchids were staged, Mr. C. W. Neumann being placed 1st with C. Gaskelliana with several blooms; Thunia Marshalliana, with seven heads; Saccolabium Blumei majus, with four spikes; and Cypripedium Lawrenceanum, with three blooms. Messrs. J. Cypher were 2d, with small but clean plants of Cattleya Dowiana, Cypripedium Stonei, and C. Parishii. W. Holland was 3d, in whose group was a good plant of Galeandra Devoniana and Oncidium crispum.

For one Orchid, Mr. A. Johnson was 1st, with a fine plant of Cattleya Leopoldi; J. Brancker with Cattleya crispa, was 2d; S. Walker, Esq., 3d, with Dendrobium infundibulum. A capital plant of the rare Zygopetalum Sedeni was shown by the latter gentleman, having a spike with five beautiful flowers.

The Fuchsias were numerous and good. Plants of 6 to 8 feet were shown by several of the exhibitors. For six T. Drysdale was 1st, followed closely by R. Fleming & Sons, nurserymen, Maghul, Liverpool; the 3d falling J. Hughes, gr. to H. McIver, Esq.

Three Fuchsias, confined to amateurs, were shown by W. H. Watts, Esq., H. McIver, and W. B. Bowring, Aigburth, and were successful as their names appear.

The double and single zonal Pelargoniums were in excellent condition. For six single zonals R. Fleming & Son were 1st, with plants just 3 feet across, full of bloom. Here we noticed John Gibbons, Mrs. W. Paul, Caxton, Madame Vaucher, and Lucy Bosworth. 2d, Mrs. Horsfall; 3d, J. Lewis, Esq., Aigburth (J. Busland, gr.) With three zonals J. Cunningham was 1st, W. C. Clarke 2d, and J. Lewis 3d.

The doubles were shown by J. Cunningham, who again was 1st, R. Fleming & Sons 2d, and W. B. Bowring 3d. These made a very striking and important feature in one of the tents.

Tuberous Begonias were moderately well done. Being bad things to travel several had evidently suffered some. what in transit. With six W. B. Bowring was 1st

With three W. H. Watts was 1st, C. W. Neumann 2d, and W. C. Clarke 3d.

With Caladiums C. W. Neumann, who was the only exhibitor, was 1st for six, showing well grown examples of Chantini candidum, Prince Albert Edward, Luddemanni, Auguste Lemoine, and Bicolor magnifica.

Six Coleus were shown by A. Johnson, who was 1st, having well shaped plants of compact growth ; J. Lewis 2d, and H. McIver 3d.

Gloxinias were shown by W. S. Taylor, Esq., who was placed 1st ; Mr. Watts 2d, J. Cunningham 3d.

Cockscombs and Achimenes were also well shown by the latter exhibitor, who won in both classes.

C. W. Neumann was 1st, with eight large plants and good varieties ; W. B. Bowring 2d, with good plants also.

Circular groups of miscellaneous plants were shown by C. W. Neumann, W. H. Watts, and F. H. Gossage, and were placed in the order in which their names appear. Similar groups were arranged by nurserymen, and here Messrs. R. P. Ker & Sons had a very effective group, made up in their best style ; 2d, Mr. F. Francis, Wavertree. The Liverpool Nursery Company (Mr. J. Cowan) had five large groups of plants of Roses and Liliums, and others of mixed character ; these were well done, and very useful in the exhibition ; a large mass of Dendrobium Parishii in bloom was reared in the centre of one group, and a D. Dalhousieanum, with many spikes of flowers, stood up above the plants over another group. Many table plants were shown, the best six coming from F. Harrison, Esq. (T. F. Fleetwood, gr.), Mr. Watts and Mr. A. Johnson coming 2d and 3d.

The cut flowers were numerous and very fine.

Roses

were exceptionally good. For forty-eight cut blooms, Messrs. Harkness & Sons, Bedale, Yorkshire ; Messrs. Cocker & Son, Sunning Park Nursery, Aberdeen ; R. Mack & Sons, Rose Nursery, Catterick Bridge ; and T. B. Hall, Rock Ferry, staged magnificent stands. After much deliberation the prizes were awarded in the order the names appear, the latter two being equal 3d. For twelve Tea and Noisettes, T. B. Hall was placed 1st, Messrs. Harkness and Sons 2d, and Messrs. Perkins & Sons, Coventry, 3d. With twenty-four Roses, T. B. Hall again won, the 2d falling to A. Tate, Esq , Woolton. Messrs. Mack & Sons were 1st for twelve, and H. J. Robinson 2d. Twelve Roses, any dark variety,—The 1st went to Messrs. Mack & Sons, 2d, to Messrs. May, 3d to Messrs. A. Dickson & Son, Belfast, each stand being composed of Alfred Colomb. Twelve blooms, one light variety, was taken by Messrs. Cocker & Sons, with Merveille de Lyon ; Messrs. Mack & Sons 2d, with Baroness Rothschild ; and Messrs. A. Dickson & Son 3d, with La France. For the best arranged box of Roses, A. Sale, Esq., was successful, Mr. T. B. Hall coming a good 2d.

Cut stove and greenhouse flowers were shown by Mr. C. W. Neumann and Mr. J. Lewis, who were 1st and 2d for twenty-four trusses—Mr. W. H. Watts and Mr. R. Coltart securing similar honours in the class for twelve trusses.

Hardy herbaceous plants were well shown by Mr. C. W. Neumann, Messrs. J. Dickson & Son, and Mr. J. Lewis. In these stands I observed Lilium Harrisii, testaceum, canadense, pardalinum, Achillea, eupatorium, ptarmica fl.-pl. ; Alstrœmeria aurea, Telekia speciosissima, Geum coccineum, fl.-pl. ; Carnation Annihilator, and numerous others. Mr. J. Cypher was 1st with two bouquets, Messrs. Perkins & Sons 2d, and Mr. G. Downs 3d. For one bouquet, Mr. B. Hall was 1st, Mr. T. Robinson and Mr. H. Mercer, 2d and 3d. With one epergne for dinner-table decoration, Mrs. Barnsley was 1st, Mr. J. Lewis coming 2d, and Mr. J. S. Rogerson 3d.

Fruit.

The fruit was of excellent quality. For eight dishes the Duke of St. Albans (J. Edmonds, gr.) won with Muscats, Black Hamburgh, Pine Melon, Bellegarde Peach, Elruge Nectarine, Figs, and Cherries. 2d, T. H. Oakes, Esq. (J. Ward, gr.), who also showed a very fine lot. With six dishes, A. R. Gladstone (T. Elsworthy, gr.), was 1st, having Black Hamburgh, Muscats, Melon, Peach, Pine-apple, Nectarines, and Figs ; 2d, Duke of St. Albans ; 3d, C. W. Neumann. The Hon. C. H. Wynne (J. Bennett, gr.) was 1st with two Pine-apples, Lord Newborough coming in 2d.

Four bunches of Grapes were shown by J. Evans, Esq. (C. Young, gr.), Prescott, who was 1st, with Madresfield Court in grand form, Foster's Seedling, Black Hamburgh, and Muscats ; R. Pilkington, Esq. (G. Middleton, gr.), was 2d ; Duke of St. Albans 3d. Black Hamburghs were shown by Alderman Rayner, who was 1st ; J. Hargreaves, 2d ; and W. B. Bowring, 3d. Muscats by R. Pilkington, W. G. Holland, and W. C. Clarke, who were respectively 1st, 2d, and 3d. For black Grapes, Black Hamburghs excluded, Alderman Rayner showed grand examples of Madresfield Court, and was placed deservedly 1st, T. H. Oakes 2d, and J. Evans 3d. White Grapes, Muscats excluded.—The Hon. C. H. Wynne showed Duke of Buccleuch in good condition, and was 1st ; S. S. Parker coming 2d, with the same variety ; the Rev. W. Sneyd (J. Wallis, gr.) being 3d.

Splendid Peaches were shown by R. C. Naylor, who was 1st ; and also by the Duke of St. Albans, who was 1st in a similar class for six.

First prizes for Nectarines were taken by the Hon. C. H. Wynne for six, and also by W. B. Bowring for the same number in another class.

For a green-fleshed Melon, Mrs. Horsfall was successful ; Mrs. Patterson securing a 1st place for scarlet-fleshed Melon.

One dish of Strawberries was won by J. Brancker, Mr. A. R. Gladstone, being 1st with a dish of Cherries. For the best basket of miscellaneous fruit, C. W. Neumann, Esq., was 1st, with a very effective lot, Mr. A. R. Gladstone showing also well, and coming in 2d.

Vegetables.

With twelve varieties of vegetables, Colonel Wingfield came well to the front, W. Chambers being placed 2d, and R. M. Biddulph 3d.

In a class for twelve, open to exhibitors within ten miles of Liverpool, C. W. Neumann was to the front, J. Rainford coming 2d, and Sir T. Earle 3d.

With six dishes of Peas R. Pilkington was 1st, Mr. W. Hosker coming in with three dishes.

C. W. Neumann was again in the front place with six dishes of Potatos, the same honour falling to Mrs. J. Rainford with four dishes.

Tomatos were well shown, R. Pilkington being 1st, with three dishes ; J. Brancker 2d, and Colonel Wingfield 3d. The same exhibitors showed one dish of Tomatos, and came in again into the same positions.

Lord Newborough, Colonel Wingfield, and J. Davies showed Cucumbers, and were successful in order as their names appear.

A very fine lot of Vines and Tea Roses in pots were shown by the Liverpool Nursery Company. Good stands of stove plants, &c., were exhibited by Messrs. R. P. Ker & Sons. From Messrs. R. Pearson & Sons came a good stand of zonal Pelargonium blooms. Messrs. John Laing & Co., Forest Hill Nursery, London, showed several stands of cut flowers, including single and double Begonias, in their best form, and also a stand of Hollyhocks, that many were pleased to see. Messrs. F. & A. Dickson, of Chester, had a capital display of mixed stove and greenhouse plants.

Numerous stands were erected about the grounds, exhibiting the many requisites pertaining to horticulture, the summer-houses of Mr. L. Cæsar, of Knutsford, being much admired.

## NEWBURY HORTICULTURAL : Aug. 3.

The exhibition as a whole, notwithstanding the absence on this occasion of two or three prominent and regular exhibitors, was nevertheless highly satisfactory, the large tent devoted to plants alone was well filled in a very effective manner.

The chief classes "open to all England" comprised a collection of six stove and greenhouse plants in bloom, Mr. J. F. Mould, Pewsey, Wilts, was a good 1st ; and Mr. C. Howe, gr. to Sir Richard Sutton, Bart., Benham Park, 2d.

For a collection of six variegated or remarkable foliaged plants, Mr. C. Howe had 1st honours, and Mr. J. F. Mould 2d.

The class for twelve exotic Ferns was well contested, Mr. C. Howe being 1st, and Mr. R. Gammon, gr. to J. Bishop, Esq., 2d.

For six distinct kinds of Kalmias, Mr. J. Davis, gr. to Major Thurlow, secured the 1st prize ; and Mr. R. Gammon 2d.

Fuchsias.—Only two collections were staged, but these were most creditably done—the 1st prize falling to Mr. J. Davis, and the 2d to Mr. R. Lye, gr. to W. H. Kingsmill, Esq.

Two prizes for the best group of plants, 12 feet by 8 feet, quality and taste in arrangement to be considered, brought four competitors, all of which were highly creditable, so much so that extra prizes were added subsequently. Mr. C. Howe was 1st, and Mr. J. Davis 2d, in this excellent class. The class for twenty-four bunches of miscellaneous cut flowers for artistic arrangement brought forth a good display, the premier prize falling to Mr. Phippen, nurseryman, Reading, who also took 1st for six buttonhole bouquets and a bridal bouquet.

Fruit.

In the fruit classes for gentlemen's gardeners, Mr. C. Howe was a very prominent exhibitor ; he had a 1st prize for a collection of eight kinds of fruit—"an excellent lot." His best dishes were very fine—Grosse Mignonne Peaches, Lord Napier Nectarines, Moor Park Apricots, Figs, and a Melon. In the single classes for fruit he also took 1st prizes for the same kind of Peach and Nectarine—both very fine dishes. For three bunches of Black Hamburgh Grapes eight competed, 1st prize going to Mr. Davis for three large well-coloured bunches, rather small in berry ; Mr. Walker, gr. to H. P. Powell, Esq., being 2d, with three somewhat smaller-sized bunches, finely finished, but unfortunately slightly rubbed in transit ; the 3d and 4th lots were also good examples. Muscats brought out theee lots, the 1st prize dish being rather over-ripe, and small in berry ; the 2d lot had fine berries, but not finished ; the 3d lot fine bunches, but insufficiently ripe. In the class for other kinds of black Grapes the 1st prize fell to Mr. H. Brown, gr. to Viscount Exmouth, Belford, with fairly good examples of Black Prince ; and in the other class for white Grapes, three compact bunches of well-finished Foster's Seedling secured the 1st prize. Melons were plentifully shown, but poor in quality. Plums and Green Gages were not numerous, and still unripe ; and the same may be said with regard to dessert Apples. In culinary kinds the samples were more plentiful, but not so large in size as usual. Currants were well represented in all kinds. Some particularly fine reds were shown by Mr. Maker, gr. to A. Waterhouse, Esq , and obtained the first award. Figs were also fine, especially those from Mr. H. Brown, gr. to Viscount Exmouth.

Amateurs.

In the classes for amateurs there was a fine competition, the Fuchsias and Petunias being very good, and the bedding and variegated Pelargoniums and Coleuses from Mr. Charles Midwinter, which secured 1st honours in their respective classes, were excellent. Fruits were not so plentiful, Peaches, Nectarines, &c., not yet being sufficiently ripe. Currants were good. Three prizes offered for competition among the ladies for a group of three vases, stands or dishes, arranged with flowers and foliage for table ornamentation was keenly contested ; ultimately the 1st prize was awarded to Mrs. J. A. Johnston, Doddington. Messrs. Sutton & Sons of Reading offered two prizes for eight kinds of vegetables in baskets. Several competitors staged for these prizes, and Mr. Wm. Pope, gr. to the Earl of Carnarvon, won the premier prize with a very good assortment. In the vegetable classes for mechanics, artisans and cottagers, some very fine dishes were shown, but in many instances the subjects were not so good here as I have seen them on former occasions : doubtless this is accounted for in the lack of rain for so long a period. *G. T. M.*

## CARMARTHEN HORTICULTURAL.

The summer show of the above Society was held in the Market Place on July 30. The exhibits were both numerous and good, and the Market Place presented an unusually gay appearance, decorated with so many choice specimen exotics. Great credit is due to the Secretary for the manner in which the arrangements were carried out.

The competition in the plant classes was very keen. In the class for twelve stove or greenhouse plants the premier prize fell to Captain Phillips, of Penty Park, with a clean well grown lot, including a good Bougainvillea glabra, Allamanda Hendersoni, and some finely coloured Crotons. This collection was closely followed by a good 2d.

In the class for six flowering plants the Penty Park collection was again to the front, the most noticeable plants being Allamanda grandiflora, splendidly flowered ; Anthurium Scherzerianum, and Bougainvillea glabra.

For six plants in 8-inch pots the 1st prize was awarded to J. Bickley, Esq., for a clean, healthy lot.

Two exhibitors staged specimen plants—a large but thinly flowered Stephanotis by C. B. Mansfield, Esq., and a nicely coloured Croton Disraeli by Captain Phillips ; the judges awarding the prizes in the order named.

Selaginellas were not quite so well grown as we have seen them. The best lot was shown by J. Bickley, Esq.

Ferns were well done. The 1st prize for six exotic fell to C. B. Mansfield, Esq., with a magnificent Gymnogramma chrysophylla, Adiantum gracillimum ; 2d, Captain Phillips, his best plant being a well-grown Adiantum farleyense.

The dinner-table decorations were greatly admired, the 1st prize being taken by Mr. W. J. Buckley, with a light and tastefully arranged table.

Some excellent Fruit was exhibited. Splendid Black Hamburgh Grapes were shown by C. B. Mansfield, Esq. ; Muscats were also shown by the same exhibitor. A pair of handsome Queen Pines were exhibited by C. E. G. Phillips, Esq., of Picton Castle, and obtained 1st prize. Collection of fruit was won by C. B. Mansfield, Esq., with good Grapes, Lord Palmerston Peaches, and finely coloured Pitmaston Orange Nectarines.

The show of Vegetables was not large, but some excellent productions were staged. Cottagers were well represented by some highly meritorious exhibits, particularly in the class for window plants.

One of the most noticeable features of the show were the exhibits not for competition, including a large collection of useful plants and cut flowers from the Llanelly Gardens, and some splendid specimen Roses from the Mount Hill Nurseries.

## NORTHAMPTON HORTICULTURAL : August 3.

This Society held its annual summer show on the Bank Holiday, at the usual place, Delapre Park, where, as on previous occasions, there was an immense concourse of people. On the present occasion the general character of the exhibitions which the Society has hitherto had was well maintained, although in one or two departments there was a little falling off, notably in the principal classes for stove and greenhouse plants, and fruit, the latter of which was not forthcoming in such quantities as might have been looked for in a part of the country where doubtless plenty is grown. On the other hand vegetables, which the all but unprecedented parched up state of the ground has made it difficult to produce in presentable condition, were not only shown in unusually large quantities but in excellent order.

In the class for 12 Stove and Greenhouse Plants, six in bloom and six fine-foliage, there were three exhibitors —Mr. Coysh, The Gardens, Newbold Revel, Rugby, taking 1st, his best plants being Lapageria rosea, a well furnished plant, nicely flowered ; Allamanda Henderson a large example, full of bloom ; Ixora coccinea, and Bougainvillea glabra, the latter well-flowered and deeper in colour than it is usually seen. Noticeable amongst the foliage specimens in this group were Croton Weismanni, C. angustifolius, and Cycas revoluta. Mr. Holland, gr. to W. Jeffery, Esq., Northampton, was a good 2d, staging, amongst others, a beautiful plant of Erica Marnockiana, Dipladenia amabilis, Rondeletia speciosa major, and Stephanotis floribunda, the best foliage examples being Latania borbnica and Yucca Stokesii, the latter nearly 6 feet high, and well furnished with large highly coloured leaves.

Ferns

were well shown, the whole of the competing plants being in fresh condition. With six Mr. Holland took the lead, having an even well-grown group, the best of which

were Gleichenia Mendelii, Adiantum Farleyense, and Gymnogramma chrysophylla ; 2d, Mr. Coysh.

COLEUS.

These were forthcoming in beautiful order from Mr. Underwood, gr. to J. Bouverie' Esq., Delapre, who took 1st; 2d, Mr. Holland.

CALADIUMS.

With these Mr. Holland had 1st, staging medium sized plants with stout leaves, that showed no signs of flagging in the way that these plants usually do in the exhibition, but when not grown with enough light and air.

FUCHSIAS.

1st, Mr. Garfirth, gr. to P. Phipps, Esq., Collingtree ; 2d, Mr. Beard, Brington.

ZONAL PELARGONIUMS.

With these the order was reversed, Mr. Beard taking 1st, Mr. Garfirth 2d.

TABLE PLANTS

were very well shown, Mr. Holland being 1st, with a beautiful dozen, in every way suitable for the purpose ; Mr. Cole, gr. to Earl Spencer, Althorp, who was a close 2d, also had a very good lot of plants.

CUT FLOWERS.

Roses were surprisingly well shown, both as to quality and quantity, considering the parching weather we have had, showing in a way that cannot be misunderstood what can be done by good cultivation, even under adverse conditions. With twenty-four varieties, single blooms, Messrs. Perkins & Sons, Warwick Road Nursery, Coventry, were well in front with a beautiful stand, the flowers as large and full of substance as often seen earlier in the season. Mr. Prince, Oxford, who was 2d, also had a very good stand. For twelve, Messrs. Perkins were likewise 1st, here again staging a fine lot of blooms. Twelve Teas.—In this class Mr. W. Jackson, Stagsen Vicarage, had 1st, with fresh young flowers in beautiful order ; 2d, Mr. Prince.

Miscellaneous cut flowers were present in quantity, and in splendid condition, 1st honours for twenty-four bunches going to Mr. Coysh, for a very good collection, which included Ixoras, Dipladenias, Anthurium Andreanum, Stephanotis, Allamandas, and a very fine variety of Cattleya Leopoldii ; Mr. Parker, who was 2d, also had a good lot, mostly stove and greenhouse kinds.

Amongst a number of bouquets some charming examples were staged, Messrs. Perkins & Sons, Coventry, taking 1st, with a very good one, remarkable alike for the colours and arrangement of the flowers ; 2d, Mr. F. Perkins, whose exhibit was also highly commendable.

Table decorations were in great force, occupying almost the entire centre of a large tent. The arrangements were more varied than usual, in competitions of this kind some of the exhibitors still retaining the tall glass stands that once were looked on as the correct sort of thing to use in arrangements of this description ; others using one or three plants, with flowers or Ferns and other foliage ; others again discarding stands and plants, relying wholly on flowers and leaves, with or without fruit. For a table of the ordinary size Mr. Parker, Rugby, was 1st, with a very nice combination of three small Palms down the centre, the base of each furnished with a few flowers and green foliage, and some small glasses with two or three flowers and bits of green each ; Mr. F. Perkins was a very good 2d. On this table plants and stands were dispensed with, the foliage and flowers being arranged in low dishes. 3d, Mr. Coysh.

FRUIT.

With six dishes, Mr. Garfirth was 1st, his best examples being Black Hamburgh and Muscat of Alexandria Grapes and Peaches ; 2d, Mr. H. Collins, Berry Wood. Three bunches of black Grapes.—Here Mr. Cole was well in front with good bunches, very large in berry ; 2d, Mr. Harlock, gr. to Lord Lilford, Lilford Hall. Three bunches of white Grapes.—1st, Mr. Farr, gr. to Sir R. Knightley, Fawsley Park, with Buckland Sweetwater, good bunches, in nice condition ; 2d, Mr. Cole, with Muscat of Alexandria: Dish of Peaches.—1st, Mr. Harlock. For a Melon, Mr. Coysh took 1st, with a nice fruit of Newbold Revel, a scarlet-fleshed variety of medium size ; 2d, Mr. Cole. Six dishes of Apples.—1st, Mr. Harlock ; 2d, Mr. Garfirth.

Mr. F. Perkins exhibited several plants of his new Pelargonium Volonté Nationale alba, a frilled-petalled variety with perfectly white flowers, except the faintest streak of colour in the top petals. It is a dwarf grower, and a profuse floweror ; here, as at several of the leading shows, including the Royal Horticultural at South Kensington, the Regent's Park, and the Crystal Palace, it received a First-class Certificate.

A large and beautiful lot of tuberous Begonia flowers, single and double, were exhibited, not for competition, by G. Edwards, Esq., Leighton Buzzard ; the single varieties, mostly seedlings, were especially fine, in both form and colour, with plenty of size and substance ; they comprised all the shades of red, from the darkest crimson to scarlet, pink, old gold, yellow, and white.

## THE OXFORD UNION CARNATION AND PICOTEE : August 4.

MR. E. S. DODWELL made no empty boast when he promised his visitors a feast of Carnations. His Carnation and Picotee garden, with its Carnation and Picotee houses and stands and frames, containing some 3500 plants, in some 1500 pots, besides beds of seedlings aglow with blooms, is worth a journey to see, but in addition there was an exhibition of great importance. Northern and Southern growers were well represented, and regard being had to the state of the weather—hot, dry, and withering, the quality of the flowers was fine. A tent erected in Mr. Dodwell's garden, at the rear of his Carnation houses, accommodated the flowers. A large number of growers and admirers of the Carnation were present, and during the afternoon many visitors came to see the flowers.

CARNATIONS.

In the class for twelve dissimilar blooms of Carnations, six prizes were awarded, and the awards went as follows :—Equal 1st, Mr. M. Rowall, 36, Manor Street, Clapham, London ; and Mr. Joseph Lakin, Temple Cowley, Oxford, the two stands being so good that it was difficult to separate them, and with one or two exceptions the flowers were very fine. The usual plan in staging twelve blooms is to have them in three lines of four each, and following the old plan of reading from left to right across the box, the flowers were placed as follows :—George, S.B., extra fine ; Black Prince, C.B.; Jessica (Turner), R.F.; Arthur Medhurst, S.B.; Squire Llewellyn, P.P.B.; Annihilator (Jackson), S.F.; Master Fred (Hewitt), C.B.; William Skirving (Gordon), P.P.B.; Mrs. Francis Whitbourn, C.B.; Master Slender, P.F.; Mrs. Austiss, C.B.; and Florence Nightingale (Sealey), P.F.; all the foregoing flowers without raisers' names attached are Mr. Dodwell's seedlings, and so on throughout the report. Mr. Lakin had a very refined lot of blooms of the following :—George Melville, P.F.; John Harland (Adams), C.B.; Henry Cannell, S.F.; Florence Nightingale (Sealey), P.F.; Admiral Curzon (Eason), C.B.; Rifleman (Wood), C.B.; Master Fred (Hewitt), C.B.; Arthur Medhurst, S.B.; Mrs. Symonds, R.F.; Captain Owen, S.B.; Tom Lord, S.F.; and Lord Milton (Ely), C.B. 3d, Mr. B. Simonite, Rough Bank, Sheffield, with a very fine lot of flowers, only just inferior, viz. :—James Douglas (Simonite), P.F.; Master Fred, C.B.; Florence Nightingale (Sealey), P.F., Seedling (Simonite), R.F., very promising ; Tom Brown, S.B.; Dr. Foster (Foster), P.F.; Squire Llewellyn, C.B.; Henry Cannell, S.F.; Mrs. Gorton, C.B.; Seedling, S.F.; Seedling, R.F. 4th, Mr. G. S. Hedderley, Sneinton, Nottingham. 5th, Mr. William Stock, Chesterfield ; 6th, Mr. Bacon, Derby ; a bloom of Mrs. Erskine Wemyss, R.F., in this stand was remarkably good.

In the class for six blooms, dissimlar, there were eight competitors, and Mr. Robert Lord, Todmorden, was placed 1st with a perfect lot of very refined flowers, consisting of J. D. Hextall (Hextall), C.B.; Admiral Curzon (Eason), S.B.; George Melville, P.F.; John Harland, C.B.; John Keat (Whitehead), R.F.; and Sportsman, a sport from Admiral Curzon, S.F. 2d, Mr. W. L. Walker, Reading, with George, S.B.; Sarah Payne, P.P.B.; Martin Rowan, P.F.; Arthur Medhurst, S.B.; John Ball, S.F.; and Master Slender, P.F. 3d, Mr. W. Meddick, Bath, with Dr. Masters. C.B.; Henry Cannell, S.F.; James Douglas (Simonite), P.F.; John Hines, S.B.; Duke of Grafton (Hooper), S.B.; and John Harland (Adams), C.B. 4th, Mr, Thos. Austiss, Brill ; 5th. Mr. Charles Phillips, Early, Reading ; 6th, Mr. William Wardell, Luton ; 7th, Mr. J. Wallington, Basingstoke.

In the classes for single blooms there were a great many flowers, and the judges had a very onerous task in selecting the best. Five prizes were given in each class, as follows :—S.B. 1st, Mr. H. Startup, Bromley, with Fred ; 2d, Mr. R. Lord, with Thomas Austiss ; 3d, Mr. R. Lord, with Rayner Johnson ; 4th, Mr. Tom Chapman, Leicester, with Fred ; 5th, Mr. J. S. Hedderley, with Fred. C.B.: 1st, Mr. W. Rowan, with Master Fred (Hewitt) ; 2d, Mr. W. Slack, with Walter Ware (Ware) ; 3d, Mr. B. Simonite, with James Merrywether (Simonite) ; 4th, Mr. B. Simonite, with Master Fred (Hewitt) ; 5th, Mr. J. Lakin, with Master Fred. P. and P.B.: 1st, Mr. W. Slack, with Sarah Payne (Ward) ; 2d, Mr. Phillips, with Faust (Phillips) ; 3d, the same, with Miss Henderson ; 4th and 5th, Mr. H. Startup, with Harrison Weir. P. F.: 1st, Mr. R. Lord, with Dr. Foster (Foster) ; 2d, Mr. W. Slack, with Dr. Foster ; 3d, Mr. B. Simonite, with Mrs. F. Whitbourn (Simonite) ; 4th, Mr. T. E. Henwood, with President of Corpus ; 5th, Mr. R. Lord, with Dr. Foster. S.F.: 1st, Mr. J. S. Hedderley, with Sportsman ; 2d, Mr. J. Lakin, with Tom Lord ; 3d, Mr. R. Lord, with Sportsman ; 4th, Mr. J. Lakin, with Tom Lord ; 5th, Mr. Hedderley, with Sportsman. R.F. : 1st, Mr. R. Lord, with John Keet (Whitehead) ; 2d, Mr. W. Slack, with a seedling ; 3d, Mr. R. Lord, with Lovely Ann (Ely) ; 4th, Mr. B. Simonite, with Cristagalli, a Lancashire-raised flower ; 5th, Mr. Tom Chapman, with Rob Roy (Girton).

Premier Carnation.—This was George, S.B., one of Mr. Dodwell's finest flowers in the 1st prize stand of twelve blooms, shown by Mr. W. Rowan, who states, it always comes in the best character in his garden at Clapham.

PICOTEES.

In the class for twelve dissimilar blooms there were seven competitors, and six prizes were awarded, as follows :—1st, Mr. Robert Lord, Todmorden, Rose E. Constance Heron (Fellowes) ; P.E. Clara Penson (Willmer) ; Red E. (Princess of Wales (Fellowes), Rose E., Miss Wood (Wood) ; Rose E. Liddingstone Favourite, Red E. Mr. Niven (Niven), P. E. Nymph (Lord), Rose Lady Holmesdale (Holmesdale), Rose E. Julia (Dodwell), Red E., Mrs Gorton (Simonite), Red E. John Smith (Bower) ; and Red E. Seedling. 2d, Mr. J. Lakin, with Red E. Dr. Epps, Rose E. Mrs. Payne (Fellowes), Red E. Mr. Dodwell (Turner), P.E. Zerlina (Lord), Rose E. Royal Visit (Abercrombie), P. E. Her Majesty (Addis), Rose E., Liddingston Favourite, Rose E. Edith D'Ombrain (Turner) ; P.E. Novelty (Matthews), Red E. Mrs. Gorton (Simonite), Rose E. Daisy (Dodwell), Red E. John Smith (Bower). 3d, Mr. M. Rowan, with a very good lot of flowers, having Zerlina, Mr. Dodwell, Nelly, a lovely light rose edge ; Dr. Epps, Thomas William (Flowdy), Evelyn (Hewitt), Mrs, Gorton, Edith D'Gmbrain, Attraction, Constance Heron. Nymph, and Mrs. Payne. 4th, Mr. W. Slack, Chesterfield. 5th, Mr. Hedderley. 6th, Mr. T. E. Henwood. In the class for six blooms there were eight competitors and seven prizes. 1st, Mr. John Whitham, Hebden Bridge, Yorkshire, with Edith D'Ombrain, Mrs. Dodwell, Clara Penson, Liddingston Favourite, Miss Horner and Zerlina, a very pretty lot indeed ; 2d, Mr. T. Austiss, Brill, with Purple Prince, Liddingston Favourite, Baroness Burdett-Coutts, Dr. Epps, Edith D'Ombrain, and a Seedling ; 3d, Mr. W. Hovell, Headington Hill, Oxford, with Mrs. Payne, Dr. Epps, Tonnie (Dodwell). Medium Purple E., Fanny Helen (Niven), Edith D'Ombrain, and Zerlina ; 4th, Mr. W. L. Walker, Reading ; 5th, Mr. W. Bacon, Derby ; 6th, Mr. C. Phillips ; 7th, Mr. H. Startup.

As in the case of the Carnations, so with the Picotees, five prizes were awarded in each of the three divisions for single blooms, as follows :—Heavy Red E.: 1st, Rev. J. P. Sharp, with a seedling ; 2d and 3d, Mr. J. Lakin, with Dr. Epps ; 4th, Mr. T. Austiss, with Emma (Austiss) ; 5th, the same, with William Brazil (Austiss). Light Red E.: 1st, Mr. Startup, with Thomas William ; 2d, Mr. C. Phillips, with the same ; 3d and 4th, Mr. Hedderley, with Mrs. Bower. Heavy Purple E. : 1st, Mr. B. Simonite, with Mrs. Niven ; 2d, Mr. T. Austiss, with Polly (Simonite) ; 3d, Mr. C. Phillips, with Zerlina ; 4th, Mr. J. Lakin, with Baroness Burdett-Coutts ; 5th, Mr. W. Slack, with Muriel. Light Purple E. : 1st, Mr. J. P. Sharp, with a seedling, and 3d, with the same ; 2d and 4th, the same, with a seedling ; 5th, Mr. J. Lakin, with Ann Lord. Heavy rose-edge : 1st, Mr. J. P. Sharp, with Mrs. Sharp (Sharp), a seedling, heavy scarlet edge, of a very bright and soft shade of colour, pure ground, very fine petal ; and 2d, with the same ; 3d, Mr. J. Lakin, with Edith D'Ombrain ; 4th, Mr. J. P. Sharp, with a seedling ; 5th, Mr. Tom Chapman, with Seedling No. 1. Light rose-edge : That charming variety, Liddingston Favourite, took all the prizes in this class ; Mr. R. Lord was 1st, Mr. T. Austiss 2d, 3d, and 5th, and Mr. J. Lakin 4th.

Premier Picotee.—This was Nettie, a lovely light rose edge, raised by the late Mr. George Rudd, and shown by Mr. M. Rowan.

SELF, FANCY, OR YELLOW GROUND CARNATIONS AND PICOTEES,

Some beautiful flowers were shown in this class, especially in the way of scarlet and crimson grounds, flaked with maroon. There were six stands of twelve blooms, and the six prizes were awarded as follows :—1st, Mr. J. Lakin, with Captain Owen, a rare flower ; Florence, a pale buff self ; Jaira, Mrs. Pratt, Mrs. Dodwell, Mrs. Gamlin, Sir B. Seymour, Huson Morris, and seedlings. 2d, W. Read, gr. to A. H. Dodwell, Esq., Oxford, with Huson Morris, King of Yellows, Mrs. Holiday, and some very fine seedlings ; 3d, Mr. W. Sharp ; 4th, Mr. B. Simonite ; 5th, Mr. T. Austiss ; 6th, unnamed. With six blooms, Mr. J. A. Wallington was placed 1st out of ten competitors with Governor, Florence, and four seedlings—one a beautiful yellow ground Picotee, edged with mauve ; 2d, Mr. W. Meddick, with Red Rover, Robert Lord, a rare flower ; Mrs. Coleman, John Bailey, and seedlings ; 3d, no name ; 4th, Mr. C. Phillips ; 5th, Mr. Walker, Reading ; 6th, Mr. Startup.

PREMIER SELF OR FANCY.

This was a superb bloom of Huson Morris, shown by A. H. Dodwell, Esq. It has a rich rosy-scarlet ground, flaked with maroon.

First-class Certificates of Merit were awarded to light rose-edged Picotee Mrs. Sharp, shown by Mr. J. P. Sharp, Birmingham ; and to fancy Picotee Ada, yellow ground, with a tricoloured edge, rose, mauve, and pink, very pretty and of fine quality. It was raised and shown by Mr. J. A. Wallington, Basingstoke.

## SOUTHAMPTON : August 1 and 3.

THE Royal Horticultural Society of Southampton, on the dates above named, well sustained its reputation as being one of the best shows in the South of England. Competition in most classes was keen, while the exhibits were so close in merit as to cause the judges no small amount of trouble to justify their awards. The spacious tent, wherein was displayed the principal plants and groups of plants for effect, viewed from the entrance, reflected great credit on the management and way in which they were disposed. It is easily understood what plants there were when such men as Messrs. Cypher, Rann, Tudgey, and Mould put forth their utmost in friendly rivalry. Local growers, too, are making great strides in this branch of horticulture, particularly in the case of Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, and Mr. N. Blandford, gr. to Mrs. Haslefoot, Moorhill, West End, Southampton. The former had a collection of twelve plants, which were awarded 1st honours in the class devoted to gardeners only ; in this case freshness was remarkable, combined with size in their individual merits. The latter staged one of the best examples of Allamanda Hendersoni that has ever been seen ; it was quite 6 feet in diameter, clothed with healthy foliage down to the top of the pot, and had over 200 fully developed blooms, besides a great number of buds.

Fruit classes were weakest in point of numbers, but the quality was extra good, particularly in those devoted to Grapes.

Vegetables were perhaps not quite so good as other years, and no wonder, when the lengthened period of

drought is considered, but still they would be hard to beat anywhere, those which took the lead. A few words of praise are quite deserving to the committee, who have striven hard to encourage horticulture in their district, and provide exhibitions worthy of the place, they have had many drawbacks to contend with, such as bad weather and sites to hold their shows; now that they have secured Westwood Park on a long lease, let us hope great success is in store for them in the future. To the indefatigable Secretary the thanks of the exhibitors are specially due for the way in which he manages everything for their convenience, evidently he understands that exhibitors have a large share in making a show a success in a horticultural point of view, therefore he acts accordingly to procure a good result, which goes a long way towards encouraging the general public to appreciate the treat provided.

### Stove or Greenhouse Plants.

For twelve, six to be in bloom and six foliage, Mr. J. Cypher, Cheltenham, was an easy 1st, with grand specimens—Cycas circinalis, grand in colour, and extra large size; Latania borbonica, so often seen that it is needless describing it; Croton Sunset, 6 feet in diameter, beautifully coloured; Encephalartos villosus, Phœnocoma prolifera Barnesii, 5 feet across, in the pink of condition; Allamanda nobilis, freely bloomed; Dipladenia Brearleyana, rich in colour; and a freely bloomed plant of Erica Thomsoni, were some of them. Mr. C. Rann, gr. to J. Warren, Esq., Handcross Park, Crawley, Sussex, was 2d, with noble foliage plants, but rather weak in flowering plants; a magnificent plant of Statice Gilbertii, 6 feet over, was a centre of attraction in this group, and a very fine one of Croton interruptus, and a very healthy specimen of Latania borbonica were some of his leading plants; 3d, Mr. Tudgey, the Nurseries, Waltham Cross.

For the same number of plants, confined to nurserymen, Mr. J. F. Mould, Pewsey, Wilts, was 1st. Cycas revoluta, Gleichenia rupestris, Dipladenia Brearleyana, and Erica insignis were some of his best. Messrs. J. C. & H. Ransom, Shirley, was 2d; and Messrs. Oakley & Watling, Southampton, 3d.

For the same quantity, confined to gardeners only, Mr. E. Wills was an easy 1st, with particularly fresh and healthy specimens of Cycas revoluta, Latania borbonica, Verschaffeltii splendida, Statice profusa, 6 feet; Kalosanthes coccinea, of same dimensions—very freely flowered, and a richly coloured plant of Phœnocoma prolifera Barnesii; 2d, Mr. N. Blandford, gr. to Mrs. Hasletoot, Moor Hill, West End. Croton Disraeli, richly coloured, Allamanda Hendersoni, previously named, was in this collection, and a good specimen Bougainvillea glabra formed part of his group; Mr. J. Amys, gr. to the Hon. Mr. Eliot Yorke, Hamble Cliff, Netley, was 3d.

For nine miscellaneous plants, W. H. Myers, Esq. (gr., E. Molyneux), was a somewhat easy 1st with Alocasia macrohiza variegata, Croton variegatus, Bougainvillea glabra, Trachelium cœruleum; 2d, F. Dalgety, Esq. (gr., Mr. J. Budd), Lockerly Hall, Romsey; 3d, the President, the Hon. H. Crichton, Netley Castle (gr., Mr. J. Reynolds); 4th, Miss Todd, Sidford Lodge, Shirley (gr., Mr. W. Peel).

For a group of miscellaneous plants arranged for effect in a half circle measuring 16 feet, Mrs. Pearce was 1st, with an elegant composition of plants well suited for the purpose, and lightly placed, while the colours were in perfect harmony; 2d, Mr. Ransom, with a group not far behind the first-namsd, just having a little too much colour, caused by a little too free use of Pelargoniuums and Begonias; 3d, Mr. J. Reynolds; 4th, Mr. N. Blandford; 5th, Mr. W. Peel, all of good order.

For a collection of Orchids, space 6 feet by 4, 1st, H. J. Buchan, Esq., Wilton House, Southampton (gr., Mr. T. Osborne), whose collection was composed of choice, well-grown specimens, such as his noted place for this class of plants can produce. The following were some of the best:—Dendrobium Dearii, Cypripedium Veitchii, Oncidium anosum; 2d, Mr. Blandford. Messrs. Oakley & Watling had the best collection of nursery stock in pots, not to exceed 8 inches, followed by Mrs. Kingsbury, Bevois Nursery; Mr. G. Windebank and Messrs. Ransom in the order named.

For six Begonias, Mr. Wills was again an easy 1st; 2d, Mr. Osborne; 3d, Mr. Blandford. Mr. Wills again followed up his previous successes with six Ferns; Mr. Amys 2d; and Mr. Peel, 3d. Fuchsias, double and single zonal Pelargoniums, were staged in goodly numbers by Mr. G. Windebank, Messrs. Ransom, and Mr. Wills, were the leading prize-winners.

For six Celosias, Mr. Amys was 1st with richly-coloured specimens; 2d, Mr. Osborne; 3d, Mr. Wills. Mr. Wills was 1st for table plants

Coleus.—The other prize winners were Messrs. Budd, Thompson, and Amys.

For single specimen Heath.—1st, Mr. J. F. Mould, with a fresh freely-blomed plant of Austiniana; 2d, Mr. Cypher; 3d, Mr. Tudgey.

For specimen Orchid.—1st, Mr. Wills, with Dendrobium formosum giganteum; 2d, Mr. Budd; 3d, Mr. Osborne.

For specimen foliage plant.—1st, Mr. Rann, with Croton Youngii, beautifully coloured, 8 feet over; 2d, Mr. Kingsbury; 3d, Mr. Wills.

Amateurs came out strong in the classes devoted to plants and groups; the principal prize-winners were Mr. Burch, Avenue Hotel; Mr. Betteridge, Bassett; Mr. Chamberlain, &c.

For the best-dressed table for dessert, 8 feet by 4 feet, Mr. Cypher was an easy 1st, with a table almost as near perfection as could be, ; 2d, Mr. J. Chard, Clapham Common, London.

Carnations, zonal Pelargoniums, double and single, were well represented by Mr. Molyneux, Mr. W. Gilbert, Bishop's Waltham; Mr. W. Neville, gr. to Mr. Flight, Cornstiles, Winchester.

For twenty-four blooms of Roses. — 1st, Messrs. Keynes, Williams & Co.; 2d, Messrs. Cross & Steer, nurserymen, Salisbury.

For twelve blooms, Roses.—1st, Mr. C. Warden; 2d, Mr. Neville; 3d, Mr. R. West.

### Fruit.

For eight dishes of fruit, Mr. F. Thompson, gr. to W. Baring, Esq., Norman Court, Salisbury, was placed 1st, with an excellent collection consisting of Grapes—Madresfield Court, large and well coloured; Muscat of Alexandria, large in bunch and berry; Smooth Cayenne Pine, very fine Barrington Peaches, Etruge Nectarines, Blenheim Orange Melon, and Moor Park Apricots; 2d, Mr. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, whose best dishes were Black Hamburgh Grapes, a very large and well ripened Captain Lack's Melon, weighing 11½ lb; Moor Park Apricots, and Queen Pine; 3d, Mr. J. Budd, with good Muscat of Alexandria Grapes and Violette Hâtive Nectarines.

For six dishes, Mr. E. Molyneux obtained 1st honours with Muscat of Alexandria and Madresfield Court Grapes, and Golden Perfection Melon.

For three bunches black Grapes, Mr. Ward was 1st with Madresfield Court, in grand condition, the berries large and carrying a beautiful bloom; 2d, Mr. C. Warden, with Black Hamburgh, well finished samples; Mr. Molyneux was 3d with same variety, equally well finished; 4th, Mr. Thompson, with Madresfield Court. For three bunches of white grapes, Mr. Budd was 1st with very large well-coloured samples of Muscat of Alexandria; 2d, Mr. Molyneux; 3d, Mr. Thompson; 4th, Mr. W. Hills, gr. to Viscount Gort, East Cowes Castle, Isle of Wight, all showing the same variety; for two bunches of black Grapes, Mr. J. E. Axford, gr. to C. M. Shipley, Esq., Twyford, Winchester, was 1st with well finished bunches of Black Hamburgh; 2d, Mr. J. Allen, gr. to J. Bailey, Esq., Ellenfield Hill, Southampton; 3d, Mr. J. Cox, gr. to R. King Wyndham, Esq., Corhampton House, Bishops Waltham; 4th, Mr. Pope—all showing well. For the same number of white Grapes, Mr. Pope was 1st, with Muscat of Alexandria, fine in bunch and berry, only requiring more time to make them perfect; 2d, Mr. Osborne; 3d, Mr. Axford; 4th, Mr. Amys. For single bunch black Grapes, Mr. Ward followed up his previous success with Madresfield Court, again in splendid condition; Mr. Molyneux was 2d, with same variety; 3d, Mr. J. Allen; 4th, Mr. W. Sanders, gr. to J. East, Esq., Longstock House, Stockbridge. For one bunch of white Grapes, Mr. Budd took the card, with an excellent sample of Mrs. Pearson; 2d, Mr. Thompson; 3d, Mr. Sanders; 4th, Mr. W. Ward.

For the best dish of Peaches, Mr. G. Windebank was 1st, with Chancellor, large in size and rich in colour; 2d, Mr. Thompson; 3d, Mr. W. Cotton, Hamilton Nursery.

For the best dish of Nectarines: 1st, Mr. W. Cotton, with Lord Napier; 2d, Mr. Budd; 3d, Mr. Ward; 4th, Mr. Jas. Wood, nurseryman, Newport, Isle of Wight.

Mr. W. Sanders was 1st for scarlet Melon, with Blenheim Orange; 2d, Mr. Ward; 3d, Mr. Axford. For best green-flesh Melon Mr. Thompson was 1st, with Victory of Bath; 2d, Mr. Sanders; 3d, Mr. Cotton.

### Vegetables.

For twelve varieties there were five competitors. Mr. G. H. Richards, gr. to Earl of Normanton, Somerley, Ringwood, was an easy first with Elephant Onion, Autumn Giant Cauliflowers, International Potatos, very fine, Perfection Tomato and Intermediate Carrots as his best dishes; 2d, Mr. W. Sanders, who had fine International Potatos, Leviathan Broad Beans. For nine varieties, the same number of exhibitors staged—1st was awarded to Mr. E. Molyneux, who had fine Giant Rocca Onions, Veitch's Giant Cauliflower, Canadian Wonder Bean as his best dishes; 2d, Mr. J. Allen, with splendid Tomatos; 3d, Mr. J. Axford; 4th, Mr. G. Busby.

For four sorts of Potatos, 1st. Mr. West, gr. to J. R. Wygram, Esq., Northlands, Salisbury; 2d, Mr. W. Sanders; 3d, Mr. Axford; 4th, Mr. Ward. For twelve Onions, Spring, Mr. Allen was 1st; 2d, Mr. Ward; 3d, Mr. Busby; 4th, Mr. Sanders. For twelve Autumn Onions, 1st, Mr. Richards; 2d, Mr. Reynolds; 3d, Mr. Allen; 4th, Mr. Cox. The best brace of Cucumbers was from Messrs. Molyneux, Richards, Amys, and Ward, in the order named. Cottagers staged excellent vegetables, when the long period of drought is taken into consideration.

## Obituary.

James Cutbush.—The announcement of the sudden death of this gentleman will be read with great sorrow. Few men in the horticultural world were better known, or commanded more respect. On Saturday night, August 1, he was present at the distribution of prizes by the Baroness Burdett-Coutts in connection with the Brookfield Horticultural Society, South Highgate, of which the Baroness is the patroness. The Baroness had distributed the prizes and addressed the meeting. Mr. James Cutbush, who with his usual liberality had lent a number of plants for the decoration of the platform, was seconding a motion for a vote of thanks to the officers of the Society, when he was seized with an apoplectic fit and fell forward against those who were sitting near to him. Medical aid was summoned, and Mr. Cutbush, who had somewhat recovered, was removed to his home at Highgate, where, however, he was seized with another fit, and died at midnight. Mr. Cutbush was the head of the well-known firm of W. Cutbush & Son, at Highgate, Barnet, and Finchley, an establishment which ranks among the oldest in the kingdom, having been in existence for more than 180 years, and which has been greatly extended since Mr. James Cutbush assumed their management more than thirty years ago. Heaths and other hard-wooded greenhouse plants such as have gone somewhat out of fashion now-a-days were cultivated by him with great success, and he was one of those by whom the bulb trade, which has now assumed such large proportions, was first developed, and he was the first to exhibit forced bulbs at the London and provincial shows. Mr. Cutbush was not only a successful cultivator, but his large knowledge of plants of all descriptions, his correct judgment and strict impartiality, led to his being frequently called on to give his services as a judge at the leading exhibitions. Mr. Cutbush was in his fifty-eighth year, and was born at Ashford, Kent.

Henry Thomas Ellacombe. — We have to record the death of a venerable archæologist, the Rev. Henry Thomas Ellacombe, Rector of Clyst St. George, near Topsham, Devon, which occurred on Thursday, July 30. The deceased, who was ninety-five years of age, graduated at Oriel College, Oxford, taking his bachelor's degree in 1812, and proceeding M.A. in due course. He was ordained deacon in 1816 by the Bishop of Exeter, Dr. Pelham, and was admitted to priest's orders in the following year by the Bishop of Gloucester, Dr. Monk. Having held for a few years successively the curacies of Cricklade and Bitton, he was appointed in 1835 to the vicarage of the latter parish, which he held till 1850. He afterwards held the rectory of Clyst St. George. Mr. Ellacombe was the author of several privately-printed works on church bells and other historical works, including *The Bells of Devonshire*, *Practical Remarks on Belfries and Ringers*, *The Bells of Exeter Cathedral*, *The Bells of Somerset*, *The History of Clyst St. George*, and *History of the Manor of Bitton*.

To gardeners Mr. Ellacombe will be best known for the large collection of hardy and herbaceous plants which he gathered together and tended with such loving care at Bitton for many years. Mr. Ellacombe began collecting when such plants were in vogue, and, undeterred by the fleeting influence of fashion, he continued their culture during the years when such plants were the subjects of undeserved neglect, and was happy enough to live to witness and enjoy the reaction in their favour. A catalogue which he drew up of the plants cultivated by him shows how catholic were his tastes, and the topographical indications manifest how well he studied the varying requirements of the plants he loved so well. Removal to Devonshire was not suffered to interfere with his gardening tastes, and he repeated at Clyst St. George, so far as circumstances would permit, the collecting and cultivation of plants, retaining his interest in them up to the last. It is pleasant to think of the venerable clergyman cheered and supported through a long and responsible career by his appreciation of matters archæological and botanical, and the numerous friendships with men of congenial tastes and similar pursuits. The pleasure they afforded him was manifest even in his letters, and it is only a short time since we had evidence of the extent to which his mind was influenced by them as a relief from graver matters.

It is pleasant also to remember that the mantle of the father has fallen on the shoulders of the son, and Bitton now, as in the past, remains one of the pilgrimage places for those who love plants, and esteem those who cultivate them for their intrinsic qualities of head and heart.

Plum St. Etienne.—This extremely early and valuable little Plum is comparatively unknown. It ripens somewhat in advance of Rivers' Early Prolific, being in fact the earliest of all Plums grown here. At the present time August 3, the greater portion of the crop on a standard tree, is lying on the ground. The fruit is of a medium size, almost quite round—orange-yellow, with firm sweet flesh like the Orleans class, parting freely from the stone. It is well worthy of cultivation as an early variety, and is described in Hogg's *Fruit Manual*. *A. F. B.*




STATE OF THE WEATHER AT BLACKHEATH, LONDON
FOR THE WEEK ENDING WEDNESDAY, AUGUST 5, 1885.

| Month and Day. | Barometer: Mean Reading at 32° Fahr. | Barometer: Departure from Average of 18 years | Temperature of the Air: Highest. | Temperature of the Air: Lowest. | Temperature of the Air: Range. | Temperature of the Air: Mean for Day | Temperature of the Air: Departure of Mean from Average of 10 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point. | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity Sat. = 100 | Wind: Average Direction. | Rainfall. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| July | In. | In. | ° | ° | ° | ° | ° | | | | In. |
| 30 | 30.10 | +0.35 | 73.2 | 50.0 | 17.2 | 60 8 | — 1.5 | 52.1 | 75 | N. E. E. N. E. | 0.00 |
| 31 | 30 06 | +0.30 | 73 5 | 54 5 | 19 0 | 59 6 | — 2.7 | 47 6 | 65 | E. N. E | 0 00 |
| Aug. 1 | 29 93 | +0.18 | 69.0 | 54 0 | 15 0 | 62.1 | — 2 2 | 49 4 | 68 | N. E. E. N. E. | 0 00 |
| 2 | 29.89 | +0.14 | 71 0 | 53 8 | 17 2 | 59 8 | — 2.5 | 50 6 | 73 | N. E. N. W. | 0.00 |
| 3 | 29 85 | +0.11 | 65 0 | 53 4 | 11 6 | 57 8 | — 4.4 | 49 1 | 72 | N.W. | 0 02 |
| 4 | 29 75 | 0.00 | 72.0 | 48 0 | 24 0 | 59.2 | — 3.0 | 48.2 | 68 | E. E. N. E. | 0.01 |
| 5 | 29 70 | +0.05 | 67. 5 | 52 0 | 15. 5 | 58 2 | — 3 0 | 56.5 | 94 | E. N. E | 0.23 |
| Mean | 29 91 | +0.16 | 70.2 | 53.1 | 17.1 | 59 4 | — 2.9 | 50.5 | 74 | E. N. E | 0 24 |

July 30.—Dull morning, fine and bright afterwards.
" 31. Dull morning, fine and bright afterwards.
Aug. 1.—Dull day.
" 2. Dull day, sun shining at times.
" 3. Dull day.
" 4.—Very fine morning, dull afternoon and evening.
" 5. Slight showers of rain during the day. Thunderstorm at 7 P.M.

LONDON: *Atmospheric Pressure.*—During the week ending August 1, the reading of the barometer at the level of the sea increased from 30.28 inches at the beginning of the week to 30.33 inches by 9 A.M. on the 26th, decreased to 30 26 inches by 5 P.M. on the same day, increased to 30.36 inches by 9 A.M., decreased to 30.24 inches by 1 P.M. on the 27th, increased to 30.36 inches by 9 A.M., decreased to 30.29 inches by 5 P.M. on the 28th, increased to 30.33 inches by 9 A.M. on the 29th, decreased to 30.29 inches by 9 A.M. on the 30th, and was 30.12 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.25 inches, being 0.04 inch higher than last week, and 0.31 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 87°.1, on the 26th; on August 1 the highest was 69°. The mean of the seven high day temperatures was 76°.2.

The lowest temperature was 54°, on August 1; on the 27th the lowest temperature was 58°.5. The mean of the seven low night temperatures was 56°.7.

The greatest range of temperature in one day was 28°.9, on the 26th; the smallest, on the 29th, was 13°.3. The mean of the seven daily ranges was 19°.5.

The mean temperatures were—on the 26th, 72°.2; on the 27th, 69°.9; on the 28th, 61°.9; on the 29th, 60°; on the 30th, 60°.8; on the 31st, 59°.6; and on August 1st, 60°.1; of these the first two were above the average by 10° and 7°.7 respectively, and the rest were below by 0°.3, 2°.3, 1°.5, 2°.7, and 2°.2 respectively.

The mean temperature of the week was 63°.5, being 0°.1 lower than last week, and 1°.2 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 138°, on the 27th. The mean of the seven readings was 127°.5.

*Rain.*—No rain fell during the week.

ENGLAND: *Temperature.*—During the week ending August 1, the highest temperatures were 89°.1 at Nottingham, 89° at Truro, 87°.8 at Cambridge; the highest at Newcastle, 68°, at Sunderland 69°, at Liverpool 74°.8 The general mean was 81°.5.

The lowest temperatures were 44° at Hull, 45° at Leeds, 46° at Sheffield; the lowest at Blackheath was 54°, at Brighton 52°.3, at Plymouth 52°.2. The general mean was 48°.4.

The greatest ranges were 41° at Truro and Leeds, 38°.8 at Cambridge; the smallest ranges were, at Newcastle 18°, at Sunderland 22°, at Liverpool 25°.3. The general mean was 33°.1.

The mean of the seven high day temperatures was highest at Truro, 77°.4, at Blackheath 76°.2, at Wolverhampton 74°.7; and was lowest at Newcastle, 64°.1, at Hull 64°.7, at Sheffield 66°.7. The general mean was 71°.

The mean of the seven low night temperatures was highest at Blackheath, 56°.7, at Brighton 56°.3, at Plymouth 56°.1; and was lowest at Bolton, 51°.5, at Wolverhampton 52°.2, at Truro 52°.3 The general mean was 53°.8.

The mean daily range was greatest at Truro, 25°.1, at Wolverhampton 22°.5, at Bristol 20° 4; and was least at Sunderland, 9°.3, at Newcastle 11°.6, at Hull 12°. The general mean was 17°.2.

The mean temperature was highest at Brighton, 63°.5, at Truro 62°.9, at Plymouth 62°.7; and was lowest at Sunderland 55°.4, at Newcastle 56.5, at Hull 56°.8. The general mean was 60°.5.

*Rain.*—The largest fall was 0.30 inch at Newcastle, 0.21 inch at Sunderland, 0.03 inch at Preston. No rain fell at Truro, Plymouth, Brighton, Bristol, Blackheath, Wolverhampton, Nottingham, Sheffield, Liverpool, Bolton, Hull, or Bradford. The general mean fall was 0.03 inch.

SCOTLAND: *Temperature.*—During the week ending August 1, the highest temperature was 82°, at Edinburgh; at Aberdeen the highest temperature was 68°.6. The general mean was 76°.2.

The lowest temperature in the week was 45°, at Glasgow; at Greenock the lowest temperature was 51°.2. The general mean was 47°.6.

The mean temperature was highest at Paisley, 64°.3; at Leith the lowest was 57°.6. The general mean was 60°.7.

*Rain.*—The largest fall was 0.25 inch, at Edinburgh, and the smallest fall was 0 02 inch, at Aberdeen. The general mean fall was 0.14 inch.

JAMES GLAISHER F.R.S.

## Answers to Correspondents.

ADDRESS WANTED.—The present address of Messrs. Hancock & Gankroger, seedsmen and florists, late of 77, High Friars Street, Newcastle-on-Tyne, is inquired for.

CARNATION: *C. & Co.* It does not seem to differ from the Rose Malmaison, a sport of which several years ago is now in many gardens, but which does not find favour like the old variety.

CYATHEA DEALBATA: *L.* Yes, you might certainly include this among "six exotic Ferns," if nothing is said to the contrary.

INSECTS: *G. H.* The minute white semi-transparent worm-like insects with small black heads (of which we found a number in the earth in your box) have nothing to do with the Eucharis mite; they are the larvæ of a very small midge often seen in greenhouse pots kept too damp (Molobrus, sp.). A pupa of the midge was also found. Water with lime or gas-tar water, or Gishurst fluid. *I. O. W.*—*A. H.* The insect sent is the caterpillar of one of the smaller species of Hepiabus, a "swift" moth. *I. O. W.*

INSECTS ON EUCHARIS: *D. McS.* Your plant is affected with the Eucharis mite: see *Gard. Chron.*, pp. 440, 448, April 4, 1885.

NAMES OF PLANTS: *G. F. G.* 1, Rudbeckia laciniata; 2, Cnicus oleraceus; 3, Anaphalis margaritacea; 4, Thalictrum flavum; 5, Lythrum salicaria, large variety; 6, Malva moschata.—*T. S.* Lilium Leichtlinii.—*H. H. D.* Rosa hibernica.—*Dimmick & Sons.* 1, Commelyna cœlestis; 2, Origanum dictamnus.—*K. S. L.* Acanthus spinosus.—*A. H.* Diplotaxis muralis, variegated. The fungus is the common Stinkhorn (Phallus impudicus).—*Rob.* Desfontainea spinosa, hardy in some places.—*Enquirer.* 1, Carex paniculata; 2, Carex axillaris; 3, Sison Amomum; 4, the American Waterweed (Anacharis alsinastrum); 5, Ranunculus aquatilis; 6, Potamogeton praelongus.—*Delta.* Delphinium Madame Keteleer, not wild.—*Camjee.* A form of Berberis Darwinii.—*F. Gunning.* Valeriana dioica.—*Redwood.* Dracocephalum peregrinum.—*S. W. W.* Your flower is a Dipladenia, we cannot say which one.—*J. J. W.* 1, Morina longifolia; 2, Phyteuma orbiculare; 3, Stachys Betonica; 4, Crepis setosa.

NEW SEEDLING CARNATION: *H. G. S.* A nicely shaped bright orange-scarlet flower, which would be very showy in the border if of good habit.

PEA CHANCELLOR: *Webb & Sons.* A very fine looking Pea, pods very long and well filled—somewhat too old to allow us to judge of the quality. At Chiswick, where we have noted it growing this season, it is well thought of.

STRAWBERRIES: *W. L. & Son.* Your method of culture is, without doubt, the correct one, but it is not new or original; all good growers adopt the same system. The fruit sent is but a poor sample. As for any benefit to be derived from "selecting plants that show a tendency to develope four or five leaflets on a petiole," there can be none except for curiosity. More than twenty-five years ago a selection of the Filbert Pine Strawberry, under the name of "Cinquefolia," was in cultivation; so that your five-leaved selection of Filbert Pine is nothing new.

VINE LEAVES INJURED: *W. B. S.* We regret that we cannot explain the dried and browned condition of the leaves sent. There are no parasites present, either vegetable or animal. Something is probably wrong in your mode of culture, either in ventilation heat, or possibly dryness at roots.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post-Office, Drury Lane, London, W.C.

## CATALOGUES RECEIVED.

WAITE, NASH & CO., 79, Southwark Street, London, S.E.—Wholesale Catalogue of Flower Roots.
CARTER, PAGE & CO., 63, London Wall, E.C., City—Dutch Bulbs and Flower Roots.
LITTLE & BALLANTYNE, Carlisle—Flower Roots.
L. SPATH, Rixdorf, Berlin—Flower Bulbs, Strawberries, Roses, &c.
ANT ROOZEN & SON, Overveen, Haarlem, Holland, and 3, Cross Lane, St. Mary-at-Hill, London, E.C.—Dutch and Cape Bulbs.
ALFRED LEGERTON, 5, Aldgate, London, E.—Wholesale Catalogue of Dutch and other Flower Roots.

COMMUNICATIONS RECEIVED:—J. D. D.- Dr. Bull.—The New Plant Company.—R. Manning, Boston, U.S. Heckford (see our last number, p. 150.—W. W. Heckfield.—Canon Ellacombe.—D. T. F.—G. N.—W. Miller.—C. Rasmo, Innspruck.—R. Cleaver.—C. Webb & Sons. A. C. B.—T. M.—J. G. B.—T. L. M., Guernsey.—J. Douglas.—A. R.—Sutton & Sons.

DIED, July 29, at Pitfold House, Haslemere, GEORGE JACKSON, late of the Nurseries, Kingston-on-Thames.

# Markets.

*COVENT GARDEN, August 6.*

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

LARGE consignments of Grapes and Tomatos from the Channel Islands are now reaching us, and this being holiday week, trade has been quiet, and clearances only made at lower prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | — 2 0 | Lemons, per case | 12 | 0 — 30 0 |
| Cherries, ½-sieve | 4 0 | — 10 0 | Melons, each | 2 | 0 — 3 0 |
| Currants, red, ½-siv. | 3 0 | — 3 6 | Peaches, per doz. | 2 | 0 — 8 0 |
| black, ½ sieve | 4 6 | — 4 9 | Pine-apples, Eng. lb. | 2 | 0 — 3 0 |
| Figs, per dozen | 2 0 | — | — St. Michael, each | 2 | 6 — 5 0 |
| Gooseberries, ½-sieve | 2 0 | — 2 3 | Strawberries, per lb. | 0 | 3 — 0 9 |
| Grapes, per lb. | 0 9 | — 2 0 | | | |

VEGETABLES AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 3 0 | — | Mint, green, bunch. | 0 4 | — |
| Beans, Eng., per lb. | 0 4 | — | Mushrooms, per basket | 1 0 | — 1 6 |
| Beet, per dozen | 1 0 | — | Onions, per bushel. | 6 0 | — |
| Cabbages, per dozen | 1 6 | — 2 0 | — Spring, per bun. | 0 6 | — |
| Carrots, per bunch. | 0 6 | — | Parsley, per bunch. | 0 4 | — |
| Cauliflowers, English, spring, per doz. | 2 0 | — 4 0 | Peas, per quart | 1 0 | — 1 6 |
| Celery, per bundle. | 1 6 | — 2 6 | Radishes, per dozen | 1 0 | — 2 0 |
| Cucumbers, each | 0 6 | — 1 0 | Small salading, per punnet | 0 | — 0 4 |
| Endive, per dozen | 2 0 | — | Spinach, per bushel | 4 0 | — |
| Garlic, per lb | 0 6 | — | Tomatos, per lb. | 0 6 | — 0 9 |
| Herbs, per bunch | 0 2 | — 0 4 | Turnips, new, bunch | 0 6 | — |
| Horse Radish, bun. | 3 0 | — 4 0 | Vegetable Marrows, each | 0 3 | — |
| Lettuces, Cab., doz. | 1 0 | — | | | |
| — English Cos, doz. | 1 6 | — | | | |

POTATOS.—New Potatos are coming very small, and prices range from £5 to £6 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 18 0 | Foliage Plants, various, each .. .. | 2 0 | 10 0 |
| Arbor-vitæ (golden), per dozen .. | 6 0 | 18 0 | Fuchsias, per dozen | 4 0 | 9 0 |
| — (common), dozen | 6 0 | 12 0 | Hydrangeas, dozen.. | 8 0 | 12 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen .. .. | 15 0 | 24 0 |
| Bouvardia, dozen .. | 9 0 | 18 0 | — longifolium, doz. | 9 0 | 18 0 |
| Calceolarias, doz. .. | 4 0 | 6 0 | Lobelia, per doz. .. | 3 0 | 0 0 |
| Carnations, 12 pots .. | 6 0 | 12 0 | Marguerite Daisy, per dozen .. .. | 8 0 | 12 0 |
| Cyperus, per dozen.. | 4 0 | 12 0 | Musk, per dozen .. | 2 0 | 4 0 |
| Dracæna terminalis, per dozen .. .. | 30 0 | 60 0 | Myrtles, per dozen.. | 6 0 | 12 0 |
| — viridis, per doz. | 12 0 | 24 0 | Palms in variety, each .. .. | 2 6 | 21 0 |
| Euonymus, in var., per dozen .. .. | 6 0 | 18 0 | Pelargoniums, per dozen .. .. | 6 0 | 18 0 |
| Evergreens, in var., per dozen .. .. | 6 0 | 24 0 | — scarlet, dozen .. | 3 0 | 9 0 |
| Ficus elastica, each . | 1 6 | 7 0 | Rhodanthe, per doz. | 6 0 | 8 0 |
| Ferns, in var., dozen | 4 0 | 18 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Myosotis, 12 bun. .. | 2 0 | 4 0 |
| Arum Lilies, 12 blms. | 3 0 | 6 0 | Pelargoniums, per 12 trusses .. .. | 0 6 | 1 0 |
| Bouvardias, per bun. | 0 6 | 1 0 | — scarlet, 12 trusses | 0 4 | 0 6 |
| Carnations, 12 bun.. | 2 0 | 4 0 | Picotees, 12 bun. .. | 2 0 | 4 0 |
| — 12 blooms .. | 1 0 | 2 0 | Pinks, var., 12 bun. | 1 0 | 4 0 |
| Cornflower, 12 bun. | 2 0 | 4 0 | Primula, double, bun. | 0 9 | 1 0 |
| Eucharis, per dozen | 3 0 | 6 0 | Rhodanthe, 12 bun. | 6 0 | 9 0 |
| Gardenias, 12 blooms | 3 0 | 5 0 | Roses (indoor), doz. | 1 0 | 3 0 |
| Lapageria, white, 12 blooms .. .. | 2 0 | 3 0 | — coloured, dozen | 2 0 | 4 0 |
| — red, 12 blooms .. | 1 0 | 2 0 | — per doz. bunches | 2 0 | 6 0 |
| Lavender, 12 bunch. | 4 0 | 6 0 | Stephanotis, 12 spr. . | 2 6 | 4 0 |
| Lilium longiflorum, 12 blooms .. .. | 2 6 | 5 0 | Sweet Peas, 12 bun. | 2 0 | 4 0 |
| Marguerites, 12 bun. | 3 0 | 6 0 | Sweet Sultan, per 12 bunches .. .. | 3 0 | 6 0 |
| Mignonette, 12 bun. | 1 6 | 3 0 | Tropæolum, 12 bun. | 1 0 | 1 6 |

## SEEDS.

LONDON: *Aug.* 5.—The market to-day was very thinly attended, and presented quite a holiday appearance. There is rather more inquiry for Trifolium incarnatum: the quality of the new crop is exceptionally fine. In Mustard seed there is no quotable change: small sowing orders come to hand freely. This season's Rape seed is very good, and extremely low prices at present prevail for same. New winter Tares are now offering: opening rates are moderate. Holders of blue boiling Peas have increased their prices as crop accounts continue so bad. Feed Linseed tends upwards. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

There was no business transacted in Mark Lane on Monday, it being Bank Holiday. On Wednesday the lack of demand was not relieved, and with inactivity prices remained unchanged for both Wheat and flour. Barley, Beans, and Peas met a quiet demand at late rates. Maize was steady, with a moderate demand. —Average prices of corn for week ending August 1:—Wheat, 34*s.* 1*d.*; Barley, 27*s.*; Oats, 22*s.* 6*d.* For the corresponding period last year:—Wheat, 37*s.* 6*d.*; Barley, 27*s.* 6*d.*; Oats, 22*s.* 7*d.*

## CATTLE.

At Copenhagen Fields on Monday supplies were in excess of demand in the beast market, and prices consequently ruled against the seller. Sheep realised about the previous Monday's prices, with a steady sale. Prime lambs were the turn dearer, and calves a very dull sale. Quotations:—Beasts, 3*s.* 10*d.* to 4*s.* 6*d.*, and 4*s.* 8*d.* to 5*s.*; calves, 3*s.* to 4*s.* 8*d.*; sheep, 4*s.* to 4*s.* 8*d.*, and 5*s.* 10*s.* 6*d.*; lambs, 5*s.* 6*d.* to 6*s.* 4*d.*—On Thursday the trade for beasts remained very quiet, and late rates were not maintained without difficulty. Sheep and lambs were in fair supply. A rather better inquiry prevailed, and rates, though without quotable change, were steady. Calves were dull and weak. Pigs somewhat dearer.

## HAY.

Tuesday's Whitechapel Market report states that trade was very dull, with moderate supplies. Quotations:—Clover, prime, 80*s.* to 107*s.*; prime second cut, 85*s.* to 107*s.*; inferior, 60*s.* to 75*s.*; hay, prime, 70*s.* to 98*s.*; inferior, 20*s.* to 60*s.*; and straw, 28*s.* to 38*s.* per load.—On Thursday there was a moderate supply on sale. The trade was dull at late rates.—Cumberland Market quotations:—Clover, best, 85*s.* to 105*s.*; inferior, 60*s.* to 80*s.*; hay, best, 85*s.* to 97*s.* 6*d.*; second, 75*s.* to 84*s.*; inferior, 40*s.* to 60*s.*; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The Borough and Spitalfields Markets reports state that harvest work is shortening supplies a little, but they are still quite adequate to demand, which is limited. Quotations:—Regents, 110*s.* to 120*s.*; Magnum Bonums, 110*s.* to 120*s.*; Shaws, 90*s.* to 100*s.*; Early Roses, 85*s.* to 95*s.*; Jersey rounds, 85*s.* to 95*s.*; kidneys, 110*s.* to 140*s.* per ton.

## COALS.

The following are the prices current at market during the week:—Bebside West Hartley, 14*s.* 9*d.*; East Wylam, 15*s.* 6*d.*; Holywell Main, 14*s.* 6*d.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 15*s.* 6*d.*; Hetton Lyons, 13*s.* 6*d.*; Lambton, 15*s.* 6*d.*; Wear, 14*s.*; Binchester, 13*s.* 9*d.*; East Hartlepool, 14*s.* 3*d.*; South Hartlepool, 13*s.* 9*d.*; Tees, 15*s.* 6*d.*; Dowlais Merthyr, 16*s.*


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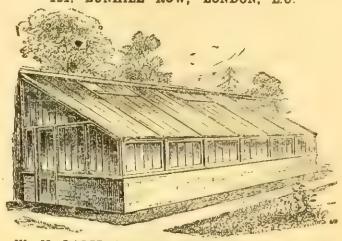
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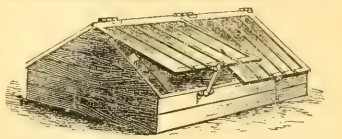
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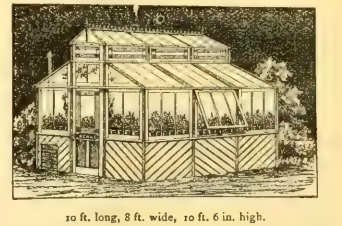
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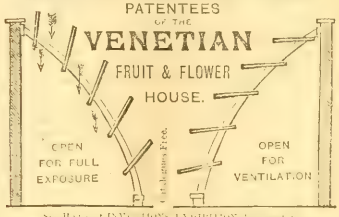
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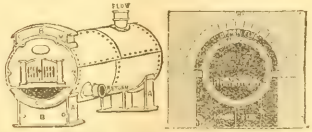

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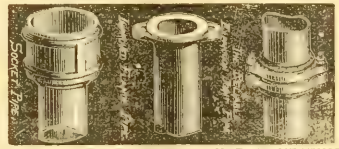
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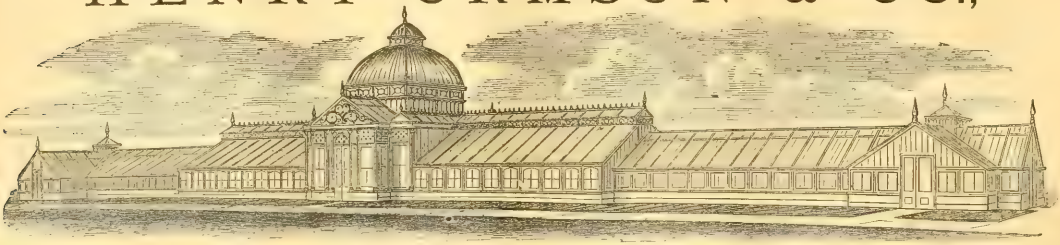
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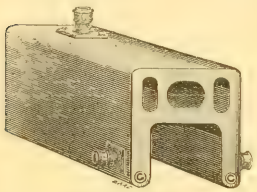


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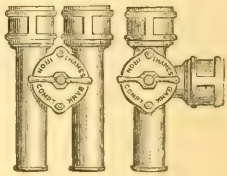
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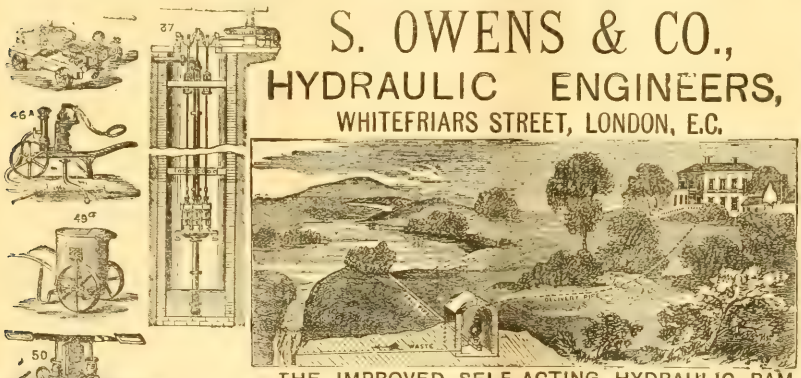
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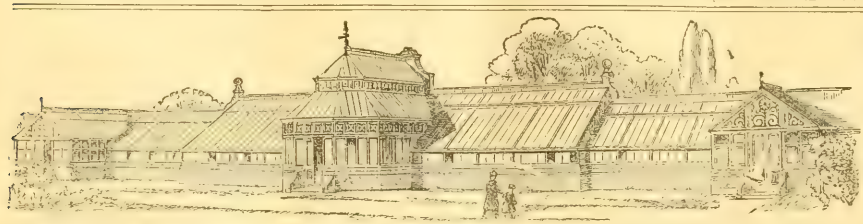
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THE "GOVERNOR" CARNATION.—This beautiful Carnation is now in full flower, and one of the grandest sights of the season. Cut blooms 3s. per dozen, post free. Sample blooms on application. Plants ready in autumn, 1s 3d. each. New PINK, "The Fairy :" plants, now ready, 1s. 6d. each. ROSES in splendid condition : prices on application.—CROSS AND STEER, Salisbury.

PALMS, specially Hardy Grown for Cool Greenhouses and Dwelling-houses.—Latania borbonica and Seaforthia elegans, splendidly foliaged, 20 inches high, 12s. per dozen; sample plants, 1s. 3d.; same kinds, 12 inches high, 25s. per 100; sample 12 for 4s. All packages and parcels post free. Postal orders to GARDENER, Holly Lodge, Stamford Hill, N.

"Irradiating the Present, Restoring the Past."

THE "ORIGINAL" LITTLE BOOK of DAFFODILS.—In great variety, Harvested and Ripened well for best results with WM. BAYLOR HARTLAND'S care and culture, on his Private Grounds, TEMPLE HILL, CORK. Numerous "Original" Illustrations and 130 sorts to select from. The Book, one of the best things yet published, post-free, 1s.

HARTLAND'S Old Established Garden Seed Warehouse, 24, Patrick Street, Cork.

To the Trade.

SEAFORTHIA ELEGANS. — Seed just arrived in fine condition. Write for lowest Trade price and sample to

H. DAMMANN, Jun., Breslau, Germany.

To the Trade.

ZONAL PELARGONIUMS.—8000 for Sale, Surplus stock, all the leading varieties, splendid stuff in 48-pots, about half in full flower, fit for immediate use; the remainder has been disbudded, and specially grown for winter flowering. Price 30s. per 100. Apply

W. MILES, West Brighton Nurseries, Hove.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant. CATALOGUES gratis. KELWAY AND SON, Langport, Somerset.

WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application. It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad.

WATKINS AND SIMPSON, Seed and Bulb Merchants, 23, Exeter Street, Strand, W.C.

Now Ready.

TEA and NOISETTE ROSES, in pots, of best sorts only, in great quantity, and of best possible quality. Priced LIST gratis. A sample dozen, carefully packed for travelling, will be put on Railway on receipt of 13s. 6d.

EWING AND CO., Sea View Nurseries, Havant, Hants.

FOR SALE, 20,000 MAIDENHAIR FERNS, from boxes, good Plants, at 5s. per 100; FERNS in 8 varieties, in pots, at 10s. per 100, or 2s per dozen, sent by post or otherwise.

T. BALDWIN, Edith Nursery, Burchall Road, Leyton.

FOR SALE, Large Specimen PALMS, CYCAS, IXORAS, CROTONS, and BOUGAINVILLEAS. H. TROUGHTON, Nurseryman, Preston.

NEW STRAWBERRIES, "LAXTON'S KING of the EARLIES" and "THE CAPTAIN." Orders for these remarkable New Strawberries, which are again being largely taken up by Market and Private Growers, should be sent at once, and will be executed in strict rotation, as the continued drought will materially limit the supply. Particulars with prices from

T. LAXTON, Seed and Novelty Grower, Bedford.

LOVEL'S STRAWBERRY RUNNERS Strong, healthy, and well-rooted. Sample of Plants, 3d. Price LIST free.

W. LOVEL AND SON, Strawberry Growers, Driffield.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

New Turnip Seed.

CHARLES SHARPE AND CO. have to offer, of crop 1885, their choice selected stocks of TURNIPS for present sowing.

CHARLES SHARPE AND CO., Seed Merchants, Sleaford.

## SALES BY AUCTION.

**Wednesday and Saturday Next.**

BULBS FROM HOLLAND TRADE SALES.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, August 19 and —, at half-past 12 o'Clock precisely each day :—Consignments of first-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, Early Roman HYACINTHS for Forcing, and other BULBS just received from well-known Farms in Holland. Lotted to suit the Trade and other large buyers.

On view morning of Sale, and Catalogues had.

**Thursday Next** (Sale No 6501)

ANGRÆCUM LEONI, in flower.
AGANISIA CYANEA.
TRICHOPILIA, new.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, August —, and (subject to sale) each succeeding day, at 12 o'Clock precisely, a fine lot of ANGRÆCUM LEONI, many in flower or bud. It is a fine novelty, and should be grown in the Cattleya or Dendrobium House, and it is a plant of very easy culture. The leaves are fleshy, and are quite a remarkable feature, standing boldly sideways, and are so arranged as to form a half-circle, in front of which the flower-spikes show themselves. Altogether it is a remarkable Orchid. Also a fine batch of AGANISIA CYANEA, a most beautiful blue-flowered Orchid. Dr. Lindley thus describes it :—"This is a very fine plant with the habit of a Mawallaria, and with flowers as large as those of Odontoglossum Pescatorei. The sepals and petals are blue, paler within the big light bluish purple with pale veins; back and wings of column streaked with red. The blue of the flowers is almost perfectly pure." Also a few plants of a new and very beautiful TRICHOPILIA, ANGRÆCUM SCOTTIANUM, in bud, LÆLIA PRESTANS, CATTLEYA HARPOPHYLLA, C. AMETHYSTINA, LEOPOLDII, INTERMEDIA, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next** (Sale No 6502)

ORCHIDS from BRAZIL. RECEIVED DIRECT.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 20, Three Cases of ORCHIDS just received direct from Brazil, comprising fine pieces of Lælia Perrini, Cattleya Bicolor, C. Labiata, & Harrisoniana, &c., &c.

On view morning of Sale, and Catalogues had.

**The Valuable Collection of Orchids,**

Formed by G. Heriot, Esq., J.P.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on FRIDAY, August 21, at half-past 12 o'Clock precisely, those valuable COLLECTION of ORCHIDS formed by G. Heriot, Esq., of Cholmeley Park, Highgate, who is giving up their culture. Amongst other good things will be found a fine specimen of Vanda Cærulea, fine plants of Cypripedium Sanderianum, C. crista, Trichoglottis fasciata, very rare; Dendrobium cleroden-drum, Angræcum sesquipedale, A. eburneum, Dendrobium, Cattleyas, Odontoglossum Alexandræ, &c., and a magnificent COLLECTION of PHALÆNOPSIS in variety, mostly specially imported by Mr. Heriot.

On view morning of Sale, and Catalogues had.

**Orchids.**

On TUESDAY, August 25, at half-past 12 o'Clock, in the Sale Rooms, Little Cherry Street, Birmingham—a Choice Consignment from Lower Rangoon, Burmah, comprising Selected and In Bud ORCHIDS, specially selected for this sale, including, by permission, the Finest Grand Dark-eye Specimens, from two well-known Gentlemen Amateurs, without reserve.

MESSRS. FLEETWOOD AND GOODEVE, in connection with Mr. Cyril Addenbrooke, Messrs. Shrubsworth, Carder & Co., of Rangoon, the well-known Importers, to SELL by AUCTION, a SPECIALLY SELECTED COLLECTION, as above.

Catalogues shortly from Offices, 42, Cherry Street, Birmingham.

**Dutch Bulbs.—Monday and Thursday Next.**

SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY and THURSDAY NEXT, at half-past 12 o'Clock precisely each day, extensive consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in excellent quality, specially lotted to suit the Trade and other large Buyers. Also 700 White Roman HYACINTHS.

On view morning of Sale, and Catalogues had.

**Wednesday Next. Clapham Common, S.W.**

CLEARANCE SALE of the whole of the CHOICE STOVE and GREENHOUSE PLANTS (unless previously disposed of by private agreement), the property of Mr. Leaf, who has resolved to GIVE UP PALMS, DUCHARIS, DRACÆNAS, MOONEANA, &c., FERNS, GARDEN UTENSILS, LAWN MOWER, ROLLER, TOOLS, STANDS, capital OMNICYCLE (Butler's Patent), and numerous effects.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, Tavistan House, Common, Clapham, S.W. (about half-way between Bedford Road and Wandsworth Road Stations), on WEDNESDAY, August 19, at 12 o'Clock precisely, by order of Mrs. Puckett, who is leaving the locality entirely.

View on Tuesday, Sale Catalogues of Mr. GILYEAT, Head Gardener, on the Premises; and of Messrs. PROTHEROE AND MORRIS, Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

**Friday Next.**

ODONTOGLOSSUM CRISPUM, O. ROSSI MAJUS, O. CITROSMUM, LÆLIA ALBIDA, EPIDENDRUM VITELLINUM MAJUS, ODONTOGLOSSUM CERVANTESII, and other ORCHIDS, in splendid condition, from Messrs. Statterthwaite, Lawson & Co.; also a fine lot of IMPORTED ORCHIDS, and about 150 lots of ESTABLISHED ORCHIDS, from Mr. J. E. Bonny, 55, Downs Park Road, Hackney Downs, E.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 21, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Flowering Orchids.—Special Sale.**

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS in Flower and in Bud will take place on TUESDAY, August 25, for which they will be glad to receive Notice of Entries NOT LATER than WEDNESDAY NEXT.

**Acton, W.**

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Gardens, Shalcross, Horn Lane, Acton, W., on TUESDAY, September 1, at 11 o'Clock precisely, a quantity of well grown GREENHOUSE PLANTS, comprising Roses, Bouvardias, Carnations, Camellias, Azaleas, 1200 named Chrysanthemums of the best sorts; three LAWN MOWERS, GARDEN PUMP, and other items.

May be viewed day prior to Sale. Catalogues had of Mr. RAVENHILL, the Head Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

**Eastbourne.—Dissolution of Partnership.**

UNRESERVED CLEARANCE SALE of the whole of the well-grown stock of STOVE and GREENHOUSE PLANTS by order of Messrs. G. T. Scott & Co., who are dissolving partnership.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Ceylon Hall Nurseries, Eastbourne, on WEDNESDAY, September — and following day, at 11 o'Clock precisely, without reserve, the whole of the well-grown stock, including 1000 PALMS of sorts, amongst which are some fine specimens, 1000 Maidenhair FERNS in 6- and 8-inch pots; 1000 ARALIA INDICA, in 48-, 32-, and 24-pots; 1000 fine plants ARAUCARIA EXCELSA; 2 large FUCHSIAS, large white specimen AZALEAS and CAMELLIAS, for Cutting; 25,000 Golden EUONYMUS, and quantities of other stock too numerous to mention.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

**Whetstone, Middlesex.**

Nine miles from London, and four minutes' walk from Totteridge Railway Station.

IMPORTANT TO MARKET GARDENERS, LAND SPECULATORS, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Davis & Son (in consequence of the failing Health of Mr. Davis) to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, September 3, at 2 o'Clock precisely, in Three Lots :—

Lot 1, comprising the valuable and attractive FREEHOLD MARKET GARDEN, distinguished as The New Lodge Nurseries, Whetstone, N., containing an area of about 4 acres, 34 superiorly built Greenhouses, containing a superficial area of nearly 80,000 feet of glass, and heated by about 20,000 feet of 4-inch piping, and all other requisite appliances for growing plants and produce to the greatest perfection; the whole of the luxuriant and productive Vines are planted out; the substantially brick-built twelve-roomed Residence, three Cottages, Stabling, and numerous other Trade Erections. This Lot will be sold as a going concern, together with the Goodwill of the long-established Business.

Lots 2 and 3 will comprise Two valuable Blocks of eligible FREEHOLD BUILDING LAND, containing a total area of about 13 acres, with commanding frontage to Oakleigh Road, presenting a desirable investment for subdivision into Building Plots.

The Auctioneers would wish to call the special attention of Market Gardeners to Lot 1. The property is in complete working order, and it is indeed seldom that such an opportunity presents itself of securing a first-class going concern under similarly favourable circumstances.

May be viewed. Descriptive particulars, with Plans, may be had on the premises; of Messrs. BERRY, BINNS, AND LINCOLN, Solicitors, 27, Chancery Lane, E.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, E.C.

**Preliminary Notice.—Great Horticultural Sale Week.**

Annual TRADE SALES of Winter Flowering HEATHS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have arranged the ANNUAL TRADE SALES of WINTER FLOWERING HEATHS, GREENHOUSE PLANTS, &c., as follows :—

TUESDAY, September 15, at the BURNT ASH LANE NURSERIES, LEE, S.E., by order of Messrs. B. Maller & Sons.

WEDNESDAY, September 16, at the LEA BRIDGE NURSERIES, LEYTON, by order of Mr. John Bauer.

THURSDAY, September 17, at the BRUNSWICK NURSERY, TOTTENHAM, by order of Mr. John Maller.

FRIDAY, September 18, at the LONGLANDS NURSERY, SIDCUP, by order of Messrs. Gregory & Evans.

Fuller advertisements will appear next week.

Auction and Estate Office, 67 and 68, Cheapside, E.C.

**Regent's Park, N.W.**

The PLANTS, FLOWERS, and contents of Greenhouses, comprising choice Orchids, Palms, Liliums, Chrysanthemums, Carnations, Picotees, Bulbs, and Flowers, various.

MESSRS. H. N. NEWTON AND CO. will SELL the above by AUCTION, at Alpha House, Alpha Road, N.W., on MONDAY, August 17, at 11 o'clock.

On view; and Catalogues ready. Auction Office, 67 and 68, Chancery Lane, E.C.

**Goodwill of Seed Business for Sale.**

FOR SALE, the GOODWILL of the SEED MERCHANT'S BUSINESS carried on by the late Mr. GEO. INGLIS, at Drou, near Cupar Fife, Scotland, for sixty years. The premises are suitable and could be got on Lease. Valuation, Stock, Fittings, &c., to be taken by valuation. If Goodwill not required, may be bought separately. Apply to Mr. GEO. WALLACE, Banker, Cupar Fife, N.B.

Cupar Fife, August 11, 1885.

NURSERY BUSINESS for Sale, comprising about Two Acres of ground, 200 feet deep, a large Brick House and four other Houses, Span-roof, 1720 superficial feet of Glass, well stocked.

For particulars apply T. BRADSHAW, Ravenswood Nursery, Ravenswood Road, Balham, S.W.

**An Opportunity.**

TO BE SOLD, Long LEASE of an ACRE of GROUND, with Four Greenhouses, 5000 feet of Glass—Marechal Niel Roses in two paying Rent. Near London Markets.

A. ABBOTT, Sudbury, Harrow, Middlesex.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. T. THEOBALD AND CO., 419, California Street, San Francisco, California.

**To Nurserymen, Landscape Gardeners, Florists, and SEEDSMEN.**

FOR SALE, an OLD ESTABLISHED BUSINESS, in one of the best suburbs of Birmingham, owing to a very serious accident to the present proprietor. The Nursery contains about 2½ acres, and is well stocked with Shrubs, Trees, and Herbaceous Plants, and Four Glass Houses, Seed Warehouse, Frames, &c., together with a Stall in Market Hall. The above is thoroughly genuine, and will be Sold as a going concern. Possession can be had at once.

Full particulars from FLEETWOOD AND GOODEVE, Auctioneers and Valuers, 42, Cherry Street, Birmingham

TO LET, Small NURSERY GARDEN, with Pits, Houses, and Water Supply. Good neighbourhood. Immediate possession.

CHAS. M. FOOTHT, Marlow, Bucks.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

**To Nurserymen, Seedsmen, and Florists.**

DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER of DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec in each year.

**Rape Seed.**

ENGLISH-GROWN RAPE SEED FOR SOWING.

CHARLES SHARPE AND CO. have the above to offer, of fine quality. Sample and price on application. AGRICULTURAL MUSTARD.

CHARLES SHARPE AND CO., Seed Merchants, Sleaford.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

**Autumn Planting.**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST, ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.

The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

PAMPAS PLUMES, FLOWER of GYNERIUM ARGENTIUM, crop 1885, to be delivered next autumn, as soon as they will leave from California, at 100/. per case of 1000 Plumes, 18 to 24 inches in length; at 125/. per case of 800 Plumes, 24 to 30 inches in length. Free on board of a steamer in the port of New York, U.S. Terms cash. Apply to

Messrs. LEVAVASSEUR AND SON, Nurserymen, Us-y, Calvados, France.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of AGERICAS (Eyeworths and Forget-me-nots), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited.

Trade CATALOGUES forwarded on application.

The ANNUAL SALE by AUCTION will be held on TUESDAY, September 15, at

Burnt Ash Lane Nurseries, Lee, S.E.

**Ferns.—Ferns.—Ferns.**

TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20/- per 100, £9 per 1000.

ADIANTUM LE GRANDE, nice plants, ready for potting on, 15/- per 100.

ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40/- and 50/- per 100.

The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Intending purchasers of DUTCH BULBS are invited to read ANT. ROOZEN & SON'S CATALOGUE for 1885, and see the large saving effected by DEALING DIRECT WITH THE GROWER. The Catalogue, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants, and also particulars as to FREE DELIVERY, will be sent, POST-FREE, on application to them, or to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

BULBS FOR EARLY FORCING.

## B. S. WILLIAMS'

*WELL RIPENED and HEAVY BULBS*

| | Per 100 s. | d. |
|---|---|---|
| ROMAN HYACINTHS ... ... From 5 to 5½ inches in circumference. | 15 | 0 |
| PAPER-WHITE NARCISSUS ... From 5 to 6 inches in circumference. | 10 | 0 |
| DOUBLE ROMAN NARCISSUS From 5 to 6½ inches in circumference. | 10 | 6 |

*EARLY ORDERS SOLICITED.*

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

HYACINTHS, EARLY WHITE ROMAN. —May be had in bloom before Christmas. The best pure White for Forcing. Fine bulbs now ready.

IRIS KÆMPFERI—in about twenty different shades of colour. This grand Japanese Iris is hardly yet known in this country, but should be grown by every lover of flowers. It is by far the largest flower of this family, with most striking colours. We offer well established Englishgrown Roots; also many other varieties of Iris.

IXIA CRATEROIDES — Brilliant Crimson. This is about the most showy of this useful family of Bulbs.

IXIA VIRIDIFLORA—a most uncommon colour amongst flowers — very striking, being a decided green with black eye. Also many other varieties of Ixia, a family which only requires to be more widely known to be grown as largely as the Tulip or Hyacinth.

LILIUM CANDIDUM — the Old White Garden Lily. Fine Bulbs now ready for Planting or Forcing.

NARCISS and DAFFODILS — in great variety—Choice and Common.

SCILLA SIBERICA.— This charming rich Blue variety is now as cheap as the Snowdrop, to which it makes a good companion and Contrast.

SEE 600

WHOLESALE BULB CATALOGUE

for Prices of above, and all other varieties of DUTCH and ENGLISH BULBS. May be had on application.

*WATKINS & SIMPSON.*

SEED AND BULB MERCHANTS,
13 EXETER STREET, STRAND, W.C.

New Hybrid Aloe.

ALOE INSIGNIS.—A very beautiful and highly ornamental Aloe, raised from A. drepanophylla fertilised by A. echinata. Flowers remarkable and beautiful; requires ordinary greenhouse culture. Described and figured in this volume of the *Gardeners' Chronicle*, p. 49, f. 41. Orders received will be sent out later in the season. Every one should possess this plant. Price 3 Guineas.

Also the new plant, THALICTRUM RHYNCHOCARPUM, with graceful Fern-like foliage, very ornamental. Now offered for the first time; referred to in *Gardeners' Chronicle*, vol. xxi., p. 92. Price 1 Guinea.

Also a large Collection of SUCCULENT PLANTS for sale.

THOMAS COOPER, Exotic Nursery, Brighton Road, Redhill, Surrey.

By Special Warrant.

"Superb SEEDS for PRESENT and Later SOWING."

DICKSON'S CHOICEST strains of PRIMULA, CALCEOLARIA, CINERARIA, CYCLAMEN, BEGONIA, and AURICULA, in packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each. Double German WALLFLOWER, superb strain, 1s. per packet. Extra selected Single Dark Blood-red WALLFLOWER, 6d. and 1s. per packet. Also all other FLOWER SEEDS for "Spring Gardening," as well as VEGETABLE SEEDS for Present Sowing. Carriage and Post free. Seeds and Plants of every description. Descriptive Priced CATALOGUES Post-free.

JAMES DICKSON & SONS,
108, EASTGATE ST., CHESTER.

Sow Now for Early Flowering in Spring.

ROEMER'S Superb Prize PANSY SEED.

☞ The best Pansy Seed in the World. ☜

FANCY VARIETIES, saved from named flowers, splendid, mixed, 10s. per ounce, 6d. per packet.

SHOW VARIETIES, saved from named flowers, splendid, mixed, 5s. per ounce, 6d. per packet.

FANCY and SHOW VARIETIES, fine, mixed, 3s. per ounce, 3d. per packet.

ASSORTMENT of 18 splendid distinct varieties, containing each 1 packet, 3s.

CAREFULLY SAVED only from named Exhibition Flowers, of all varieties, splendid, mixed, highly recommended, 2s. 6d. per 1000 seeds, 6d. per packet.

GIGANTIC-FLOWERED SHOW VARIETIES, new and distinct, flowers up to 4 inches in diameter, 5s. per 1000 seeds, 1s. per packet.

GIGANTIC FLOWERED FANCY VARIETIES, very choice collection, 10s. per 1000 seeds, 1s. 6d. per packet.

My Pansies awarded First Prize at Berlin Exhibition, 1874.

For Separate Sorts, see CATALOGUE, forwarded Post-free on application.

FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

AUTUMN CATALOGUE OF FLORAL GEMS,

GRATIS & POST-FREE on APPLICATION

Before ordering elsewhere please send for our Illustrated CATALOGUE. In it will be found *useful instructions to amateurs, enabling them to procure botanical names correctly*, besides much further interesting information.

It is divided into sections, as follows:—

BULBS. In this department will be found many species, new, rare and beautiful, and which are not to be found figured in any other English Catalogue, whilst the choicest popular species, such as Hyacinths, Tulips, &c., will be found exceptionally low, *e.g.*, White Roman Hyacinths, splendid healthy sample, in quantities of 250 and upwards, 5s. 6d. per 100.

FERNS. We are offering some most beautiful specimens of rare and seldom seen species, many of which have been specially collected for us; and as the stock of several is limited we would strongly advise early attention, and thereby avoid disappointment.

ORCHIDS. Hardy Orchids have received our special attention—the result of which is we are enabled to offer many lovely novelties, comparatively unknown here in England. We also offer these in collections at lowest figures possible, purposely to bring these beautiful novelties within the reach of all.

PLANTS. These comprise a list of herbaceous, interesting, curious, and a general collection of rare and other beautiful plants. This section will be found unusually interesting to botanist, &c., in search of "novelties."

SEEDS. We are in a position to place before our patrons complete stocks of all the *newest* and *best* strains, and would respectfully draw the attention of all "amateurs" called to the same.

MISCELLANEOUS. In this section we offer a miscellany of interesting items calculated to please both the professional and the amateur.

N.B. To Amateurs who are in the habit of purchasing Guinea and other Collections.

*Instead of doing so, send for our Catalogue and make out a list, and buy the selection to suit yourself. We supply, from 5 shillings upwards, collections of 12, 24, 50, 100, &c., varieties, if any one of which you feel you could not make out a list, we will be pleased to offer them at one-quarter the price you have been accustomed to pay them, if they pursue the same system.*

VICCARS COLLYER & CO.,
BULB MERCHANTS, &c,
CENTRAL HALL, LEICESTER (where all letters are to be addressed) and
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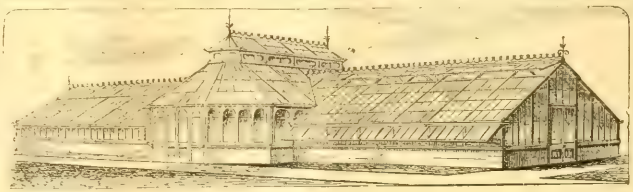


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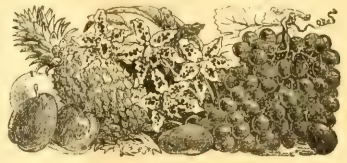
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THE

# Gardeners' Chronicle.

*SATURDAY, AUGUST 15, 1885.*

## NORMANHURST.

IN driving from Ashburnham to Normanhurst, which you may do in a quarter of an hour, you pass from old to new. Mr. Brassey built the house of Normanhurst, and formed the gardens for his son, the present Sir Thomas Brassey, whose taste and judgment, I believe, contributed that which money cannot purchase in laying out the grounds. Two things desirable in landscape gardening are cash and a congenial soil, and both were here available—the great contractor finding the first and Nature the second

A description of Normanhurst should not be in words, but in colours from the palette of a Turner. I was there on a beautiful day, and, having made my call and request, found myself under the brisk guidance of Mr. Allen. The day was lovely. Some foreign birds—emus, I believe—stalked about the park below the terrace, and these, and the gorgeous flowers and exotic shrubs, and the grass-green foliage of the Pinus insignis, which abounds here, gave the place something of a foreign aspect. All the landscape was bathed in the sunbeams of a summer day, that seemed almost too glorious for England. The sea danced blue in the distance as we looked beyond the boundaries of the domain from where we stood, among Oranges, Tree Ferns, Yuccas, and brilliant Crassulas, on the terrace outside the luxurious drawing-room. We seemed to be in fairyland. It was exquisite—equal, I should think, to Tahiti, that wonderful island which Lady Brassey has herself so well described.

The house and grounds of Normanhurst were built and planted in 1866 and following years. Conifers were chiefly used, for the sake of their beauty, suitability to the soil, and their rapid growth; and the result has been that, in less than twenty years, the grounds, though really so recent, are thoroughly well furnished, and do not appear new. The place is situated on the side of a hill, which raises it sufficiently above the general level of the country to afford from the windows a long view of the sunny side, which is always the best side, whether of a Peach or a landscape, and westwards to where the setting sun dips below the Southdowns. The nearest of several villages seen among the trees is Catsfield, just beyond the gates; Ninfield and Battle are further off; and, following the sun from Hastings to Eastbourne, the waters of the Channel are many times visible.

In laying out the grounds, which are now so ornamental, and which within twenty years was a waste or "rough," worth 2s. 6d. per acre, the few scattered Oaks on the site were skilfully mixed with the newly planted specimens of Conifers. No earthworks were required, since this is not a place of "Capability," in the sense that all the hills and valley, must be artificially formed, the site being already extremely undulating and, from the landscape gardening point of view, perfect. The soil is too light, sandy and dry for the growth of Oaks of large size, but it suits the Conifers. All ever-

greens grow here in perfection. The ground was carefully prepared by trenching, and the various trees were thickly planted, which is always desirable for the sake of shelter and nursing, though in some cases, unfortunately, the subsequent work of transplanting the overcrowded specimens is neglected. That, however, has not been the case here, where a great deal of remodelling has been effected by means of material already on the ground.

Some pinetums are distinguished as complete collections, while the arrangement of the specimens is formal, especially on flat ground. Normanhurst, which means Normanwood—and is well called so, since the battle of Hastings was fought hard by, and the district was always well wooded—became a pinetum through the suitability of its soil for the cone-bearing tribe, and the object in view has clearly been the picturesque arrangement of beautiful trees and shrubs. I have rarely wandered in such charming grounds, but, as Lord Beaconsfield says in his *Home Letters*, "descrption is a bore!" and I must be content with giving a list of some of the Conifers, and mentioning the names of a few of the shrubs, with a few facts that may perhaps be useful.

Entering the grounds with a friend, who has not mixed much in the society of exotic evergreens, his astonishment at coming suddenly upon some specimens of Abies nobilis standing in great pomp by the side of the carriage drive in glorious attire of purple and pea-green, recalled the earliest accounts of Mr. Douglas, the collector of the Horticultural Society of London, who introduced it in 1831. He spent several days among forests of this Silver Fir in Oregon, where the tree towers to a height of 300 feet, and during the whole time he "could not cease to admire" this greatest of his discoveries. It is awkward dragging a staunch pointer by the neck when his nose is near a pheasant, and my friend being quite entranced it was hard work getting him past the different specimens of Conifers, especially the noble Cryptomeria japonica, Pinus insignis, and Sequoia sempervirens. He made a set, too, at several Thuias, and especially at Thuiopsis dolabrata, which Thunberg discovered 6000 or 8000 feet high up on the mountain slopes of Central Japan, and which Mr. Veitch and Mr. Fortune introduced to England by seeds sent in 1861. The variegated variety of this very handsome arboreal pyramid, with its cream-coloured branchlets and picturesque habit, grows here vigorously. As my staunch pointer refused to move I began to descant on the services of the great firms who introduced the noble Fir from the furthest West, and this exquisite Thuiopsis from the far East, when he moved towards some more rare game, and presently we overtook a specimen of the silvery variety of the Mount Atlas Cedar, Cedrus atlantica. In such beautiful grounds, when the senses are feasting on objects of delight, who would listen to a lecture? And yet these three Cedars flourishing here—the Deodar, that of Lebanon, and this African one—would form fit subjects. Their respective habitats maintain ranges widely and completely separated, and yet Sir Joseph Hooker has said "that as species the three Cedars cannot be distinguished, and that they must all have been derived from one common stock." An interesting account of the Cedars, whose introduction formed in the last century and since 1831 the epochs in the decoration of parks and shrubberies, will be found in that best of recent works on the Conifers, published by James Veitch & Sons—*A Manual of the Coniferæ*.

We must pass rapidly through the rest of the grounds, noting on the way Abies cephalonica and A. excelsa, which both do well here, as well as the rapid growing red-barked A. Albertiana, growing in numbers 35 feet high, resembling the Hemlock Spruce, but more robust and spreading—a most ornamental tree, or shrub till it becomes a tree—which made my staunch pointer stiffen his tail again. The Wellingtonia grows here so full of foliage that the tree, rigid as it is, becomes almost ornamental. The Escallonia macrantha, with its bright shining leaves and handsome blossoms, is a favourite shrub. There are banks of purple-blooming Menziesia polifolia, or Irish Heath, and of Andromeda floribunda, the soil suiting both of them, while the winter here does not hurt them. Among the many Heaths that do well here some are always in flower. Rhododendrons and Ghent Azaleas form the margin of many a gracefully winding bed of evergreens, and there are similar banks of Gaultheria Shallon.

The Conifers, which were planted, as I have said, seventeen or eighteen years ago, have attained already a height of from 30 to 50 feet. Pinus insignis, planted when 2½ feet high, has now reached 33 feet, and gains about 3 feet a year in good seasons. Athrotaxus selaginoides, which is perhaps as hardy as any of the Athrotaxus, succeeds well here; but the single and double Camellias, turned out of the greenhouse and blossoming well in the pleasure grounds, are still a better test of the mildness of the climate. Thuia gigantea is 30 feet, and Cupressus macrocarpa 37 feet high. Abies Douglasii has run up as quickly towards the sky, but when it overtops the other foliage its shoots are injured by the strong current of the west wind. The best shelter trees here are the Austrian and Corsican Pines, which are planted on the north side, the former making a grand tree when well advanced in growth.

In one of the vineries I was pleased to recognise that beautiful climbing Fern, Lygodium scandens, the very specimen described by Mr. James Hudson in the *Gardeners' Chronicle*, p. 823. It was cut down in February, and has now attained a height of 15 feet, running up the perpendicular rods on the back wall of the vinery. As a contrast a small Banyan tree, trained artificially, with its roots enclosing a bird-cage, offers an example of inelegance brought from Japan by Lady Brassey. Another queer specimen of similar character is a Euphorbia trained into the shape of a Chinese junk! Another specimen plant is a Tamarind, a seedling from a tree planted by Captain Cook in the island where he lost his life, now called Tahiti, the Otaheite of our schooldays.

The grotto beneath the terrace on the south side of the house must not be overlooked. It is a fernery with iron pillars concealed by a covering of coke and cork, planted with Ferns. The roof is of the same sort of blue sandstone of the neighbourhood used in the building of the house. The grotto is lighted with gas and Chinese lanterns, and is opened to the house on *fête* days.

The shrubberies around the house extend to 30 acres, and these and the kitchen gardens, and pits and frames, and houses, are admirably kept by seventeen men. Besides four vineries, a Peach-house, three greenhouses, and a fernery, in one range 190 feet in length, I observed an Orchid-house, several small houses for decorative plants, another for Tomatos, &c., a large cool-house for Chrysanthemums and for hardening off plants in spring, a Rose-house, containing among the many others that fine Tea Rose coloured like the Apricot, and exquisitely scented, Madame Françoise Jamin.

Enthusiasm is a quality not absent from this spot, and in these days when the rage for decorating houses with plants and cut flowers burns so hot that large resources are required to feed the flames, a decorator is employed here whose sole employment is to dress the house with floral tributes from the garden. A neat range of buildings in a convenient position is devoted to a residence for the young men, which in deference to the nationality of the majority of gardeners, we call a bothy, and to potting sheds and a fruit room. A gateway, covered with the Virginian Creeper, and forming the entrance to the court at the back of the house, is one of the prettiest of the architectural adornments of Normanhurst. But the clock-tower and buildings generally are all admirable, and the back walls are well smothered with Ampelopsis and Ivy. Banks of Cratægus are well introduced for edgings, or coverings of bare places, and the Hypericum (St. John's Wort), has been used as a favourite shrub for the edges of borders. *H. E.*

# New Garden Plants.

## DENDROBIUM ERYTHROPOGON, *n. sp.* (*hyb. nat.?*)

THIS came with plants of Dendrobium Lowii to Messrs. H. Low & Co. Mr. H. Low informs me the plants are just like those of the species, named in 1861 by Dr. Lindley, in honour of Mr. H. Low. The flowers are smaller than those of Dendrobium Lowii in my herbarium, the grandest of which was kindly sent by Mr. Day, 1877. I have at hand a four-flowered raceme with well developed, very nigro-hirsute bracts. The sepals are partly most pallid whitish-ochre, partly ochre coloured, and are deficient in that fine yellow of the typical Dendrobium Lowii. The keels on the mid-lines are well developed. Petals oblong, well undulate. Column nearly white, with the two scarlet spots at the base as in D. Lowii. The lip offers the very remarkable marks of distinction. It is very much like that of Dendrobium radians, and may be compared to that of the Burmese D. xanthophlebium. The side-laciniæ are much developed, blunt, rectangular, white, edged crimson, quite distinct from the narrow things of D. Lowii. Mid-lacinia of lip obcordate, undulate, toothletted, with a very short constricted base. There are seven thick crimson keels on the disc of the mid-lacinia, the two external ones have short crimson hairs on each side, and want the long yellow beard of D. Lowii. There is a crimson wash between the crimson keels. It is a very good Dendrobium, as is D. Lowii, both being uncommon, and very peculiar. *H. G. Rchb. f.*

## AERIDES BALLANTINIANUM, *n. sp.*†

A fine conspicuous Aërides, which appears to have usually rather short bilobed leaves. The flowers show such a great variation, that I had some time ago a dozen at once, no one being exactly like the other. The odd sepal and petals are somewhat toothed, and those three being white while the lateral sepals are usually adorned with a purple eye blotch at the top. Side-laciniæ of the lip equal or shorter than the mid-lacinia, retuse and toothed at the top, orange or lighter and sometimes self-coloured, at other times with purple streaks and transverse bars of different dimensions. Mid-lacinia toothed at the sides, bidentate at the top, white. Spur remarkably short, now green, now whitish-purple, now purple. Rostellar process rather short. This species partakes of the characters of Aërides suavissimum and virens. Had it not been imported in such numbers I should have suspected it to be a natural mule. Some English growers suspect such mules were the consequence of the presence of our excellent veteran, the pride of English collectors, Thomas Lobb. It has been imported by Mr. F. Sander, at whose desire it is named in honour of Mr. Ballantine, the excellent gardener of Baron von Schroeder. *H. G. Rchb. f.*

## TRICHOCENTRUM FUSCUM (*Lindl.*) KRAMERI, *n. var.*

This is a singular variety with a greater flower and a longer, much thinner spur than usual. I can not, however, think it specifically distinct. It was sent from Brazil by the collector Mr. Kramer, to Mr. F. Sander, who kindly sent me twice flowers. *H. G. Rchb. f.*

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* *Dendrobium erythropogon*, n. sp (hyb. nat.?) — Aff. Dendrobio Lowii, Lindl. Labelli laciniis lateralibus triangulis obtusis magnis, lacinia mediana brevissime cuneata obcordata undulata denticulata, carinis in disco septenis, utroque latere externis, genuinis cunctis atrosanguineis. Ex ins. Sond Imp cl. Low. *H. G. Rchb. f.*

† *Aërides Ballantinianum*, n. sp.—Foliis abbreviatis latis apice obtusis bilobis, racemis densis; sepalo impari ac petalis obscure denticulatis, labelli laciniis lateralibus apicibus abruptis denticulato serratis, lacinia mediana sublongiori antice lateribus serrulatas apice bidentata, cornículis geminis in calcaris ore antico, calcaribus longe clavato-cylindraceis, rostelli brevissimi. *H. G. Rchb. f.*

# A CLASSIFICATION OF GARDEN ROSES.

I am reminded by your review on p. 136 how much a good general monograph of the genus Rosa is needed. Lindley's *Monograph* was published in the year 1820, and since then a great number of new species have been discovered, and a very large number of books and papers have been written bearing upon the subject in one way or another. The difficulty which one finds at the outset in using Lindley's book is that his primary groups are characterised so briefly, and that the points of contrast which they present are not fully and clearly brought out into view. The following key shows the best way of getting over these difficulties, which, after having had a large number of specimens through my hands during the last thirty years, I am able to suggest. The list of species is only intended to be exhaustive so far as garden Roses are concerned, with the addition of a few well marked types not yet brought into cultivation. What I have aimed at, is to give a separate number to well marked types only, and to place under these the subspecies and varieties into which they deviate. Of course I am well aware that in Rosa, of all genera, even if independent observers work from the same standing-point, it is not in the least likely that any two of them will draw the line between species and subspecies in the same way. What follows must therefore be taken as a rough draft of a very condensed guide to the determination and classification of the garden types.

## Analytical Key to the Groups.

Leaf simple, exstipulate .. .. 1. Simplicifoliæ.
Leaf compound, stipulate
  Styles forming a column, protruded beyond the disc } Systylæ.
  Styles not united nor protruded beyond the disc.
    Stipules nearly free, deciduous . 3 Banksianæ.
    Stipules adnate above the middle, persistent.
      Prickles in pairs at the base of the leaves.
        Fruit persistently pilose .. .. 4. Bracteatæ.
        Fruit glabrous .. .. .. 5 Cinnamomeæ.
      Prickles scattered, numerous, passing gradually into aculei and setæ.
        Leaves not rugose; large prickles long and slender } 6. Pimpinellifoliæ.
        Leaves rugose, coriaceous; large prickles short and stout } 7 Centifoliæ.
      Homocanthæ. Prickles altered, comparatively subequal.
        Prickles slender, leaf herbaceous, glandular below } Villosæ.
        Prickles stout and hooked, leaf thick and dull below } 9 Carolinæ.
        Leaves very glandular beneath .. 10 Rubiginosæ.

## Classified Enumeration of the Garden Species and Subspecies.

### Group I. Simplicifoliæ.

1. *R. simplicifolia*, Salisb. (= *R. berberifolia*, Pallas = *Lowea berberifolia*, Lindl. = *Hulthemia berberifolia*, Dumont).—Siberia and Persia.
*R. Hardii*, Paxt.—A hybrid between berberifolia and lutea.

### Group II. Systylæ.

2. *R. arvensis*, Scop. (R. arvensis, Huds.).—Europe.
capreolata, Neill (the Ayrshire Rose).
3. *R. sempervirens*, Linn., South Europe and India.
prostrata, DC.
scandens, Miller.
Leschenaultiana, Thory and Redonté.
longicuspis, Bertol.
4. *R. moschata*, Miller.—Southern Europe and India.
Dupontii, Desegl. (nivea, Dupont).
Brunonii, Lindl.
5. *R. multiflora*, Thunb.—China and Japan.
polyantha, Siebold (Luciæ, Franch. and Rocheb.)
6. *R. abyssinica*, R. Br. (Schimperiana, Hochst. and Steud.)—Abyssinia.
8 *R. phœnicea*, Boiss.—Orient.
9. *R. setigera*, Michx. (rubifolia, R. Br.), the Prairie Rose.—United States.
10. *R. stylosa*, Desv. (collina, E. B.).—Europe.
leucochroa, Desv.
systyla, Bast.
Connects Groups II. and IX.

### Group III. Banksianæ.

11. *R. Banksiæ*, R. Br. (inermis, Roxb.).—China.
lutea, Lindl., *Bot. Reg.*, t. 1105.
12. *R. microcarpa*, Lindl. (amoyensis, Hance).—China.
13. *R. Fortuneana*, Lindl. in Paxt. *Flow. Gard.*, t. 171.—China.
14. *R. sinica*, Murr. (lævigata, Mich.; ternata, Poir.; triphylla, Roxb.; nivea, DC.; cherokensis, Donn.)—China, hystrix, Lindl., *Mon.*, t. 17.

### Group IV. Bracteatæ.

15. *R. bracteata*, Wendl. (the Macartney Rose).—China.
16. *R. involucrata*, Roxb. (Lyellii, Lindl.; palustris, Hamilt.).—India.

### Group V. Cinnamomeæ.

In some of these there are only the pairs of prickles at the base of the leaves, but in several of the species there are few or many aciculi in addition. These latter form a connecting link between Groups V. and VI.

17. *R. cinnamomea*, Linn.—Europe and North Asia.
majalis, Retz.
davurica, Pallas.
18. *R. carolina*, Linn. (corymbosa, Ehrh.; pennsylvanica, Mich.; Hudsoniana, Red.)—North America.
19. *R. lucida*, Ehrh. (baltica, Roth.; Rapa Bosc.).—North America.
20. *R. humilis* Marsh (parviflora, Ehrh.).—North America.
21. *R. nitida*, Willd. North America.
22. *R. laxa*, Retz. (clinophylla, Red.).—Siberia.
23. *R. Woodsii*, Lindl. (Maximiliani, Nees).—North America, west side.
californica, C. and S.
pisocarpa, A. Gray.
Fendleri, Crépin.
24. *R. nutkana*, Presl.—North-west America.
25. *R. gymnocarpa*, Nutt.—North America.
26. *R. anserinæfolia*, Boiss.—Orient.
27. *R. Fedtschenkoana*, Regel.—Central Asia.
28. *R. rugosa*, Thunb. (ferox, Lawr.; Regeliana, André).—Japan and Siberia.
kamschatica, Vent.
29. *R. sericea*, Lindl.—India.
30. *R. microphylla*, Lindl.—China. Connects the Cinnamomeæ and Bracteatæ.
*R. Iwara*, Siebold.—Supposed to be a hybrid between rugosa and multiflora.

### Group VI. Pimpinellifoliæ.

31. *R. spinosissima*, L. (pimpinellifolia, L.; scotica, Miller).—Europe and Siberia.
altaica, Willd. (grandiflora, Lindl.).
myriacantha, DC.
32. *R. Webbiana*, Wall.—Himalayas.
33. *R. platyacantha*, Schrenk.—Central Asia.
34. *R. rubella*, Smith.—Europe.
stricta, Donn.
gentilis, Sternb.
reversa, W. and K.
These perhaps hybrids between spinosissima and alpina.
35. *R. hibernica*, Sm.—Ireland and England. Perhaps a hybrid between spinosissima and canina.
36. *R. involuta* Sm.—Europe principally Britain.
Sabini, Woods.
gracilis, Woods.
Wilsoni, Borrer.
37. *R. macrophylla*, Lindl.—Orient.
38. *R. alpina*, L. (inermis, Mill.).—Europe.
pendulina, L.
39. *R. lævis*, Ait.—North America.
fraxinifolia, Borkh.
arkansana, Porter.
40. *R. acicularis*, Lindl.—North Temperate Zone.
carelica, Fries.
Sayi, Schwein.
41. *R. hemisphærica* Herm. (glaucophylla, Ehrh.; sulphurea, Ait.; Rapini, Boiss.).—Orient.
42 *R. hispida*, Sims (lutescens, Pursh.).—Garden origin.

### Group VII. Centifoliæ.

43. *R. gallica*, L. (austriaca, Crantz.).—Europe and Western Asia.
pumila, Lam. fil.
incarnata, Miller.
provincialis, Miller.
44. *R. centifolia*, Miller.—Orient.
muscosa, Miller.
pomponia, DC.
parvifolia Ehrh (burgundica, Rossig., pomponia, Desf.).
45. *R. damascena*, Miller (bifera, Pers.).—Orient.
belgica, Miller.
portlandica, Hort.
calendarum, Mœnch.
variegata, Andrews.
46. *R. turbinata*, Ait. (francofurtensis, Desf.; campanulata, Ehrh.).—Garden origin, perhaps hybrid between gallica and canina.
*R. hybrida*, Schleich, and *R. arvina*, Krock, probably hybrids between gallica and arvensis.

### Group VIII. Villosæ.

47. *R. villosa*, Linn. (mollis, Smith; pomifera, Herm.
48. *R. orientalis*, Dupont.—Orient.
49. *R. tomentosa*, Smith.—Europe. Numerous varieties.
fœtida, Bast.
scabriuscula, Smith.
50. *R. spinulifolia*, Demetra.—Switzerland.
51. *R. Hackeliana*, Tratt.—South Europe.

### Group IX. Caninæ.

52. *R. canina*, Linn.—Europe, Orient. Varieties innumerable; 150 are treated as species, with full synonymy, in Deséglise's catalogue of the Roses of Europe and Asia. One series of forms has erect subpersistent sepals, and another leaves slightly glandular beneath.
53. *R. alba*, L.—Garden origin, perhaps a hybrid between canina and gallica.
54. *R. rubrifolia*, Vill.—Europe.
55. *R. montana*, Chaix (Reyneri, Hall. fil.).—Central Europe.
56. *R. indica*, L. (chinensis, Jacq.).—Native country not clearly known.
fragrans, Red. (odoratissima, Sweet).
semperflorens, Curt. (diversifolia, Vent; bengalensis, Pers.).
longifolia, Willd.
caryophyllea, Bess.
minima, Curt. (Lawrenceana, Sweet).
anemonæflora, Hort.
*R. Noisetteana*, Seringe, and *R. Ternauxiana*, Ser., are supposed to be hybrids between indica and moschata; *R. borbonica*, Red., between indica and gallica; *R. reclinata*, Red. (Boursault Rose), between indica and alpina; *R. ruga*, Lindl., between indica fragrans, and arvensis; and *R. Fortuneana*, Lemaire, *Jard. Fleur.*, t. 361, is doubtless also a hybrid, of which indica is one of the parents.

### Group X. Rubiginosæ.

57. *R. rubiginosa*, L. (Eglanteria, Miller; suaveolens, Pursh.).—Europe.
58. *R. micrantha*, Smith, Europe.
59. *R. sepium*, Thuill.—Europe. Numerous varieties.
agrestis, Savi.
inodora, Fries (Klukii, Besser).
60. *R. ferox*, M. B.—North Asia.
61. *R. glutinosa*, S. and S. (pulverulenta, M. B.).—Orient.
62. *R. lutea*, Miller (Eglanteria, L.).—Orient.
punicea, Miller.

*J. G. Baker, Kew Herbarium, August*, 1885.

# THE GENUS ODONTOGLOSSUM.

A REVIEW of the genus, even so far as we have already got with it, reveals a most complicated and perplexing but interesting state of things, the number of intermediate forms which are continually increasing going a great way towards obscuring those which have formerly been regarded as distinct, and causing one to question whether such a thing as a pure species exists among them all, and to long for one, no matter how insignificant, which would in all the different specimens of it bear the same features unchanged, for doubts as to the stability of the species are still further strengthened by their extraordinary variability the difference between a bad and a good form of the same species being often as great as that in a closely allied supposed hybrid which cannot be accorded the name of the species itself. Let the mind pass before its mirrors a starry-petalled form of Odontoglossum crispum, and then in their turns all the different grades until the gigantic white form and the unapproachable purple blotched and tinged O. c. Veitchianum be reached—what endless variety is revealed! Could but the whole be divided into six or even a dozen distinct branches, according to the leading types now known, and all the intermediate forms eliminated, the members of the O. crispum group itself would give material for so many distinct species. The same line of argument also hold good in a lesser degree; in most of the other species their innate variability and their inter-connection by cross-breeding seeming to weave them one into the other with but few breaks, and those they probably require but time and fresh importations to clear away. If but a reliable foundation and starting-point could be found, it would be interesting to construct a genealogical tree of the genus showing the prime ancestor, if the botanical heraldry could point him out, and thus the history of the great and complicated family might be traced. We should see where crispum joined luteo-purpureum, and resulted in Wilckeanum;

where crispum became allied to odoratum and produced Ruckerianum and a score others; where crispum, mated with Lindleyanum and had issue Coradinei; and where the same crispum merged into Pescatorei with Pescatorei Lehmanni, and being a great group formed innumerable other connections. All the other main types seem to have been equally intent on being fruitful and multiplying, and replenishing that portion of the earth allotted to them; and it needs only experience in them to be able to connect all the branches in the same manner as that running from luteo-purpureum and triumphans through præcitans, polyxanthum, nevadense, Sanderianum, and so on, by the assistance of their collateral aids, until the meanest forms of construction are reached, and even they are found to be as unstable as the others—some of these flowers mimicing the features of Lindleyana, and others those of blandum on a small scale: the smaller the flower the more profusely branched the spike.

The only Odontoglossum we have in cultivation which is distinct and unvarying is the lovely little O. nævium, and that quality in it is only due to the fact that all the plants originated from the few specimens originally imported. Should it ever be got over in quantity it will probably be found to be no exception to that changeableness which they seem so eager to exhibit. Dr. Lindley himself remarks that out of the two or three specimens of O. pardinum he had examined one of them was not spotted all yellow, and culture often reveals the unspotted panther mentioned by him.

But all this only makes the botanist's work more necessary and more difficult, the innumerable lovely things which are continually cropping up positively demanding distinctive names for all considerations, scientific and commercial. The weight of the work, therefore, which has fallen on Professor H. G. Reichenbach will be readily understood, and too great praise cannot be given to him for the readiness with which he has recognised distinct things, and the acuteness with which he has detected chance varieties. Considering the gradual growth of the now great and increasing genus, and the often scanty materials submitted to him, one can only wonder that the names given stand the test of time as they do. No man under the circumstances could have done better, and nothing remains but to adhere to the names given without considering whether the plants named be species or hybrids, for after all, the cross-parentage ascribed to the plants is only founded on conjecture, although those who know the peculiarities of column, crest, and labellum of the reputed parents, can form an idea on the subject which admits of no doubt.

Altogether the genus Odontoglossum is the Orchid growers' greatest pets — the beauty, variety, and amenability to good culture of its members rendering it exceptionally useful and desirable. The facilities given of late years for acquiring the plants through the great importations, has contributed largely to the popularity of the Odontoglossums, giving, as they do, a seemingly never-ending supply of novelties. These novelties are almost wholly obtained from the cross-bred varieties flowering in the importations, or from local varieties, and in the matter of showy distinct new kinds we, in recent times, have little to plume ourselves about, as the fine old enumerated species discovered by Hartweg, Warscewicz, Skinner, Jamieson, and those other early travellers, have merely been reintroduced in our times, and many of them have not even yet been got over. The famed Schiller collection in Hamburgh, in which so much was done by good culture to foster and spread a love for these plants, contained, in the year 1856, a fine lot of Odontoglossums, comprising most of those we now call rare (except the hybrids) and several others which are not now in cultivation. Among Schiller's rare things may be noted Odontoglossum revolutum, a noble, large, yellow-flowered species, discovered by Hartweg at an elevation of 11,000 feet; the Costa Rica O. Warscewiczii, and the profuse flowering O. Schillerianum, which was only imported here by Sander last year.

Before enumerating the species a word as to the botanical characteristics of the genus will not be out of place, as we frequently see certain species mentioned both as Oncidiums and Odontoglossum. In a recent sale catalogue O. retusum is so described, and Oncidium orientale spoken of as a very fine Odontoglossum, while in a paper before me I see Oncidium laxense mentioned as one of the best Odontoglossums Hartweg ever discovered. This arises from carelessness, as although Odontoglossum and Oncidium in certain sections approach very near each other in some features, things are not so mixed that they cannot be determined, and the plants must be either one or the other, unless further complications arise by a home raised batch of seedlings between the two genera.

The pollinia (2) are the same in both Odontoglossum and Oncidium, and therefore give no assistance in separating them, but very marked features will always be found in Odontoglossum, consisting of the long projecting column, generally thin at the base, and of the base or keel of the lip always running parallel with the under-side of the column for some distance before expanding into the showy portion, which turns down at an angle and faces to the front of the flower. These and other minor features, more easily to be understood by dissection of the flowers than by the aid of description, afford a ready means of correctly determining the genera. Let us hope that all those with the necessary material at their command will turn their attention to this interesting side of the question, so useful in tracing the parentage of chance varieties, as well as in determining their genera. *James O'Brien.*

*(To be continued.)*



Fig. 49.—Odontoglossum coradinei.

## NOTES FROM A BUCKINGHAMSHIRE GARDEN.

*July* 3.—The thought of June Roses would have been marred had the grievous blight that fell upon some of them been spoken of at the time. Happily ours, which are affected thus, are few, and the disfigurement they suffer slight compared with the reports from other places. The Roses most dear to me have, however, suffered most. The leaves of the Damask Roses, filling up the corner of the old south wall, are white with blight; some of the York and Lancasters the same; and the leaves of some few other kinds are spotted all over with brown. Not one of the Tea Roses is touched, nor any of our new Roses. Where the green leaves are affected the flowers themselves also suffer, and look pale and stunted. Far worse than blight are the ravages of that cruel caterpillar which skins the leaves. He seems to prefer the old Blush Rose to all others, and its leaves are the first to be attacked. I confess I hate the skinner, and destroy as many as I can lay my finger on. He is as wily as he is destructive, and being the same colour as the leaf, is very hard to find. He has a way of lying close along the very edge of a leaf, or stretched out in such a position as to be almost indistinguishable from the veins. At mid-day, when the skinner has turned in under the leaf for shade, it is useless to hunt, for he cannot possibly be seen. The best time for a successful massacre is in the morning, as early as you please. A little patch of fresher colour betrays a fresh-skinned portion of a leaf; there the enemy lies, invisible, except to the long-practised eye. As soon as he is discovered turn the leaf over and squeeze him tight; there are grounds, however, for a dismal suspicion that unless the head be crushed the creature refills himself, the skin being tough, and next day he is at work again as hungry as ever. This suspected occurrence, however, I refrain from too closely verifying. The Rose pest of former years—that little bright green caterpillar who after awhile sewed himself up in a leaf, became a tiny black chrysalis, and then emerged a smart little yellow moth, was not nearly so bad as the voracious skinner. It is long since that little moth used to be too common in the garden. To see it again would at once bring back the past, with a feeling of dark summer evenings in long-lost years, and a pervading sense of the smell of rain upon the summer leaves.

There are some insects which would seem to be less abundant now than formerly. It gave me pleasure to meet a cockchafer one morning! The burnished Rose-beetle who used to sit like a green jewel in the heart of a Rose, or burr over the Roses in the sunshine, I never see here now. Even the little leaf-cutter bee has deserted us. His neatly rounded cuttings, sawn out of the Rose leaves, disfigured them infinitely less than one day's work of a skinner! The Musk Rose that we planted last year is flowering freely; small flowers with a small delicious scent. I wonder if the delicate pink of its petals is the "musk-colour" of some old writers! Does not Shakespeare write somewhere of a "musk-coloured coat?" The white Noisettes climbing all over our old Stone Pine droops down to the very grass in trails and wreaths covered thick with bunches of little white Roses in lavish beauty. The curious strong fragrance fills all that end of the garden. A child, a little elf of blue eyes and pink cheeks running here and there, through and through the Rose-falls, was one day like a dream from fairyland! Rosa microphylla has grown herself into a great green bush in the Fantaisie. But as to flowering, she seems to think little of that; two or three red flowers only, of no account. The darlings of the year are the great broad-flowered York and Lancasters. I count them over morning after morning as a miser counts his gold. It is worth a visit just after sun-rise to see and smell them with the dew upon their petals. They are what Chaucer would call "brode Roses," so wide do their firm and well-set petals spread. The white Cabbage—which used also to be called within my memory the Neapolitan Rose and the Provence—is this summer more than ever bounteous in its pure white bloom. White Roses, however, are not my favourites, excepting perhaps Niphetos the waxen devoniensis and the Japanese rugosa. There are summer days when it is too hot for any but white flowers "to deck the house," and in such sultry heat white Roses help to cool the

shaded room. A Rose-de-Meaux, a little perfumed nest of prim pinkness, has bloomed like an old-fashioned woodcut under the Holly hedge. I want to have near it the tiny Fairy Rose of former years, a wee bush pinked over with the wee-est of China Roses. Several new plants of Souvenir d'un Ami are blooming well. No Rose lasts so long when gathered as this does. The old Maréchal Niel in the greenhouse has renewed his youth, and has given up his hundreds this spring, while one planted under a north wall (according to advice) failed to do better for us than give a few greenish buds. The Roses of the Boccage are superb in size and colour. The new ground suits them, and for half the day they are shaded by the Elms. For a modern Rose I like Beauty of Waltham as well as any; its form and luminous colour, emitting rays of crimson that "bid the rash gazer wipe his eye," are as perfect as any such Rose can be. In the shade, behind the others, modestly blooms a lovely new Rose, Madame Audot, scarcely differing, however, from our old friend the Maiden's Blush—perhaps a little richer in colour, and in scent a little poorer. It is pleasant to come suddenly upon this blaze of Roses at a distance from the house, and divided from the nearer Constancy for their text. It is as good as a meditation by Jeremy Taylor. We were very grave about it last year; only a very little was to be permitted; it was denounced as too encroaching; and a quantity of it was ruthlessly cut away. We believed its humiliation to be secure. Not a bit of it! Never did it spread and flourish and flower more abundantly than it has done this summer. It ran round the corner of the house and made a blooming bower of itself in the shade under the east porch. It gave a rich deep pink background for the white Irises, and Blush Roses to the south; it actually climbed up and looked in at the dining-room windows, and nodded to us as we sat at breakfast. "J'y suis et j'y reste!" it said, as plain as words; and after all I had to confess its conquering beauty. The gardener would say I am rather weak about some things. "Pease Everlasting," has overcome; and so has the White Briony. I had said, that this Briony should not advance beyond a certain point. And I found myself to-day surrounded by the beauty of ten thousand ice-green blossoms, overspreading a low ivy wall, at least twelve feet beyond the bounds I had set! With unnumbered lengths of out-shot tendrils stretching all over it every way in eager quest for the June has budded, bloomed, and fallen; and like the quickly passing sweetness of them many a friend has come and gone. The dry, green paths hedged in with Beech or Rose are haunted in this parching weather, not alone by waving shadows on the grass, but by dear memories of a face or a voice that was here and is not. The garden, though in all its prime, was remarkable for its blue. Cloudy pillars of Blue Clematis rose everywhere on the borders, showing well especially among the Cryptomerias of the Fantaisie. There were many shades of blue, from pale sky to ultramarine. The dark blue double kind is a desirable plant, for its quality of lasting longer than its single sisters. Within the walls there grew a love group of white Lily with pink Roses against a misty background of blue Larkspur, while on the other side the walk reigned in brilliant confusion, Himalayan Poppies of every red and rosy tint. People say that these Poppies, which we call Himalayan, or annual Poppies, are common. Yet nobody seems to grow them! They have been from May till now, to ourselves and every visitor, the wonder and joy of the garden. Whether double or single, like the field Poppy, they are full of a happy radiancy of colour which cheers both the eyes and heart. New combinations of colour and pattern



Fig. 41.—A, odontoglossum nevadense; B, odontoglossum polyxanthus. (see p. 199.)

pleasaunce by grassy paths and lines of trees. So much for our Rose garden.

The garden is more fragrant this summer than is its wont. One cannot tell which sweet scent does most prevail, whether that of Sweet Peas, or Mignonette, or honey-scented Alyssum; while about the iron gates in the old brick walls flexuosa Honeysuckle flings perfume far and near. The Sweet Pea hedge round half the tennis-lawn is full of lovely caprices of colour. One set of white blossoms is tinged with pale bluish tinge. That quaint, patchy, greyish and white kind, which, by some absurd association of ideas, reminds me always of the old sign of the "Bald-faced Stag" on Putney Heath, is frequent, and so is the old fashionedest of all—the pretty pink and white. We have not yet the new pink Sweet Pea, the colour of a Moss Rose or Raspberry cream. Plain white is, after all, the best perhaps. Nature never planned a lovelier flower of such airy lightness. It might shake its butterfly-wings and fly, it is so lightly poised upon the slender stalk! Perhaps to the name "Sweet Pea," and to the sweet freshness of the flower, memories of childhood cling more closely than to any other garden name. Sweet Peas and Mignonette should always grow together. Even the down-trodden Everlasting Pea ("Pease everlasting," and "Save euerlasting," as Gerard calls them), with its large frank blossoms, has this year won its way to favour. That plant is in itself an epitome of all the sermons of the year, with Courage and touch of some sympathetic branch, with glossy Ivy and blue Berberis berries mixing through the flowers and foliage, it is certainly as people say, "a Picture." Near a little wicket gate at the end of a grass walk grows a female Briony, smaller and more reticent, wreathed about with round green fruit. During a short absence this was written to me—"No one has passed through the little green gate since you left, I am sure; the Briony has put out a tiny hand which clasps it so tight." Totally different, and most charming in its way, are the clumps of Alstrœmeria, whose orange blossoms pass "wrapt through many a rosy change" into pink and white. It is invaluable in nosegays for the flower-glasses. It will have to be transplanted from its rather obscure corner at a distance from the house by the garden-men's cottage. It would keep the east border "furnished" until the time of Phloxes. Ever since mid-winter the flower-glasses on my table have glowed with a rich succession of Amaryllis formosissima and double scarlet Hibiscus. The long firm petals of this Amaryllis, well named the most beautiful, burn red beneath the silken surface—a just imitation of old red enamel. I never tired of watching the play of inner light; the turn of each petal shone like a piece of old jeweller's work.

*July* 24.—One month has passed since the garden lay flushed with the full glory of midsummer. It is a little sad that nothing now remains but a memory of it; that thinking of the garden flowers one must say that this, and this, has been! Many a flower since are perpetually coming; and I do not despair of the scarlets some day running into pure orange-yellow. There is one low-growing double kind scarcely distinguishable from a pink Carnation. There is one half-double with white petals hemmed with pink, and one streaked with crimson. The colours are all bright and clean, set off by the yellow stamens. One or two are rather handsome with black centres; but these have none of the clear joyous grace of my favourites. For "decking the house," to use again Parkinson's quaint phrase, they are admirable, lasting fresh for days, if gathered in the heat of the sun. To me the petals are like fairy shells; my housekeeper is reminded by them of the muslin gowns her grandmother used to wear. The whole race of French Poppies, so called, are far inferior, despite their grand seed vessels and their fine grey foliage. . . . . I am rebuked by the sweet face of one of these very Poppies looking reproachfully at me across the table. Some one has gathered it and placed it in a glass of water for me. The colour is vermilion-red and white, most delicate and pure. The seed of that Poppy must be marked.

In the white splendour of their contrast to the Poppies how beautiful the blooming of Madonna Lilies has been! (It is all "has been," now!) Does any one know why the Lily leaves almost always fail? Before their buds flowered our Lilies for the most part looked deplorable—their withered leaves hanging down around the tall stems. In due time, when the

stems were crowned with the majesty beside which the glory of Solomon was as nought, we forgot the dreary deadness of the foliage. In Switzerland, where the cottage gardens are filled, like those in England, with white Lilies, I am told the stalk-leaves remain green. Two or three of our finest clumps failed suddenly—in one night, it seemed—the doomed plant withering down to the very bulb. This was an unusual disaster, and I blamed "the invisible worm that flies in the dark and howling storm." In the same border we have several great plants of Lilium auratum without a speck upon their leaves.

The Evening Primrose (Œnothera) came into bloom before its appointed time, and her fair flowers are even larger than usual. Downy-winged moths hover round them in the dark warm evenings. It is said that those who watch may see the buds open. I have watched, but had never patience to wait long enough. Most flowers are best in the morning, when they are refreshed with dews and darkness; but to see Œnothera aright she must be visited "by the pale moonlight," when the air is still and heavy with the odours of night-scented flowers under the full golden moon of July. On such a dewless night Œnothera expands her broad Primrose flowers, and seems to throb through all her being with a strange moon-life. Once sown the Evening Primrose takes care of itself ever after. We have them growing in a line along the Larch walk, all twined about and dressed with a large-blossomed wreathing pink Convolvulus. Another company of them edging an evergreen border shine in the light of their loveliness out of the sombre brown of Cryptomerian darkness. Alas! Œnothera owns one fatal flaw. It is hard even to whisper of its repulsive smell—a smell which is also so sensitive that the flower seems to give it out or retain it at will. At night, if the stem be shaken, or if the flower-cup trembles at the touch of a moth as it alights, out pours the dreadful odour. I shall hope some day for the perfumed white variety. Another old love of former years is the Indian Moonflower. Some of the large white seeds were sent us in the winter from Madras, and now I am anxiously watching the growth of two fine plants which sprung from them. It used to blow at the end of July, when the moon was full, between 9 and 10 at night, opening wide, like a pure white Convolvulus, with a delicious scent.

Night-blowing flowers are mostly pale or white. The Nicotiana hanging on its stalk half dead by day, is radiant as a silver star when night draws on. In the Boccage we have two fine clumps of Spiderwort (Tradescantia), a flower I remember set amongst childhood's wonders, earliest almost of all flowers. Buds mass themselves in clusters all over the plants, and every day on each cluster appears a new three-cornered purple gem. The old fanciful likeness to spiders' legs can be but barely traced in the leaves. There is a sense of mysterious awe in the way Gerrard says the leaves are good "for the bite of that great spider," without naming the creature more particularly.

John Tradescant lived once at Dorney Court, not far from here. There is some tradition that there he presented his Pine-apple to Charles II. [?], and it is not many years since a little wayside public-house near, retained still the sign of a Pine-apple. "Deborah's" little mount in the Parterre was a while ago parcel-gilt with the silver of small white Harebells, and the gold of yellow Stonecrop. It is grieving to recall thus, the garden as it was. Sweet things do still remain, but after all the daily waterings—sometimes whole days are spent in watering—the place as a whole is hard parched up with long drought. Some things dwindle, and cannot by any means be saved. Eleven weeks without rain!

Long weeks when the sun burns unclouded, and the only clouds are clouds of greenfly, that is the worst; greenfly that destroy whole rows of Sweet Peas in a single night, and blackfly that smother the fruit trees, and distort the stalks of lovely Poppies. If one sits in the garden they settle all over one, and outside the garden, down along the roads, one encounters storms of flying aphides. Flycatchers sit stupidly on the Rose arches, bewildered by the myriads that float in the air. The Lime avenue is dried up, and yet dripping with honeydew. Rain will come at last, however, and meanwhile the trees will ripen their wood, and it may be that good will fall rather than harm, even to the queer things that claim our pity now.

## THE PEAR CONGRESS.

THE recent thunder showers have materially improved the prospects of the Pear Congress in the sense that more perfect samples of the various kinds of Pears sent for exhibition and comparison will certainly now be found than promised to be the case a few days since. Interesting as may be collections of the fruit, howsoever grown, certainly good samples are both more pleasing to look upon and much more useful for purposes of comparison, whilst to the grower they are financially all the more valuable.

Probably not a few persons interested in Pear culture have asked what good results to them or to Pears and their culture are likely to result from the proposed Conference? That is a difficult query to answer if put, and it is one which should be answered if the necessity for the holding of the Congress is to be established.

As far as the late Apple Congress was concerned the report issued by the committee which conducted it is the chief answer, so far as one can be afforded. Whether any considerable stimulus to Apple culture has resulted therefrom, or whether any improvement has been effected in the sorts commonly grown, or in the general nomenclature of our common Apples, are points upon which it would be difficult to offer an opinion at present. Probably several years must elapse ere results will show. Certainly, should no good results follow, whilst presenting much to be deplored, yet such failure cannot be laid at the door of the committee promoting the Congress. It did the best it could with the materials at its disposal; it offered a singularly favourable opportunity for getting useful instruction concerning Apples, and if the public fail to benefit thereby the public is to blame. But Pears, though coming so near to Apples in our lists of hardy tree fruits, yet stand usually in a very different category, for the simple reason that, whilst the latter may be grown abundantly by all, and in almost any way, Pears are very much more capricious, and require diverse treatment. It is true that we may get with little trouble on ordinary trees and soils oftentimes big crops of such common kinds as Hessle, Swan's Egg, Beurré de Capiaumont, and rather better Williams' Bon Chrétien, but these are evanescent kinds, of different quality, useful enough on costermongers' barrows, and that is all. Really our best Pears must be grown either on walls, or as espaliers or pyramids, worked on the Quince, if we are to look for good fruit such as is worth cultivating. We do not grow Apples on walls, and in the open we do so with small difficulty; indeed, nothing can be easier in favourable seasons than to secure a good crop of very fine fruit on bush and pyramid trees worked on dwarfing stocks; hence, between good Pear and Apple culture there is a great gulf, which, if it be possible for the Congress to bridge over, it will indeed render to the fruit loving and growing world great service.

Perhaps there may be hidden away in nurseries gems in the Pear republic which have been unable to shed their lights for the benefit of humanity, and which if brought forth into the full glare of day may prove valuable agents in the direction indicated. If the Congress can help to bring these forth, and will proclaim their merits as kinds which, under common treatment and culture will be for us as Pears what Blenheim, Cox's Orange, and Ribston Pippins, are amongst Apples, then indeed will the gathering merit glorification. Ordinarily in gardens there is small want of good Pears because of the methods of culture adopted—methods that are not common because out of the reach of the majority. Such fruits, however, do not add much to the national wealth, because the greater portion go to supply private needs and tastes. We want to see Pear culture made a prosperous profitable trade, by which not merely the grower, but the public generally may benefit, and to create such a trade would be indeed a worthy object to keep in view. Looking over the large list of names which forms the Congress Committee, it would seem as if the promoters had scarcely realised that phase of the subject as market growers of Pears are specially noticeable by their absence. Indeed, with so large a number of private gardeners included, it would seem as if the chief object of the promoters was to get together the best fruits from private gardens to compare them for purposes of nomenclature, and other unimportant purposes, and there leave them.

On the other hand, the inclusion of some half dozen of the leading market growers of Pears in the metropolitan district would indicate that the promoters had objects truly national as well as pomological at heart, and that all that could be done to popularise Pear culture and promote the cultivation of the very best cropping and edible kinds for market purposes should be done. If in the end it has to be frankly admitted that the production of first-class sorts, whether new or old, be practically impossible under ordinary culture, and that we have not in reserve Beurré Diels, Marie Louises, Chaumontels, Glou Morceaus, and Duchesse d'Angoulêmes of hardier constitution and far more productive, under other designations—then it will be useless to look for benefit to Pear culture in that direction.

It but remains to consider how far it may be safe and profitable to invest capital in the production of high-class Pears under the most approved systems of culture—such, for instance, as those employed in the best private gardens. Will it pay to erect walls over wide areas, and against these plant Pears in the best aspects, and Plums, Morello Cherries, and some other profitable fruit on the worst ones? It is obvious that although the outlay would be considerable at the first, the after-expense would not be excessive; hence, if good crops, or fairly good crops, can be obtained from year to year the speculation may prove profitable in the end. Were it so we may expect that very many such Pear gardens would be planted, and that in time the public would benefit by having good Pears offered at reasonable cost. Our hardiest and most prolific Pears are those which soonest come to maturity, hence, to the public, the Pear season is a short one. Here again it would be of great public service could the Congress call forth some few Pears which, whilst hardy and prolific, would also give good fruits as abundantly at Christmas as Williams' Bon Chrétien and some others give so plentifully in the autumn. Whilst, however, we may lay great stress upon the useful work which may be hoped for in the direction indicated, we may not overlook the very instructive results looked for in the direction of nomenclature correction—work in which nurserymen and gardeners generally may well take part with good effect. To that end it does seem as if it were not enough to send to the Congress good samples of the kinds grown in the various districts, and under various names in collections. Most persons doubtless prefer that their contributions should be grouped as sent and not be widely distributed; the doing so doubtless gratifies the natural pride of the exhibitor, but does not add to the value of the Congress so largely as might be. We may be singular in the assumption, but still hold that were only fifty of the best kinds sent in and left absolutely at the disposal of the committee for arrangement in position, each dish labelled with the name of its owner, that of the sort, and of the place of growth, very much good would result, and the labours of the committee enormously lessened. Even if collections from gardeners and trade growers were sent, some half dozen fruits of certain kinds might perhaps be added for the purpose named. We venture even to suggest that the committee prepare and publish a list of some fifty, or even a hundred kinds, and invite from all over the kingdom, say six fruits of each, with som econcise information as to how and where produced. It will be unwise to select samples that are fully ripe if other fairly good ones may be had, for Pears travel badly, and soon collapse when soft. It will be well that those who purpose assisting at the Congress should obtain in time a good supply of clean dry moss for packing, for Pears need almost as much care as Peaches do when packed for exhibition.

In the outline of the promoters' proceedings recently issued it is suggested that samples in number from two to six of divers kinds be sent, but it is to be hoped that the lesser number will not be accepted literally, as the small number would in the first place indicate great poverty of crop, in the second it would offer but poor range of form or feature for comparison, and in the third place it would sadly limit the value of the exhibit were but one of the fruits to come to grief. Six fair-sized, clean grown, and characteristic fruits would certainly present more useful material than would two fruits abnormally large, and perhaps because so somewhat out of character with the known features of the kind. The division of the kingdom into counties, as done at the Apple Congress, seemed to involve much labour without corresponding benefit. The committee can hardly desire to make the Congress a means of gratifying some local vanity by enabling

one county to show that it furnished a score more dishes than another. What would be more to the point would be the grouping of counties, as, for instance, putting Kent, Surrey, Sussex, and Hants into a south-east group; Cornwall, Devon, Somerset, Dorset, and Wilts into a south-west group; then making a midland group, a north midland, and finally a northern group, with Scotland, Ireland, and Wales as separate districts. Some such geographical arrangement would satisfy all requirements. *X.*

## CONIFER GRAFTING.

All of these may be propagated by grafting, if not too resinous, and succeed as well as Roses or fruits. It is necessary to have stocks of several years' growth growing in pots, well established, of the various species suited to the purpose. For Abies or Silver Firs the best stock is A. pectinata, and Pinus sylvestris is found to be a good stock for those species which resemble the Scotch Pine. Pinus austriaca makes also an excellent stock. P. monticola does well on P. Strobus (Weymouth Pine), and P. Lemoniana on P. Pinaster. Retinosporas grow well on the stock of Thuia occidentalis, easily raised from seed, Cypress on Cupressus pyramidalis, Juniperus on Red Cedar (Juniperus virginiana), fine varieties of Yew on seedling Taxus baccata or T. fastigiata, Libocedrus on seedling Thuia sinensis. On this last stock, which is readily raised, Biota chamæcyparis and Thuiopsis take very well. Several species of Conifers which as seedling plants grown sprawling or bushy, are made to grow erect by being grafted. The operation is best done by cleft-grafting in the winter, using wood of the last season's growth.

In the spring what is termed terminal grafting may be practised with soft growth. In cleft-grafting the foliage of the scion is not shortened, and on either side of the cut-off head of the stock a bud and foliage must be left entire till union has taken place, when they may be removed. Below these tufts the needles must be taken off for a depth of several inches, so as to allow of the scion being securely tied in. *Cloches*, handlights, or a close glass case in a propagating-house where the temperature is about 60°—70°, are suitable for enclosing the grafted stocks. *M.*

## ARCHITECTURE AND LANDSCAPE GARDENING.—III.

We this week give a further abstract from Mr. Julian's lectures on the above subject, and as a Supplement publish another of his sheets of illustrations.

After tracing the history and describing the characteristics of the architecture of the Renaissance from the period of its commencement in the fifteenth century down to that of its decadence in the eighteenth, the lecturer, speaking of gardenesque architecture in this style, said:—

"Terrace walls in connection with buildings in the pure Renaissance or Italian style, should as a rule be balustrades, using the word in its proper sense, which excludes pierced parapets, to which it is often incorrectly applied.

"Sir William Chambers, in his treatise on Civil Architecture, has a chapter on balustrades, from which I will make a few extracts. I do not wish you to feel bound to accept all that he says as 'gospel'; I certainly do not myself—but for students there are many very useful hints. He says, 'Balustrades are sometimes of real use in building and at other times they are merely ornamental. Such as are intended for use, as when they are employed on steps or stairs, or to enclose terraces or other elevated places of resort, must always be nearly of the same height, never exceeding 3½ feet, nor ever being less than 3, that so a person of an ordinary size may, with ease, lean over them without being in danger of falling.'

On this extract I will observe, that Sir William's maximum height, 3½ feet, is, in my opinion, certainly 3 inches too high; 3 feet 3 inches is always enough, and you must not forget that if the balustrade is made too large in its parts, it will dwarf the building to which it is attached. On the other hand, you may often add to the apparent size and increase the importance of a building by keeping a balustrade low and small in detail; this point, the relative scale of subordinate features to that of the architecture with which they are associated, is of the utmost importance, and is, of course, the first to be settled in preparing to design them. To proceed with my quotations. 'The best proportion for balustrades of this kind is to divide the whole given height into thirteen equal parts, and to make the height of the baluster eight of those parts, the height of the base three, and that of the cornice or rail two; or, if it should be required to make the baluster less, the height may be divided into fourteen parts, giving eight to the baluster, four to the base, and two to the rail.' Speaking of the double-bellied baluster Sir William says:—'The base and rail of these may be of the same profile as the single-bellied ones, but they must not be quite so large; two-ninths of the baluster will be a proper height for the rail, and three for the base.' As to the proportions of the individual balusters the single-bellied are generally about three diameters high, and the double-bellied about five, the diameter being that of the thickest part. The distance between two balusters should not exceed half the diameter of the baluster, nor be less than one-third of it. The pedestals that support the rail should be at a reasonable distance from each other. The best arrangement is when room is left in each interval for eight or nine whole balusters, besides the two half ones engaged in the flanks of the pedestals. It frequently happens, however, that it is desirable to place the piers so far apart as to allow of sixteen or eighteen balusters between them. In this case, each range may be divided into two, or, which is better, three intervals, by placing a die or two dies in the range, each flanked with two half balusters. The breadth of these dies may be from two thirds to three-quarters of the breadth of the principal pedestals or piers. The rail should be continued over, and the base under these dies without breaks.

"The piers or pedestals may carry statues or vases; I prefer vases, as if the statues are made—as they usually are—to face outwards, those who are walking on the terrace, or looking from the windows, get a view of their backs only, which is, to say the least, uninteresting. This objection is only to a row of statues; one on each end pier of a long balustrade does not seem to offend."

Attention was then called to the pierced parapets found in connection with Elizabethan buildings and other forms of "free" Renaissance, illustrations being given of several examples, and on this part of the subject the lecturer said that "any form of piercing, beautiful in itself, may be used, provided that it be not of distinctly Gothic or of Oriental character. The piers in these parapets are often terminated with balls, or with small ornamental obelisks."

Mr. Julian continued:—"I called your attention to the arrangement of the parapets at the Château de Blois—in the description of the François-Premier style—small carved balusters alternating with ornamental initial letters, or with the crest of the owner; this, I think, produces a rich and artistic effect, and possesses an individuality that gives it an additional interest. I have often wondered that this form of parapet has not been adopted for enclosing a forecourt to a mansion, or in some similar position; it would, I think, be an agreeable change from the usual forms, which have become somewhat hackneyed."

Passing to another part of his subject, the lecturer said:—"Gate piers, or piers at the entrances of forecourts in their simplest form, should have a plinth at the base, and a small cornice at top. As these piers have to carry no weight, strongly marked vertical lines, such as flutes, should be avoided; while strongly marked horizontal lines—which may be obtained by slightly projecting the alternate courses and rusticating them, add to their apparent breadth and solidity. It is well to crown these piers with some sort of terminal, either a ball or other ornamental form; such an addition gives finish and completeness to the design, and its omission (although very common) always produces an effect of meagreness. In modern French examples small ornamental pediments are often used at the top, and with excellent effect [see the illustrations in our Supplement of two examples from Paris]; many variations can, of course, be made in the treatment of these features, and greater richness obtained by the introduction of panels containing carving, shields of arms, and so on; it is impossible to enumerate them all, but in designing them you should bear in mind what I have said about the use of horizontal bands, to which I would add that any ornamental cap should not have too great a projection, or, when viewed from any position other than from in front of one of its faces, the pier will appear top-heavy." [See Supplementary Sheet.]

## ALPINE PLANTS.

Cyananthus lobatus.—A beautiful and interesting plant, but one, more than perhaps any other, that has puzzled our best cultivators to coax into even a shortlived existence. Straggling bits, with perhaps a stray flower or two, are indeed to be met with in rare alpine collections throughout the country, but a good-sized tuft, covered with its handsome Periwinkle-like flowers, is a pleasing rarity that unfortunately one does not meet in with every day. Edge Hall, if I remember rightly, is one of the few homes of this plant, for there, growing amongst rough stones, but in apparently the best of soil, this Indian plant may be seen in its element, roaming at will, and blooming so profusely as to quite surprise the ordinary cultivator. With me it grows and flowers as freely as could be desired, and with but the care that is bestowed on one of the commonest garden occupants.

The Crested Gentian (G. septemfida),

although hardly equal as regards beauty of bloom to some of the other species, has yet a distinct and peculiar value of its own. A native of the Caucasus, this is at once a desirable species for the rock garden, with clusters of cobalt-blue flowers produced on stems of from half a foot to a foot in height. It is of the easiest culture, growing well in sandy loom and a somewhat shaded situation, where it blooms with a profusion that is surpassed by few others of the tribe to which it belongs. Other species now in bloom are G. gelida, G. cruciata, and G. Oliverii, the latter a rare, lovely, and consequently very desirable plant. Amongst miniature Bell-flowers Campanula garganica, with its heart-shaped, deeply toothed foliage, and pretty light blue erect flowers, is at present very effective. For hanging baskets or pot culture this pretty Campanula is admirably adapted, the trailing branches of flowers, 10—12 inches in length, being borne in rich profusion, and heightened in effect by being placed near the level of the eye.

The Violet Harebell (C. fulla)

is a delicate and lovely plant, and one that requires a more than ordinary amount of care in cultivation. Having a tendency to spread underground and send up shoots at a considerable distance from where the plant originally grew, it should be allotted a patch of ground to itself where the rather tender shoots can roam at will without being molested by neighbouring plants. Sandy rather damp peat suits this Tyrolese Harebell, and it is equally at home in a pot, pan, or the open border.

Edraianthus dalmaticus

is a charming rock plant, with a neat and curious habit, which renders it a decorative subject of much merit. The grassy, Thrift-like foliage is arranged in tufts, and the pale purple bell-shaped flowers in terminal clusters at the end of stout pinky stems. Full exposure to the sun and a free sandy loam suits this plant best, and all the better if the roots can wander by the side of a perpendicular stone or edging—at least under these conditions we have known it to do best. It dislikes coddling, and is by no means so well suited for indoor as outside culture.

The Vaccinium-leaved Knotweed (Polygonum vaccinifolium)

is a pretty shrubby creeper from the Himalaya, and one that, although perfectly hardy, is seldom seen in this country. The flowers are individually small, but arranged in neat tapering spikes of 2 or 3 inches in length, and of a delicate rose colour. In habit the plant is remarkably neat, and is seen to best advantage when hanging over large stones or elevated portions of the rockwork. As to soil, it is by no means particular, although it seems to do best in that of a light sandy nature and in a southern exposure. As an autumn flowering plant of great beauty we cannot too strongly recommend this beautiful member of the Dock family.

Erigeron Caucasicus

is a pleasing subject when in flower, and being of neat compact habit is well suited for the more prominent portions of the rock garden. The flowers are rosy-purple, but vary considerably in colour at their different stages of development, and are borne in loose masses on erect stems of over a foot in height. A rather dry soil and shady situation does well with

this plant, and where it finds these requirements is certainly a distinct and ornamental representative of the Fleabane family.

DRYAS OCTOPETALA

is, amongst our native plants, at present one of the most effective. In moist peaty soil it is of the easiest culture, and being of neat habit, and abundantly floriferous, should be largely grown in every collection of rock plants. The large, creamy-white flowers, surmounted on stems that seldom exceed a couple of inches in height, are just now very effective, and offer a rich contrast to the usual run of alpine plants.

ACHILLÆAS.

Amongst the Yarrow family there are several well worthy of cultivation, indeed we might, and feel inclined to add that deserve prominent positions, either on the rockwork or in the herbaceous border. Of these none is at present more effective than the Egyptian species (Achillæa æyptiaca), which with its finely cut Fern-like foliage and handsome heads of rich clear yellow flowers, possesses a distinct grace that is quite its own. Other worthy members of the same family are the white alpine Yarrow (A. Clavennæ), with its silky, silvery foliage; the downy Yarrow (A. tomentosa); and the rose coloured form of our native A. millefolium.

MONTBRETIA POTTSI.

A plant somewhat similar in growth and habit to the well known Tritonia aurea, is now covered with its beautiful branching spikes of bright orange-scarlet flowers. Being rather expensive to purchase, and in many places somewhat difficult to establish, this plant is but little known; but now that its requirements as regards soil and situation have been found out, and its value as a decorative plant thoroughly established, we may expect to find it ere long included in most collections. It likes a warm, sheltered border, and where slight protection to its young growths is afforded. Division of the bulbs is also to be recommended, as the plant is so prolific of offsets that, unless frequently divided, these are inevitably starved—ill-grown plants with but few blooms being the result. *Emergo.*

## ORCHIDS IN FLOWER AT ST. ALBAN'S.

SOME very interesting things are now in bloom with Messrs. F. Sander & Co., whose immense establishment becomes more interesting every month as the last new house approaches completion. The large structure just finished, and which is to be devoted to Lælia elegans and L. purpurata, contains a novel feature, consisting of a bold ornamental rockery, with a miniature waterfall at each end, and these are to be planted with Lælias, to grow as they are frequently found in their native habitats. The experiment is worth trying, as the effect of the plants growing and flowering on such cleverly constructed pieces of rockwork would be charming.

Throughout the seemingly endless quantities of healthy, well-grown plants, many novelties are in bloom, and in the ends of the principal houses some very effective displays are made, one of the most beautiful and effective being two large groups composed entirely of the scarlet Disa grandiflora and a fine lot of the superb strain of Odontoglossum Alexandræ, for which Mr. Sander's establishment is noted. The Disas have grown with the Odontoglossums and kept perfectly healthy and clean, and are now furnished with a great display of flowers of the finest quality which, mingling with the snowy blooms of O. Alexandræ, form a combination in scarlet and white which, shown off by the other tints which the flowers possess and the backing of green foliage, leaves nothing to be desired as a floral arrangement. It is a pity that such an arrangement is beyond the reach of great numbers of those who could fully appreciate it, but on the other hand there are many small amateurs who grow both the plants of which it is composed to perfection and consider them neither difficult nor expensive. The group next in interest and which has perhaps never before presented itself to the Orchid grower at one view before, is composed of almost the whole of the species of Anguloa in flower, comprising the lemon-yellow A. Clowesi, many plants each with several large blooms; A. Ruckeri, yellow, spotted with red; A. R. sanguinea, with flowers tinted with bright brownish-red; A. eburnea, with pure ivory-white flowers, of the size and shape of A. Clowesi; A. Turneri, with large wax-like flowers, white, spotted with dark rose; A. uniflora, with white flowers like, but narrower, and much less showy than those of A. eburnea; and A. virginalis, with flowers like A. uniflora but spotted in the centre with red. The whole group is very effective with the large upright Tulip-like flowers, all of which emit such a penetrating and grateful aromatic odour. Anguloas are coming to the front, and well they deserve notice, for they are handsome and free growing if treated like Lycaste Skinneri, and grown in a house a few degrees warmer than that in which the Odontoglossums are kept.



FIG. 42.—ODONTOGLOSSUM RUCKERIANUM. (SEE P. 199.)

Cattleya Gaskelliana supplies the whole of a bank in the Cattleya-house with bloom, and the great size, beauty, and variety of tint in the different specimens admit of it making a charming and varied display without aid from other species. Some of the plants have rosy sepals and petals, and crimson and orange lips, and others are almost pure white, the intermediate forms being abundantly supplied, indeed C. Gaskelliana seems to exhibit as great variability as C. Mossiæ, and from its free growth and certainty to flower it will probably run equal with C. Mossiæ and its varieties in public favour. All growers alike seem to grow this plant well, and all now agree in praising it as a beautiful and fragrant plant, and all the more useful that it has such a protracted time of flowering.

Also in bloom in the Cattleya-house are C. superba splendens, C. elegans, C. guttata, and the varieties of C. Eldorado. In the long intermediate-house a good batch of the ivory-white Mormodes luxatum eburneum is in bloom, and also a new rose-spotted variety of it; Cycnoches chlorochilon (the Swan Orchid), Barkeria cyclotella, Galeandra dives, Calanthe pleiochroma, C. Textorei, C. Dominiana, Oncidium Limminghei, and a new yellow Trichopilia, and a white Epidendrum. In the Odontoglossum-house, on the roof of which Lapageria alba is blooming, a good sprinkling of flower yet remains, the varieties bearing it being chiefly of the large massive white-flowered kinds—the spotted ones, which are showing up profusely, being not now much in bloom. The many thousands of plants are in the most perfect health, and never yet since their importation has any insect except a few common aphis appeared among them.

In the warm house Phalænopsis Schrœderii, P. Sanderiana, many plants of the new Angræcum Leonis, the new white Aërides Wilsoni, the equally handsome new A. Ballantinei, A. Lawrenciæ, A. Sanderianum, A. Rohaneanum, and several other new Aërides and Saccolabiums are in bloom or bud, one species of the last-named genus being particularly distinct, with dense spikes of white flowers with carmine lips, the blooms resembling in shape S. cœleste more than they do S. guttatum, after which the habit of the plant takes.

The long covered way which connects and shelters

the ends of all the houses is now filled with thousands of Mexican Orchids, which thrive grandly in their airy and cool quarters. This lean-to structure is 350 feet in length, and in it are fine batches of Lælia majalis (some in bloom), L. autumnalis and its varieties, L. albida, Odontoglossum Cervantesi, O. Rossi, O. citrosmum, O. Insleayi leopardinum, &c. The sprays of O. citrosmum look very handsome hanging overhead, and the flowers on the O. Insleayi leopardinum are of the best quality, perfect in shape and extraordinarily fine in colour. The whole establishment is of great interest, and it is rather a relief to visit it when none of the large sections are in full bloom, as the rare things are the more readily found and examined.



Fig. 43.—Odontoglossum Wilckeanum. (see p. 199)



Fig. 44.—Odontoglossum triumphans. (see p. 199.)

## TRADE MEMORANDUM.

A good many nurserymen, it appears, are anxious to know the present address of Messrs. Hancock & Gankroger, late of Newcastle.

## CHERRIES IN POTS! A CHERRY-HOUSE.

"Come and see my Cherry-house." Such has been the oft-repeated invitation of Mr. Rivers for the past two or three years. Like many others, I had often feasted my eyes on the beautiful dishes of Cherries exhibited at South Kensington, Regent's Park, and elsewhere by Mr. Rivers: it had even been my good fortune to have the privilege of tasting these tempting fruits, and of comparing their merits. All that was very well and good—but, as Mr. Rivers said, "You should see them growing." Thus tempted, I went the other day and had a feast of Cherries! Literally a feast! One can form but a very faint idea of the wonderful beauty of a house of Cherries in pots without seeing it. Amongst fruits, Cherries are probably the most tempting of all, their bright glossy appearance renders them peculiarly so, and yet how little attention is paid to their cultivation. Beyond having an old tree or two on the walls, the fruit of which is mainly grown for the birds, there are no Cherries in ordinary gardens except Morellos. Peaches, Pears, Grapes, Apples, &c., are grown in quantities and receive special culture, but not so Cherries; and yet so easy are they to grow and so well worthy of all the care that can be given to them. Why not a Cherry-house as well as a Peach-house? There would be more enjoyment with the one than the other. It is not always that one cares to eat a Peach, but a Cherry ripe is always pleasant. Such a house as that of Rivers' may be constructed for comparatively nothing. It is but a structure—a low span-roofed covering of glass, some 60 feet in length, and about 14 feet wide, with abundant ventilation on both sides—an important matter for Cherries when in flower. It is unheated, no expense in that way being required. There is not even the usual trim pathway, or anything of that sort, the pots, &c., standing on the maiden earth, the freshness of which, as Mr. Rivers observes, is so much better for the well-being of the trees than neat appearance.

Simple and unpretending as the house itself may be, the appearance of the little trees themselves, laden with their dense clusters of fruit, is truly charming. Seldom have I seen trees more heavily cropped, the quantity of fruit seeming to exceed the leaves, and yet all in the most robust health and vigour; no insects, or appearance of any, to be seen. For the most part the trees are growing in 10 or 12-inch pots, and vary from 3 to 5 or 6 feet in height, every one being heavily laden with fruit, ripening in succession. The first fruit, Mr. Rivers stated, was gathered on June 1 off the Early Rivers, a large and very excellent variety of the Black Circassian class raised by Mr. Rivers; and here, at the end of July (two months), the same variety was still being gathered. This is another charming and important feature of Cherry culture under glass—the great length of season the fruits will keep fit for use. I tasted some ten or twelve varieties, which were all excellent, but to my mind none possessed that rich sweetness of flesh to such a degree as the Early Rivers. It is a variety that should be cultivated everywhere.

In regard to culture Cherries require nothing special, they delight in good loamy, somewhat calcareous soil; the chief care is in providing plenty of air for the setting of the flowers in spring, and keeping clear of insects. I hope to see Cherry-houses in every good garden, and am quite sure nothing would give greater satisfaction. *A. F. B.*

## MARKET GARDENING.

(*Continued from p. 170.*)

However much practices may have varied, as explained in the past, as between market garden farmers and that of gardeners in private places, a greater divergence still has to be explained in connection with the Vegetable Marrow, and indeed, as I shall show in due time, the Cucumber also. Gardeners, as is well known, invariably prepare heaps of manure, or some form of garden waste representing heaps of manure, upon which mounds or layers of soil are placed, whereon young Vegetable Marrow plants are placed, and generally afforded some form of artificial protection, such as handlights, frames, &c. Such protections have their advantage in connection with tenderly reared plants, and in forcing on the plants so that they produce fruits a week or so earlier than would otherwise be the case. As against this system, field culture is of the very simplest description. The land receives a thorough manuring to the extent generally of an outlay of £10 or £12 per acre. This manuring must not, however, be considered an excessively high quantity, as will be better understood when I explain that ordinary manures for Potato crops all but invariably give a relative cost also of £8 to £10 per acre. But I have thus far described the more favourable practice followed in connection, as not infrequently manure is placed down the middle of "lands," upon either side of the centres of which crops are still growing. It is ploughed in, and at the proper season the seeds are sown. Mark here the difference between field and garden culture: in the latter nursed and potted plants are planted out, and subsequently protected, whilst in the former case the seeds are simply dibbled into the ground in the exposed open fields, and, as regards the season or date when the seeds are sown, it also appears exceptional. They are dibbled three seeds in a circle, a few inches apart, and about 3 or 4 feet apart in the rows, during the early days in

the month of May of each year. So soon as the seeds have germinated, and the plants are well through the ground, they are carefully hoed between, and subsequently the land on either side is ploughed up simply to give a clean surface, over which the plants extend and grow. It may be useful to add, the space accorded to the plants consists of an ordinary "land," as ploughed per row as described. Excepting a hand-hoeing, should it be subsequently required, this is all the labour given to them. The results are, the plants rapidly extend and cover the whole space, and for early cropping and prolificacy they greatly excel every form of garden grown on the mound of manure or any other system. The Marrows form readily; flowers being numerous and the fertilising process certain, the fruits are rapid in development, and, if left to grow, large in size.

Here, again, we are brought face to face with the fact that the excessive use of manure and loose soils are opposed to free, full, and abundant fruitfulness. But beyond this, whilst great prolificacy is assured, so also is longevity linked with sustained vigour. If private garden growers would only take these facts into consideration, and as far as possible act upon them, we should have less complaint of Vegetable Marrow plants "dying off," the female blooms dying away fruitless, and that the plants are infested with "fly" beyond recovery. Under the above very common system of field culture these disheartening drawbacks are simply unknown.

Whilst I have given general dates as to the early planting or dibbling in of the seeds, it will be well to qualify these statements with the explanation that each grower must judge of the fitness of the weather each year, and sow his seeds accordingly. Should a cold late spring with much rain and its consequent very wet soil result, it will be necessary to defer sowing the seeds as under such circumstances they are likely to rot in the ground in lieu of the healthy "spearing," and subsequent growth desirable. And I would add this remark in their behalf—if from the exigences of space any desire to utilise and clothe existing rubbish heaps, &c., and it is desirable so to grow Vegetable Marrows, always take the precaution to tread down such materials and to make them with as firm a base as possible, so that the roots can ramify and extend, forming as firm a roothold as possible, which is the best means to attain a desirable fruitfulness with lasting health.

As regards the artificial heat often sought by small growers, the facts I have given above amply dissipate the notion that any actual need for it exists. Finally the thoughtful grower must ere now have been met with the query, In what habitat can Vegetable Marrows have formed loose mounds, such as is often formed for them artificially whereon to grow? The answer should, as I believe it will, lead to an improvement in the methods adopted; even Melons delight in firm soil, and it is a mistake to imagine that plants do not appreciate firm roothold. *William Earley.*

*(To be continued.)*

# The Herbaceous Border.

## ONOSMA TAURICA.

In recommending this very desirable plant to the notice of your readers "J. S." advises that it should be propagated by division, or by seeds. I have had a very familiar acquaintance with this Borage-wort for many years past, and a tolerably extensive knowledge of seed catalogues, wholesale and retail, and I have never yet seen the seed offered by any vendor, neither have my plants ever yielded any. I am therefore induced to ask "J. S." if he was ever fortunate enough to obtain any; if so, it deserves to be put on record as a remarkable fact. *Soixante-deux.*

### EPILOBIUM LATIFOLIUM.

"Oxon," in his notes on the botany of Iceland, in the *Gardeners' Chronicle* of August 8, speaks of having seen this when travelling there, and it being by "far the most beautiful flower he found there." I do not wonder at his remarks, for when grown in this country it is a most interesting plant; the flowers are so large, being more than 1¼ inch in diameter, and the foliage is also distinct from all other species of Willow-herbs. It is, however, by no means a difficult plant to cultivate. I remember once seeing more than a yard square of it growing in an orchard, and a pretty sight it was, the ground being completely carpeted by its glaucous foliage. An example on the rockwork, and also a nice stock of healthy plants in pots, may be seen in the York Nurseries, where it has been grown for many years. *R. P.*

# The Propagator.

## ONOSMA TAURICA.

In calling attention to this truly lovely Boraginaceous plant, I think your correspondent (see p. 150) has decidedly overlooked the best means of propagating it. "J. S." observes:—"The way to propagate it is by division, which should be effected in spring, just as the plants begin to grow." I wonder who would care to disturb a fine plant of this gem at this season? for just as it begins to grow it also begins to show flower-spikes, and then what a sacrifice must follow. It certainly may be increased in this way; still it is a risky business to part its woody rootstock, and to witness the death-rate, too, is by no means a pleasant thing. I have had a fair experience with it, and to lift it would be the very last step I would take. If success must be obtained it will be by cuttings. During June and July these are abundant. Strip them with a heel attached from the main body of the plant, and insert them without further preparation in very sandy soil in well drained pots. Keep quite close under handlights till rooted. This takes about three weeks: then expose by degrees. I have rooted hundreds in this way, and one thing I always strictly adhere to, and that is, never to use a knife in making the cuttings. "J. S." also mentions seed, but where may seed be bought? I have tried over and over again to seed plants, but in vain, and I remember once some years since asking Mr. Thompson, of Ipswich, respecting some, and his reply was that if I waited for seeds he was afraid I should wait a long while. Has your correspondent succeeded in seeding this plant?—if so, will he confer a favour on many readers of the *Gardeners' Chronicle* by stating his *modus operandi*. *E. Jenkins.*

# Orchid Notes and Gleanings.

## TRICHOPILIA LEPIDA.

In this beautiful Orchid the leaves are solitary, evergreen, oblong-acute, the flower-stalks emerging from the base of the oblong, smooth pseudobulb. Each flower measures about 5 inches in length, and has linear lanceolate sepals and petals, rosy-lilac, with white edge; the lip is large, folded round the column, and expanding in front into an oblong, crenelated limb, with a purplish throat, and numerous smaller and paler spots. The plant blooms in spring. The species may be grown in pots or baskets hung from the roof, but where they can be shaded from the burning sun. Rough fibrous peat, with a few lumps of charcoal, is the best potting material. *Orchid Album*, t. 197.

### MAXILLARIA STAPELIOIDES.

This pretty little Orchid has been flowering in the Birmingham Botanic Gardens for the last month. It reminds one very much of a Stapelia. Although an old inhabitant of our Orchid-houses it is now seldom seen. A native of Brazil, and flowered in the Glasgow Botanic Gardens in 1830, from which a figure was taken for the *Botanical Magazine*, plate 3877. *W. B. Latham.*

### ONCIDIUM PRÆTEXTUM LEANUM, *Rchb. f.*

It is with great pleasure I state, that Mr. W. Lee was so kind to send me once more a fresh inflorescence of this gorgeous variety, proving the stability of the tri-labellia, or, if you like better, Peloria, though you might at least not call it regular. *H. G. Rchb. f.*

### DENDROBIUM HILLII.

A fine evergreen species with fluted pseudobulbs and oblong leaves. The dense racemes of flowers proceed from the top of the bulb. Each flower is star-like, with narrow spreading, creamy-yellow segments, and a short trowel-shaped acute lip, barred with violet rays. It has been figured in the *Gardeners' Chronicle*.

### CYPRIPEDIUM LEEANUM SUPERBUM ×.

A pretty coloured illustration of this hybrid is given in the last number of the *Orchidophile*. It was raised by Mr. Seden from Cypripedium insigne var. Maulei, fertilised with pollen of Cypripedium Spicerianum, itself a hybrid. The flower is intermediate between its parents. The upper sepals broad, white, marked with violet spots, the lateral petals linear, oblong, undulate, of a yellow ground colour, overlain, except at the margin, with brown and spotted with purple. The lip is rich bronzy-brown.

### MILTONIA CANDIDA GRANDIFLORA.

The flowers of this plant, which has the habit of an Odontoglot, are borne in erect racemes. Each is 3 inches across, with five oblong, spreading segments of a yellow ground colour, heavily blotched with brown. Lip projecting, folded over the column at the base, dilated in front into an oblong, lobulate white limb. This plant should be grown in the Cattleya-house, shaded from the direct sun, and well drained. *Orchid Album*, t. 200.

### CURIOUS PLANT OF HABENARIA BIFOLIA.

Last week I had sent me from the island of Anglesey a curious plant of the Butterfly Habenaria, widely different from anything I had seen before. The whole plant was much less in size than Habenaria bifolia generally, the spur and two lower sepals being much shortened, and the labellum upturned. The tuber, leaves, and stem agreed in every part with those of H. bifolia, only they were proportionately less. On examining the pollinia I found them placed relatively much closer than in the normal form, and the viscid discs being black gave to the interior of the flowers a rather striking appearance, and very different to those of H. bifolia. That the up-turned labellum prevented, to a great extent, insects entering the flowers was apparent from the seedless capsules. *A. D. Webster.*

### CATTLEYA HARDYANA.

During the month of May the Cattleya Sanderianae flowers of which measured 11 inches across, was bloomed by G. Hardy, Esq., Timperley. In the month of June and July a number of other forms of the same species, much darker in colour, though less in size, were open, and admired by many, for then there were blooms open by the dozen for comparison, but though the dimensions of the May blooms were startling, and the number and colour of the June ones equally bewildering, there is one in flower at the present time that outstrips all it has been my pleasure to see. I am warranted in that statement, for many of the best growers and authorities have seen it, and each declares it to be the finest Cattleya bloom that has ever come under their notice. It is not gigas, nor is it Sanderiana; but if the best points of these were worked together, with a dash of aurea thown in, some near approach to C. Hardyana may perhaps be the result. The plant was imported about five years ago, and was purchased for Mr. Hardy by another grower when buying a lot for himself, who naturally enough took them all to be C. Sanderiana. However, in a couple of years the plant in question opened its first blooms, when it was plain to the owner that a fresh form had appeared; it has flowered once again, and now for the third time it is in bloom, bearing four flowers on a spike, which have come away immediately on the development of the new growths. The blooms are 8 inches across, the sepals and petals of a deep mauve colour, the petals having their outer edges somewhat reflexed, as is the case with Lælia purpurata. It is, however, is the lip that the distinction occurs—this is 3 inches across, and about the same in depth, the lower part being of a most intense rosy-purple. About half way up this abruptly ceases, though the centre is still of the same colour, beautifully lined with yellow. The sides again of this purple and yellow lining are taken up with a grand piece of golden-yellow, which again is margined with the shades of rosy-purple; the upper part of the labellum is of the same purple, whilst on the inside of the throat the golden and purple stripes are carried right through to the column. It is strongly scented,

and would appear to require treatment exactly similar to that given to C. Sanderiana. This plant has twenty-four bulbs, with three leading growths, though it is not as yet a large plant. I venture to say that if it was put up by auction at King Street or Cheapside it would fetch a higher price than as yet has ever been given for an imported or established Orchid in England. *W. Swan, Oakley, Fallowfield.*

# The Kitchen Garden.

## FRAMES.

In many gardens it will be desirable to keep the frame Cucumbers in a healthy bearing state as late into the autumn months as possible. To accomplish this a little careful management will now be necessary, in respect to watering, airing, and closing the frames early in the afternoon to make the most of sunheat. A good lining should now be made up round the frame. Henceforth the plants should not be damped during dull weather; but when water is required it should be applied when bright sunny weather offers a favourable opportunity. The first signs of mildew should be checked by the timely application of sulphur sprinkled over the affected parts.

### Plants for Winter.

If seeds or cuttings were put in when recommended in a former Calendar, to supply the plants for the first division of the winter Cucumber-house, they should now be large enough to place in their winter quarters. Before bringing in the fresh soil the house should receive a thorough cleaning by well washing the glass and woodwork, and by applying a couple of coats of fresh lime-wash, which should have a little sulphur mixed with it, to the brickwork.

A somewhat lighter and more porous soil than is generally used for summer plants will be found most suitable for the winter ones—say not quite three-fourths of good fibrous loam, which has been in stock some time, the remaining part good leaf-soil or well-decayed manure, free from worms, &c.; to this should be added a little broken charcoal and a little road-scrapings or rough brown sand.

### Tomatos for Winter.

Small-fruited varieties are best for winter and early spring fruiting, such as Ricket's Victoria and Orange-field. These plants should be in their fruiting pots, or planted out to grow on a trellis, by the end of August or beginning of September; they should then yield fruit in succession to the outdoor plants. Winter Tomatos should always be placed in a house where there is a good command of fire-heat, otherwise they are scarcely worth the trouble of growing with a view of producing ripe fruit in mid-winter; but if the plants remain in a healthy state until the following spring, they would then ripen fruit much earlier than spring-raised plants.

### Mushroom Beds.

As soon as a supply of droppings and short litter can be had it should be collected, and preparations made for the first bed of the season.

### Second Early Potatos

The skin on the tubers is now firm, and the haulm indicates that the lifting time has arrived. This should take place before rain saturates the soil. The eyes on the tubers are very prominent, and moisture after this long season of drought will be sure to start them into growth and bring on disease. For the above reason they should not be put in large heaps when stored, but spread out somewhat thinly, and well covered over to prevent the tubers becoming green. Select those tubers of an even medium size for seed purposes; they are best placed on shelves with a circulation of air beneath, and the tubers should lay thinly.

### Planting Out, &c.

In finally planting out the remaining winter stuff, the plots whereon three important crops are to be grown next year should be decided upon—viz, Carrots, Onions, and early Potatos. It is not absolutely necessary that these plots should lay vacant all through the autumn and winter; but a crop should be placed on them, which can be cleared off not later than the end of November, in order that the necessary preparation of the ground may take place. Ground to produce handsome clean roots requires the highest cultivation and the timely application of dressings to cleanse it from insects, &c., which so much disfigure them; Lettuce, Endive, Turnips, and early Coleworts, will be suitable crops. *S. H. Richards, Somerley Gardens, Ringwood, Hants.*



# Plants and their Culture.

## GREENHOUSE HARD-WOODED PLANTS.

Indian Azaleas.—The latest even of these to make their growth should, ere this, have completed the same; and if not already shifted from their growing quarters into the open air, the sooner it is done the better for the future cleanliness of the plants as well as being a great aid in the perfect maturation of the young wood and the development of the flower-buds for another season. A gradual course of exposure to the full power of the sun's rays should be adopted; this needs to be more closely followed out if any part of the stock has been of late under the shade of Vines or Peach trees: should the young foliage become burnt a check will be given to the perfecting of the flower-bud as well as being a disfigurement to the plant. A close watch must be kept against any inroad of a colony of black thrips, which will quickly do irreparable injury, increasing so rapidly as they do at this season of the year. Fumigation is the most effectual remedy, but where this is not desirable, a thorough good syringing with a solution of soft-soap and tobacco-water, rather stronger than one would be disposed to use it on Peach-trees, will be found to answer the purpose. Use should also be made of the syringe to give the plants a good damping as the sun declines on bright and warm days. If any of the stock requires attention in the way of potting, this month is about the best in our experience to perform the same. The growth for the present season being made, no over-luxuriance can follow that operation, as would be the case if the potting were done immediately the plants were out of bloom, they being kept in a moist growing atmosphere for a few weeks. However advisable in the case of many types of plants, it is not to be recommended in the culture of the Indian Azaleas. Fibrous peat of the best quality obtainable should be the staple compost; if, in the opinion of the cultivator, this should not be quite up to the mark, some charcoal about the size of common nuts (larger or smaller according to the size of the plants) should be added. This, with a liberal addition of silver-sand, will be found to suit their requirements. The potting of these, as well as of all hard-wooded plants, is not an operation to be hurried over in the least; a little extra time spent on the work will amply repay itself. Firm ramming of the soil around the old ball should always be practised; and large shifts are not desirable in any case. An inch of space all around the ball of the plant is ample at any time, even less can well be made to suffice. Azaleas will thrive best when somewhat pot-bound, and are not nearly so liable to injury from excess of water at the roots at such times, besides being decidedly more floriferous. After the potting process is completed be careful in the arrangement of the plants to see that none are left out of the level. This is an omission that is frequently made, and thought to be of little importance. It is desirable at all times, but with newly potted plants it should be made imperative, an equal absorption by the soil of all the water that is applied being of the first importance, particularly with these.

### Rhododendrons.

The greenhouse section of Rhododendrons, including those which thrive best in an intermediate-house, should at all times be kept in the smallest pots possible, consistent with their health, in order to induce them to develope flower-buds. It is not desirable to expose these in the open air, particularly the more tender varieties, but a light airy greenhouse would suit all of them well for the present. *James Hudson, Gunnersbury House Gardens, W.*

# Fruits Under Glass.

## STRAWBERRIES IN POTS.

Owing to the prevailing dryness, Strawberry runners will at most places be somewhat scarce, and probably not quite so good as usual, excepting where the method of setting apart a portion of young vigorous plants for the purpose is adopted. In this case, this year, it will prove very advantageous, as the yield of good runners will more than compensate for the fruit that was sacrificed for this particular purpose. Runners layered at about the customary period will now (August 6) in most cases be fit to remove from the parent plants altogether, and placed in a convenient place near where the potting will be done. This operation should be proceeded with forthwith, first attending to early kinds, as these plants should develope and mature a growth early in the season. They should not be over-potted, 4½ and 5-inch pots are amply large for the purpose. Keep the crowns of these plants well up above the surface soil in the pot. This will in some degree counteract the effects of damp when they are started, and subsequently also newly potted plants will be benefited if left in a moderately shady place out-of-doors for a few days until the roots have taken hold of the new soil, when they should at once be taken to the place appointed for them. This should be where every ray of sunshine can reach them, and, for convenience sake, as near the water supply as possible. As a base to stand the pots on nothing surpassing a good hard bed of ashes. The after-culture, as watering, especially, should be entrusted only to careful hands, for if this operation is unskilfully done it will soon cause many plants to become sickly and fade away. As the plants advance in growth and the pots fill with roots some stimulating manure should be mixed with the water, and be given to the plants about twice a week in dry sunny weather; and particularly whenever dew is absent the plants should be syringed with water through a fine rose once or twice a day, at morning or evening, as may be necessary. When runners appear pinch these out at first sight, and keep the plants free from weeds, and above all other matters see that adequate space is given the plants to develope growth properly. The current season is unusually favourable to the increase of insect pests, and at most places the plants will be more or less infested with the red-spider, and if this pest cannot be exterminated its effects can be materially checked by means of dipping the foliage of the plants into a solution made with strong tobacco and a little soft-soap added. This should be done prior to putting the plants into the fruiting pots. *G. T. Miles, Wycombe Abbey.*

# The Hardy Fruit Garden.

## APPLES.

The young growths of these should when not required all have been cut-back by this time, and the small shoots removed, so as to allow the sun and air to ripen the branches left; without this it is impossible to obtain thoroughly fruitful wood. The gathering and storing of early kinds will now demand attention. Early varieties should never be gathered before they are thoroughly ripe, for if gathered a day or two too soon they are sure to shrivel, and become worthless; and again, if left on the trees till over-ripe, many varieties turn mealy instead of being crisp and juicy; therefore, where good fruit, fit for dessert, is wanted, it should have great care and attention in gathering. Where Apples are appreciated for dessert it is important to know the best varieties that ripen early. The following varieties are grown here, mostly on the Paradise stock, which to me appears to favour early ripening:—Our first variety to ripen was Juneating, closely followed by Margaret or Striped Juneating, which as grown here is much larger than Juneating, and is a very free bearer. Early Harvest is an excellent variety, and should be included in every collection. Mr. Gladstone, now ripe and producing fine handsome fruit. Irish Peach, the first to flower (April 25), will not be ripe for a few days. Oslin, in flower April 27, now ripe. These are the best early kinds grown here.

### Peaches and Nectarines.

Remove portions of the leaves where they shade the fruit, and keep the trees nailed closely to the walls: insure having the wood thoroughly ripened. Trap earwigs on walls; a simple plan is to place small flower-pots, filled with hay or short grass, among the trees; examine them occasionally, and destroy the insects. Give water to wall trees when required, and protect all fruit that is ripening from birds. *J. Smith, Mentmore, Bucks.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Aug 17 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| TUESDAY, | Aug 18 | Weston-super-Mare and East Somerset Horticultural society's Show.<br>Shropshire Horticultural society's Show, at Shrewsbury (two days) |
| WEDNESDAY, | Aug. 19 | Sale of Bulbs from Holland, at Stevens' Rooms<br>Sale of Greenhouse Plants, at Lynton House, Clapham Common, by Protheroe & Morris<br>Wilts Horticultural Society's Show, at Salisbury |
| THURSDAY, | Aug. 20 | Sale of Valuable and Imported Orchids, from F. Sander & Co., at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Prothere & Morris' Rooms. |
| FRIDAY, | Aug 21 | Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Aug 22 | Sale of Bulbs from Holland, at Stevens' Rooms. |

THOSE who take a narrow view of what is called Nature have been known to object to what they regard as the artificiality of lawns and flower borders. The owner of a terraced garden around his dwelling, and of a beautiful park beyond it, remarked lately, "I make myself at home here with Nature." "Do you?" said a critic. "It seems to me you have given the dear old Dame the cold shoulder. You have at all events turned her out of your garden and thrust her beyond the park." In a certain sense, and taking a limited view of Nature, this is true. But here let us ask "What is Nature?" Seen from the windows and sparkling amidst the old Oaks upon its emerald green shores, is a bright sheet of water. "That is Nature!" says the critic, very truly, as we think, though the lake is artificial, formed as it was by a happy stroke of genius on the part of a landscape gardener who dammed the valley down which a stream ran, and thus created a lake of 70 acres, and performed the feat within a fortnight. The critic claims, too, as belonging to the realm of Nature, the noble Cedars of Lebanon in the park, the huge Pinasters and Stone Pines, as well as the Scotch Firs, with the grand Silver Firs near the water, and some Tulip trees blossoming where they were planted probably on the first introduction of that tree; and he claims of course the sweet Chestnuts as well as the Oaks, the Deodars as well as the Yews, exotics as well as natives. In point of fact the true "domain of Nature" has no existence in this landscape, unless he will concede that foreign trees are natural to it, though they were domiciled here by art and by the scientific efforts of man.

It seems to us that the term Nature is sometimes misused by those who criticise the ornate state of gardening. Good taste and common sense have long since decided that the immediate surrounding of a house must be in some degree artificial, in order that they may be harmonious, but it does not follow that they are for that reason unnatural. The love of flowers is displayed even in great cities, and however artificial the various methods of producing them may be, they are as much Nature's own, foreign in extraction though they be, as a mountain Daisy.

In the country we all endeavour to surround ourselves with a cultivated plot, however small, called THE GARDEN. It may boast a few fruit trees, most of them probably natives of a foreign country. More than half the vegetables are foreign, and nearly all the flowers; but Nature, like genius, is of no country, and exotics in England, from the stately English Elm, to the Tree Ferns and European Palms, which are planted out in shrubberies in summer, are all subjects of Nature, foreign though they be in origin. Looking at the matter broadly, Thistles and Brambles, and other such "rubbish," growing in odd corners and waste places, are not a bit higher or lower in Dame Nature's view than the most ornamental of the plants of culture. We prefer the latter around our houses, the former in our game coverts, and we have ransacked the world for novelties, which are to us exotics, though the critics of the flower borders will please observe that they are not foreign to Nature.

It seems, then, that the lover of flowers may find himself at home with Nature even in a flower garden of the most ornate description. Perhaps there are a few statues and vases of bronze or marble among his bright parterres, with a fountain bringing by artifice a liberal flow of water into the midst of what is certainly a very artificial acre of ground. Let us hope so, since Art is not unnatural, but, on the contrary, it serves as an agency which unites and harmonises Nature with the mind of man. "The excuse of artificial gardens," said the late Lord LYTTON, a lover of gardens and a good gardener at Knebworth, "is, that the statue, the fountain, the harmonies of form and colour into which even flower-beds are arranged, do bring Nature into more familiar connection with all which has served to cultivate, sweeten, elevate the mind of man." Both Nature and Art speak in flower gardens, reminding cultivated minds of the symmetries of form and beauty expressed in geometric figures, of the harmonies of hue and tint, and of the secrets of light and colour revealed by modern research. An artistic garden under such scrutiny as is here suggested is relieved of its alleged monotony through the images and reflections it occasions, and by its obvious connection, to the philosophic eye, with the æsthetic history of man's relationship with Nature. As SHAKESPEARE most truly said of the art which "mends Nature," "the art itself is Nature."

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—— JACOB BOBART.—The gardener whose portrait we now give was the predecessor of the AITONS, the SMITHS, the MACNABS, the BAXTERS, and others who have rendered our Botanic Gardens famous. The Oxford Garden, of which we lately gave some illustrations, is the oldest Botanic Garden in this country, and JACOB BOBART was the first gardener. It is evident from a mere glance at his countenance that he was a man of strong character, and could hold his own among the dons of the University. His name occurs frequently in the *jeux d'esprit* and "skits" of the time. Of him the late Dr. DAUBENY writes:—

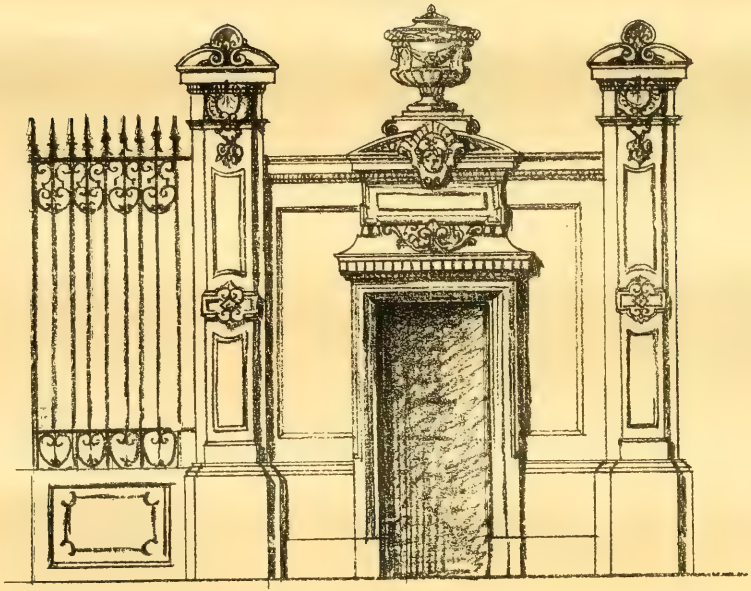
"During the period that the professorship was held by MORISON, JACOB BOBART the elder, a native of Brunswick, was gardener or supervisor. There is a small whole-length portrait of him in the frontispiece to *Vertumnus*, a poem on the garden; 8vo, Oxford, 1713. In this he is dressed in a long vest, with a beard, which, it is said, on feast-days he used to have tagged with silver. He died February 4, 1679-80, at the age of 81, leaving two sons, JACOB, who became Professor, and TILLEMONT, who was also employed in the physic garden. The elder was buried in the churchyard of St. Peter's-in-the-East, where there is a small tablet to his memory against the south wall. He printed a catalogue of the plants in the garden in the year 1648, which was reprinted in 1658, and from this it appears that about 2000 species were then cultivated, 600 of which were English. On the death of MORISON, in 1683, the son of this BOBART, also named JACOB, succeeded to the Chair of Botany, and continued the labours of his predecessor by the publication of the third part of the Oxford *History of Plants*. He died in 1719, in the 79th year of his age."

—— THE ROYAL HORTICULTURAL SOCIETY.—Even in the dull season there is always something interesting at the meetings of this Society. Mr. WARE continues his permanent exhibition of herbaceous plants to a degree that excites astonishment at the amount of his resources. Think what it must be to keep so large a space filled from day to day from May to the present time with such a collection. On Tuesday last Mr. WARE's efforts were supported by the New Plant Company who filled the air with the fragrance of their golden Lilies; by two fine lots of Gladioli from Messrs. KELWAY and Messrs. J. VEITCH & SONS, the latter particularly interesting, as affording illustrations of a new break. Messrs. RIVERS' collection of fruit and fruit trees was very remarkable. The collections of wild plants from Harpenden excited great attention from the general public, and forcibly recalled the days, some thirty years ago, when the late Rev. Professor HENSLOW did so much good service in this way, and gave the village children a source of interest and amusement of the keenest yet most innocent kind. On this occasion we were pleased to see the intense purpose manifested by some of the schoolboys whom Mr. HENSHAW has inoculated with the love of plants. The specimens were well arranged and correctly named. They furnished mute but irrefragable evidence of a calcareous soil, or of growth along the river's bank and similar moist places. On another occasion it would be interesting to see other collections from sandy or clay soils, collections illustrative of the floras of woods, downs, heaths, &c., and others showing the root-development, the adaptations to particular soils, insects, &c. Among the Orchids were two or three of exceptionally interesting character, such as the varieties of Mormodes luxatum, so curiously twisted, and adapted not only by the twist, but by the blotches of colour, to secure that the pollen masses shall be removed by some insect and conveyed to another flower. We wonder what is the insect which does the work in the native country—a rather thick-headed one, with a long antennæ or proboscis, perhaps, if we may judge from the effect produced by a pencil point. Chysis lævis and the beautiful Cattleya Hardyana, elsewhere noticed, were also noteworthy. A beautiful Aristolochia, exhibited by Mr. BULL, under the name of elegans—a new species we hope soon to describe and figure—should remove the prejudice of those who think that these flowers are more singular than beautiful. These are only a few of the more striking objects shown on this occasion, for a detailed account of which we refer the reader to another column.

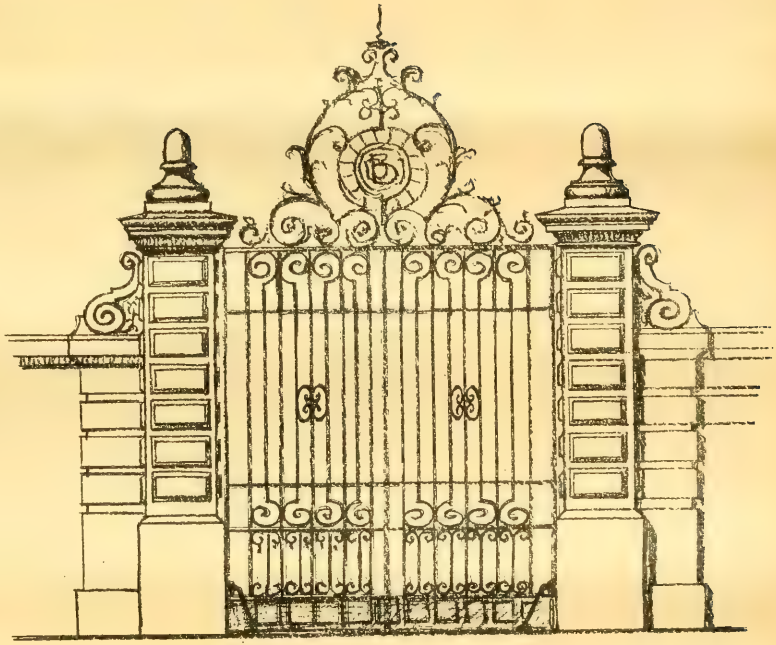
—— A TURNER MEMORIAL.—It would be surprising if some movement were not made to establish a memorial to CHARLES TURNER, and thus to commemorate his services to horticulture. And now two such memorials are mooted. We should have preferred one, but as the two have been started we can only wish success to both. The one is specially connected with the Dahlia, and is to take the shape of a prize to be offered at the forthcoming Dahlia Show—the other is of wider scope and more prominent interest, and comprises all varieties of "florists' flowers," or, as there seems to be in some quarters an objection to this term, to "garden varieties." We are not greatly concerned with names in such a case, the object being to commemorate the labours of CHARLES TURNER; and as he was wide in his sympathies and in his actions, so the memorial should have a broad basis. At a meeting held at South Kensington on Tuesday last, SHIRLEY HIBBERD, Esq., in the chair, the principle that a Turner Memorial Prize or prizes should be established met with unanimous assent. A committee was formed of those present, with power to add to their numbers; Mr. POLLETT was named as treasurer, and Mr. DOUGLAS as honorary secretary. Thus started there should be no difficulty in securing funds for an adequate commemoration of the long services of one who was as much esteemed for his personal qualities as for his labours towards the advancement of horticulture.

—— TURNER MEMORIAL DAHLIA PRIZE.—The committee of the National Dahlia Show have decided to offer a special prize as a memento of the help rendered in the establishment of this show by the late Mr. CHARLES TURNER, of Slough. The prize is to take the form of a silver cup, value ten guineas, to be competed for by amateur cultivators only, and to be offered for twelve show and six fancy Dahlias. The cup is to be competed for annually until it has been won three times by the same exhibitor, when it will become his property. In the meanwhile the winner of the cup at each competition is to hold it for one year only. Intending competitors must send in their entries before August 28, in accordance with Rule II. of the published schedule, to the Hon. Secretary, Mr. T. MOORE, Botanic Gardens, Chelsea, London, S.W.

—— FORESTRY AND FOREST PRODUCTIONS.—Under this heading Messrs. RATTRAY and MILL have edited a series of essays presented to the late Forestry Exhibition in Edinburgh. In the introduction is given the history of the rise and progress of the Exhibition, while the body of the work consists of the selected essays, varied in subject and treatment. We confine ourselves for the present to the mere announcement of the publication of the volume (Edinburgh, DAVID DOUGLAS), and shall take an early opportunity of alluding at greater length to its contents.



RUE. BLANCHE Nº 5.



AVENUE DES CHAMPS - ELYSÉES Nº 129.

## GARDEN ARCHITECTURE IN PARIS.
ENTRANCE GATES.

—— "The Herefordshire Pomona."—In the original prospectus of *The Herefordshire Pomona* the Woolhope Club announced that "it was not intended to make any profit from the work. The whole money subscribed would be spent on the publication, and therefore the greater number of subscribers there were the more valuable could each part be made by additional plates." This promise has been faithfully kept, and there is thus no want of delicacy in giving some details as to its actual cost. The work has grown so much in size in the course of its production that it has greatly exceeded the original ideas of the promoters. The first part contained six coloured plates, and in the succeeding parts the number advanced to eight, ten, twelve, thirteen, and in the present concluding part the number given is sixteen. There is a corresponding increase in the letterpress; and, as a matter of course, a proportionate increase in the cost of production. No trouble has been spared, nor any expense necessary to produce the work in an accurate and artistic style. With such rapid increase in size, and so well brought out, it could not be expected to be remunerative at the price at which it has been issued, and it has not been so. The total receipts, including an estimate of those expected from the part now about to be issued, amount to £1883 7*s.* 11*d.*, while the total expenditure has been £2233 5*s.* 2*d.*, leaving a deficiency of £349 17*s.* 3*d.* This deficiency will be somewhat lessened by the sale of the few remaining copies. It would have been greater but for some generous donations which it is very pleasant to record. Mr. Arthur Hutchinson has given donations as the parts appeared, amounting together to £30; and Mr. Thos. Walker, F.L.S., of Tunbridge Wells, sent a cheque for £20, with the kind request "that he might assist the Woolhope Club by contributing towards a work of such national importance." These thoughtful gifts have been highly esteemed, quite apart from their value, since they show so kind and generous an appreciation of the work itself. *The Herefordshire Pomona* has been printed by Messrs. Jakeman & Carver, of Hereford, under the immediate superintendence of the committee. The number of copies has been confined to six hundred, and the low price at which they have been issued, when compared with the cost of production, has not left much margin for the usual trade profits. We earnestly hope that financial loss will not be the reward of an enterprise carried out so thoroughly well, and one which is of so much value.




JACOB BOBART. (see p. 208.)

—— THE ROWE ORPHAN FUND.—The Rev. F. S. THORNTON writes :—"I have received the following contributions for the family of the late Mr. and Mrs. ROWE, in response to your appeal. Perhaps you will kindly acknowledge them in the *Gardeners' Chronicle* :—Miss Freeman, 5*s.*; Mr. W. Denning, 10*s.*; Mr. A. S. Kemp, 1*s. 6d.*; Mr. T. Elden, 5*s.*; Mrs. Downay, 20*s.*; Mr. W. Kettlewell, 4*s.*; Mr. J. Wallis, 5*s.*; Mr. G. Summers, 10*s.*; Anon., 5*s.*; Mr. J. Hussey, 3*s.*; A Friend, 5*s.*" In addition to the sums already mentioned in our columns we have received subscriptions from W. Miller, Combe Abbey, 21*s.*; George Lambert, Oakwood, 2*s. 6d.*; H. W. Pitcher, 2*s. 6d.* Through Mr. J. George, 10, Victoria Road, Putney :—Mr. G. Harding, Bristol House, Putney, 2*s. 6d.*; Mr. Davis, Manresa House, Putney, 5*s.*; Mr. Higgins, Albemarle Lodge, Wimbledon, 2*s. 6d.*; Mr. Smith, Basing Park, Alton, 12*s. 6d.*; Mr. Seaton, Mount Clare, Roehampton, 5*s.*

—— TWO-LIPPED CYPRIPEDIUM. — Messrs. COCKER & SONS, of Aberdeen, have obligingly forwarded us two flowers of Cypripedium superbiens, or Veitchii, from the same plant, in each of which there are two lips. An examination of the flower shows that the supernumerary lip is in this case not a transformed stamen, but there are really in these flowers four petals, two lateral and two lip-like.

—— BALSAMS, MESSRS. CARTER'S STRAIN.—We have had sent for our inspection a beautiful strain of these, when well grown, handsome plants. The flowers at first sight might be taken for very full-flowered Carnations, the petals being slightly reflexed, and in one instance marked as are flaked blooms of those. The colours, mostly selfs, were very clear and decided.

—— LÆLIOPSIS DOMINGENSIS.—A dwarf evergreen species, with oblong acute leaves. The loose, branching panicle springs from the top of the bulb, and bears numerous flowers, each about 2 inches across, with spreading, narrow lilac segments, and a trumpet-shaped lip, the lilac limb of which is traversed by purple veins, and the throat of which is marked by a yellowish blotch. It requires abundance of water in the growing season, and to be hung up near the light. *Orchid Album*, t. 199.

—— THE AMERICAN APPLE CROP.—We learn from our American correspondents that the Apple crop is likely to be light even for the "off-year"—that is, the year when the "Baldwins," which comprise a larger part of the crop than any other variety, do not bear freely. The Secretary of the Ohio Horticultural Society reports that the crop in that State will be very light. The Secretary of the Nebraska Society reports half a crop. The Secretary of the Massachusetts Horticultural Society endorses these statements from information received by him and courteously forwarded to us. The prospects in Nova Scotia have already been reported upon.

—— CHAMBRE SYNDICALE DES HORTICULTEURS DE BELGE.—At a meeting of this Society, held on August 10, the following awards were made :—

*First-class Certificates.*—To MM. Vervaet & Co., Ghent, for Dendrochilum filiforme. To M. James Bray, Ghent, for Cattleya Dowiana and Cypripedium Stonei. To M. Ad. D'Haene, Ghent, for Pandanus D'Haeneï; and to M. A. Peeters, Brussels, for Cypripedium Morganæ.

*Cultural Certificate.*—To La Compagnie Continentale d'Horticulture, Ghent, for Vanda Batemani.

*Commendations for Novelty.*—To MM. Blancqaert & Vermeiren, Gendbrugge, for Begonia Souvenir de l'Exposition. To La Compagnie Continentale d'Horticulture, Ghent, for Oncidium Lanceanum superbum and Ardisia metallica. To M. L. De Smet, père, Ledeberg, for Dieffenbachia elegans fol. var.

*Cultural Commendations.*—To La Compagnie Continentale d'Horticulture, Ghent, for Oncidium incurvum. To M. L. Spae-Van der Meulen, Ghent, for Pandanus ornatus.

—— ROSES AND CHEMICAL WORKS.—A correspondent writes :—"I send you a parcel of Rose 'foliage' (what a mockery!) which is a sample of what the chemical works about a mile away has done for me. Of course they are not all as bad as this, because some sorts are able to resist it better than others, and while such sorts as Marie Baumann, Alfred Colomb, and Marie Rady are almost destroyed by it, Baroness Rothschild and M. de Castellane are not a very great deal the worse, although, of course, they all feel it more or less. It begins by a sort of purple discoloration on the young foliage, which afterwards turns brown or black, and in some cases the leaves are burnt through. Some of my neighbours won't admit that it is due tochemicals, but I have no doubt on the subject. What do you think? It is a great disappointment to me, as I used to get such pleasure out of them, and now out of 400 plants I have not got one that I could call really healthy, as besides ruining the foliage it takes all the colour out of the blooms." We share our correspondent's opinion, as the appearances on the leaves are quite consistent with his statements, and, so far as we know, there is no other cause that would produce such an effect.

—— THE "BOTANICAL MAGAZINE" for the present month contains illustrations and descriptions of the following plants :—

*Allium giganteum*, t. 6828.—The most striking of a group of Alliums which inhabit Central Asia, characterised by their tall stature, broad leaves, small lilac flowers, and exserted stamens. Bulbs were collected by O'DONOVAN near Merv.

*Sisyrinchium filifolium*, t. 6829.—A tufted herbaceous perennial, with linear erect leaves, erect stems, bearing a tuft of flowers at the extremity, each flower nearly an inch in diameter, with oblong acute, creamy-white segments, traversed by pink veins. Native of the Falkland Isles. See *Gardeners' Chronicle*, p. 696, vol. xxiii.

*Delphinium cashmirianum var. Wallichi*, t. 6830, is a dwarf form, covered with spreading white hairs, long-stalked, roundish lobed leaves, the uppermost leaves or bracts are ovate oblong, entire, on long stalks; flower-stalks elongated, collected in tufts near the top of the stem; flowers pale blue, petals yellowish. Native of Kashmir.

*Eucharis Mastersii*, t. 6831.—A species intermediate between the two finest species known, E. grandiflora (= E. amazonica of gardens), and E. Sanderii. It is a native of New Granada. As a complimentary name it should, by botanical usage, have been called Mastersiana as Dr. MASTERS had nothing to do with the plant. Indeed, it would be better to avoid such names altogether in cases where the person commemorated has had nothing to do with the discovery or history of the plant.

*E. Sanderii var. multiflora*, t. 6831*b*, is smaller than the type, and the stripes of the staminal cup are green. This plant was introduced by Mr. SANDER, and rightly bears his name.

*Alpinia? pumila*, t. 6832.—A curious little Scitaminous plant, native of the Lo-Fan-Shan Mountains, on the coast of China opposite Hong-Kong. The rosy-lilac flowers are borne on short scapes proceeding direct from the rootstock—the leaf-stalks are dilated and spreading at the base, the sheath longer than the scape, the blade elliptic acuminate, 6 inches long.

—— SARCOCEPHALUS ESCULENTUS. — Probably many will recognise in this an old friend, as it was said to be common in the gardens around London many years ago, but had not fruited. It is known as the Guinea, or Negro Peach, from its size and shape, but of course has no relationship with the real Peach. It is a member of the Cinchona order, and remarkable in the first place for producing its flowers in densely-packed, globose heads; and secondly, for the exceptional manner in which the separate fruits become amalgamated with one another, and with the receptacle, forming a sort of compound fruit, as we have in the Custard or Pine-apple, the resemblance to which, however, in the present instance is merely superficial, not one of affinity. The flowers are creamy-white, and agreeably fragrant, with long projecting styles, that give the heads a bristly appearance. A flowering specimen may now be seen in the Economic-house at Kew, and the plant was figured in the *Horticultural Transactions*, v., t. 18, where it was described by SABINE.

—— NEW HYBRIDS OF AZALEA MOLLIS.—These are said to form quite a new race of Azaleas, obtained by Mr. CHARLES VUYLSTEKE, Loochristi, near Ghent, from "crosses between different species." They are said to be "quite distinct from all other sorts; the colours do not resemble those of Azalea mollis, the flowers are even larger, the leaves fine and the plants of vigorous growth, and adapted for culture in the open ground as well as in pots. They are easily forced, and flower a little later than A. mollis and sooner than the Ghent Azaleas." The varieties are :—Edison, flowers bright rose, shaded with carmine, the upper lobes heavily spotted with chrome-orange and bordered with violet and white : large bold trusses of flower, very free; Dulcinée, orange-red, shaded with scarlet, very effective, the petals charmingly crisped, a very fine variety; Esmeralda, reddish-orange, distinct in colour, the upper segments spotted with dark vermilion; Gloire de Belgique, large red flowers shaded with clear lilac, the upper lobes dashed with violet and white and spotted with sulphur-yellow, and also bordered with lovely rose : extra fine; Henri Conscience, medium-sized flowers, the ground rosy-white and having a larger saffron blotch on the upper segments, very charming in colour; Ch. Rozier, lively rose flowers, shaded with violet and having a deep chrome-yellow blotch on the upper leaves, the edges creamy-white : a charming variety; Mons. Desbois, flowers salmon-red shaded with scarlet, the flowers borne in large bold trusses of from fifteen to eighteen each : fine quality and very free; and Mignon, a very pleasing shade of rose, dashed with satin, the upper lobes clear magenta, with dark blotches : extra fine. It is possible some of these new hybrids will be seen in flower in London next season. They will be looked for with considerable interest.

—— EUCHARIS MASTERSII.—Whatever be the history of this plant, its whole aspect and bearing points to its being a hybrid between E. grandiflora and E. Sanderiana. The foliage is intermediate in character, and likewise the flowers in size and many other respects. The corona, so nearly suppressed in E. Sanderiana, is here much more conspicuous, with a well developed tooth on either side of the anther—bearing one, as in E. grandiflora. The interior is greenish-yellow. The segments of the perianth are comparatively very broad, and assume a semi-erect position, while the three inner ones are conspicuous by the manner they are pushed into the interior of the flower by a median longitudinal fold, thus almost presenting the appearance of a semi-double flower. A specimen has been flowering for several weeks in one of the stoves at Kew, and appears in every way as robust and floriferous as the above-mentioned species; and should it flower as frequently as there is every reason to believe it will under proper treatment, it will be a valuable addition to the cut flower basket, as well as for ordinary decorative purposes.

—— DOUBLE SARRACENIA.—Mr. B. S. WILLIAMS obligingly sends us a double flower of Sarracenia Atkinsoniana×, in which the doubleness consists in the formation of one additional series of petals (multiplication), and not in any transformation of stamens.

—— OPEN SPACES IN LONDON.—On Monday afternoon last Lady MARIAN ALFORD formally declared the enclosure of Red Lion Square, High Holborn, to be open to the public as a garden and place of recreation. The space which is thus thrown open to the people of the neighbourhood has been secured by the Metropolitan Public Gardens Association, of which Lord BRABAZON is Chairman, on a peppercorn rent for a period of twelve months. The enclosure was decorated with flags, and presented a favourable contrast to its ragged and untidy appearance a few months ago. It may be mentioned that Red Lion Square, which was built at the end of the seventeenth century, has numbered among its residents Lord Chief Justice RAYMOND, JONAS HANWAY, who introduced the umbrella, and SHARON TURNER, the historian of the Anglo-Saxons.

—— AUTOMATIC IRRIGATION. — In very dry sensons there is a great demand for water in most gardens, and any apparatus which effects a saving of the gardener's time must of necessity prove invaluable. Messrs. MERRYWEATHER, of Long Acre, have devised various systems for automatically distributing water. They devised a system of non-corrosive metallic tubes in short lengths mounted upon easy running carriages and connected with flexible joints. The metal pipes being perforated throughout their entire length, the water will run through a length of 60 or 90 feet, dispersing itself on the land through the whole course of the pipes by means of the perforations. It is very easy to move the apparatus from place to place at intervals. Another system consists in similar movable pipes

without the perforations, at the extreme end of which a distributing nozzle is attached. This nozzle is capable of throwing the stream in either a jet or a spray at the will of the operator, who can of course walk about freely dragging the tubes after him. A third apparatus is both ornamental and useful, as it consists in a portable revolving fountain upon a stand to which hose may be connected. Garden hose or lead or iron pipe so small as ½ inch diameter can be connected to the inlet-coupling, and the water supply taken from a source 8 feet or more above the fountain. The sprinklers rapidly rotate by the action of the issuing water, scattering a fine shower over a wide area. The adaptation of this latter appears to be a happy, idea as it is arranged inverted to screw up to the ceiling of fernery or conservatory, and thus scatter the water downwards and sideways.

—— French Bean.—We received recently two plants of a selected French Bean of great prolificacy, accompanied by the following note from Messrs. Ewing & Co., Havant, which may be of interest to our readers:—"We herewith send you two specimen plants of a dwarf French Bean which we have been selecting for the last five or six years for its great fruitfulness, dwarf habit of growth, and its earliness. As this Bean now, in its highly selected state, occupies but very little room on the ground, and produces a large quantity of Beans in a very small space, the rows may be sown more closely than is the case with other kinds, and a much larger produce can be gathered from a given piece of ground and in a much shorter time than is the case with other varieties. We have tried many kinds (especially the new ones) against it, but have only found one to nearly approach it in earliness and dwarf compact habit of growth, added to extreme productiveness."

—— Cider and Perry.—The Woolhope Naturalists' Field Club has been engaged during the last nine years in obtaining practical information in the orchards, with a view to improve the varieties of fruit cultivated in them, and to restore the commercial position of their products. The result of this long series of inquiries is embodied in *The Herefordshire Pomona*. This valuable work, now just completed, is far too richly illustrated, and too costly for every-day use. It is proposed, therefore, to publish, immediately, a cheap edition of all the information contained in the larger work, with reference to the cider and perry fruits, from the counties of Hereford, Devon, Somerset, Worcester, and Gloucester. The present work embraces a history of the orchards and their complete management, a description of the best varieties of fruits, the chemical analysis of their several juices, and the manufacture of cider and perry. M. Pasteur's discovery of the true causes of fermentation, which explains so clearly the best modes of controlling it, is fully given. The orchard in its commercial aspect is also entered into with much detail. A century has nearly elapsed since any systematic British work on the subject has been published, and it is hoped that the present volume may become a text-book for practical use with nurserymen and orchardists, until further experience and information enables a better one to be supplied in its place. This work will be published in octavo form, and in the usual green cloth cover of the Club. It will contain nearly 300 pages of letterpress, with woodcut sections of the most esteemed varieties of fruit. It will then form a handsome volume. The cost to subscribers will be 5*s.*, and to non-subscribers, 7*s. 6d.* each copy. The printing has already commenced, and the publishers, Messrs. Jakeman & Carver, High Town, Hereford, will be pleased to receive subscribers' names.

—— Pachira macrocarpa.—The species of Pachira, from their partaking of the size and character of trees, are seldom seen in collections, at least of dimensions suitable for flowering. This is to be expected, at least in private collections, where space is frequently of prime importance. They are natives of Tropical America, and closely related to the famed Baobab of Africa, and are probably better known under the name of Carolinea. P. macrocarpa was introduced from Mexico, and figured in the *Botanical Magazine*, t. 4549. A specimen about 12 or 14 feet high has been flowering intermittently for some time in the Palm-house at Kew. In its native habitats it attains double that height, and must, when well flowered, be a conspicuous object. The large handsomely digitate leaves alone should obtain it a place amongst stove plants. The flowers apparently are sparingly produced, but of great size, and strikingly attractive. The long, linear white petals recurve gracefully in a radiating manner, as do some species of Crinum. They by themselves, however, would be tame in the absence of the stamens, which branch off from the staminal tube and project in all directions, occupying the whole upper surface of the expanded flower. These are white at the base and crimson upwards, offering a marked contrast with the other parts of the flower.

—— Curiosities of Floriculture.—We have received the following paragraph from so many of our Scotch friends, that we are constrained by politeness to present it to our readers, for their edification:—

"Shieldaig, Lochcarron, August 3, 1885.

"The following fact in floriculture may interest, and possibly surprise, some of your readers.

"Last year I sowed, among other annuals, several patches of the lovely Linum rubrum grandiflorum, which grew and blossomed luxuriantly. When the seed-vessels were thoroughly matured, they were taken in and laid aside till this spring, when the seeds were beaten out and sown; but instead of growing up scarlet Flax they have grown and blossomed into pure white Candytuft. There is no difference either in colour or smell from the other patches of real Candytuft in the garden.—I am, &c.,

"John Shand.

"P.S.—I may state that not a single plant of Linum appeared. J. S." *Scotsman, Aug.* 12.

—— Show Fixtures.—The great summer show of the Shropshire Horticultural Society will be held on August 19 and 20. The Wilts Horticultural Society will hold its show at Salisbury on the latter date. A grand horticultural show in connection with the Warwickshire Agricultural Society will take place on September 2 and 3, at the Jephson Gardens, Leamington. The Bath Autumn Show will be held likewise on September 2 and 3

—— Gardening Appointment.—Mr. Charles Russell, late Foreman at Byrkley Lodge, Burton, has been appointed Gardener to Mrs. Hopkinson, West Court, Finchamstead.

## FRUIT NOTES.

Alexander Peach.—This Peach is now (July 25) ripe with us on a south-west wall in the open garden, where it is bearing fair-sized, highly coloured, nice-looking fruit, that is full of rich juice and of a capital flavour. So far as I can judge of it, it is a decided beat on Early Beatrice, Louise, or Rivers, the latter of which is not yet in with us, and is very pale in the skin, and not of the high quality of the Alexander, besides which it is very liable to split in the stone. Hale's Early I have not yet tried, but it is said to be synonymous with the Alexander, which last-named must not be mistaken for the Alexandra, as that is an improved Noblesse, and quite a different thing. *J. Sheppard.*

Gooseberry Henson's Seedling.

This variety was figured in the *Florist and Pomologist*, in May, 1874, with the following remarks:—"Henson's Seedling is a novelty brought before the Royal Horticultural Society last year, by Mr. Henson of Newark, near Peterborough, when it was found to be of exceedingly good quality, and was awarded a First-class Certificate as a new and distinct variety. It is stated to be a chance seedling, having been originally taken from a hedge in the neighbourhood of Peterborough, and not a garden raised sort. However this may be it is a finely flavoured variety, well worthy of cultivation as a dessert fruit, and though not large enough to rank among the show kinds, is quite large enough for general purposes. It belongs to the hairy red section." Now I have taken up at random two fruit catalogues issued by two of our largest fruit nursery firms in the kingdom; one enumerates thirty-seven varieties of Gooseberries, the other seventy-nine. Considering that this variety has been before the public over ten years, and received a First-class Certificate from the Royal Horticultural Society, it certainly seems strange to me that two of our most eminent nursery firms should omit such a useful sort. It ripens before Warrington, and will keep up a supply till that old, though most worthy variety is ready for dessert. I may here mention that last season we had Henson's Seedling good till the middle of September, and Warrington trained on an east wall, protected with netting, until the end of October. *J. Smith, Mentmore.*

## THE DATE PALM.

(*Concluded from p.* 179.)

In Lucknow I introduced the Date Palm from the Persian Gulf, through the Government of India, both by seeds and by imported offsets. There are some hundreds of many varieties of both kinds in Lucknow, and many hundreds from seeds in many parts of Oudh. In Lucknow they were imported between 1869 and 1873. These had been under my care and close observation up to 1877-8. Since then I have often seen them. They are growing very luxuriantly, and are irrigated during the hot winds from wells 20 feet or so deep. During the rains they are subject to an average annual rainfall of 36 inches. In the winter there the temperature has been down to 5° Fahr. below freezing point, and in the hot winds I am afraid to say what temperature they are subject to, and there is no sea-air. Many of the Lucknow Date Palms have been flowering and fruiting—artificial fertilisation is practised in most cases. Mr. Ridley, under whose care they are at present, has stated that their fruit is good, and it is stated that some are delicious. I have tasted some, and found them very sweet and nice. Another officer from Pertabgurr says, that those which ripens fruit are delicious. Even the small skinny fruit of the P. sylvestris, when not tapped for "toddy," is eaten by natives. I cannot, therefore, understand how it is that the Date Palms in the South of Europe are said to be without fruit, and that "the cause is the dry summer, there being no subterranean wells, as is the case in the Sahara."

From the study I have made of the Phœnix sylvestris and P. dactylifera (which are in reality two varieties of the same species) I am of opinion that neither subterranean wells nor a desert climate are essential to its luxuriant and successful growth. We must, therefore, look for some other reason to account for its being "without fruit," or for its fruit "never being fit for food" in the South of Europe.

I have shown that the P. sylvestris grows luxuriantly in a moist climate like that of Bengal, and in all other climates, from North to South India. But as it is annually bled, and its sap converted either into sugar or toddy, its fruit, when it is able to give any, and when it becomes fertilised, is not fit to eat. The P. sylvestris is nowhere irrigated as far as I know, but depends for moisture upon rain or upon what it can suck up from the subsoil. I have shown also that the P. dactylifera will bear a variety of climates and conditions, and still give good fruit. In the oases of the Sahara and all along North Africa and in Murcia, in Spain, probably it does not receive any special cultivation. In the interior of Arabia, where there is not much commercial intercourse, and where the poor people are almost wholly dependent for food on their Date crop, the probability is that a great deal of care is given to it. In Mooltan, Sindh, and adjacent countries Mr. O'Brien says it is nowhere cultivated, but grows spontaneously from seeds. There are many varieties in Mooltan, and he sent me samples of five varieties. They were small (about the size of the Muscat Dates) but sweet, and they formed a great part of the food of the Mooltanis and Sindhis. In Lucknow, where the conditions are different from the places before mentioned, it also grows well.

But the climate where it appears to come to great perfection, and where it is cultivated with great care and skill, is that of the Persian Gulf. There it is tended as if it were a child—irrigated regularly, manured with either fish or other animal manures. As there are only female plantations the flowers of each bunch are carefully fertilised by males brought from anywhere (sometimes from another district). The irrigation is stopped for several weeks after fertilisation, and finally only from eight to twelve bunches of Dates are left on the tree out of the twenty-four or so that it bears. Nevertheless, with all this care and skill they say that those Dates which by accident have not been fertilised are "stoneless and insipid, and only fit for goats."

Palgrave, in his *Journey through Arabia*, says that of all the kinds of Dates he had eaten the "Khâlis" of El Hasa in the Gulf is the *facile princeps* of the Date kind. He says it bears the same relation to the ordinary Date which the jungle Mango bears to the Bombay Mango. In the Gulf the Date tree receives as much cultivation as Oranges or any other choice fruit trees receive in Europe.

Let us glance now at the cultivation of Date Palms in the Riviera. Irrespective of any irrigation, manur-

ing, &c., which are not mentioned, the leaves at certain seasons are swathed, like Lettuces, to blanch them for church ceremonials. They are cut at Easter, for supplying leaves for Palm Sunday to Rome and other places, and also in August for Jewish observances. Now, considering that the leaves to the plant are what the stomach and lungs are to the animal—that they are required to be, not only luxuriant, but in large numbers, to supply healthy sap for the growth of the tree and the production of its fruit—we need not, I think, trouble ourselves about either "underground wells," or dry summers to account for the Bordighera Date Palms giving either "bad fruit, or none at all." [All the Palms on the Riviera are not so treated, and yet ripe fruit is almost unknown. Ed.] In the Persian Gulf, they say, the Date Palm is not tapped for "toddy." It could be tapped, however, they say, "but at the expense of the fruit." It is a wonder to me that the Date Palms of the South of Europe continue to exist at all, under such treatment; I should say, however, that they can be swathed, and that their leaves can be cut off, to supply bleached leaves to Rome and other places, leaving the whole place with a "disreputable look," but all this can be done "at the expense of the fruit." Moreover the Bordighera Palms may all happen to be of the kind which does not become soft and sweet, and goes no further than the red or yellow stage, called "Kharek." In my opinion, the borders of the Mediterranean basin are eminently suited to growing first-class Dates. The sea air appears to be an advantage to the choicer varieties. It is not so partial to a desert climate as one would suppose. All it wants for the production of choice fruit is careful cultivation, like any other fruit tree, with irrigation when necessary, manuring and stirring of the surface earth; artificial fertilisation when the males are not well intermixed with the females. It requires also, like other fruit trees, that half the bunches should be removed to produce fine large Dates. The condition which I think is a great advantage to the perfection of the fruit of the Khoorma kinds is that during softening and ripening time the atmosphere should be dry. Finally, to obtain choice fruit the Date Palm should not be tapped or swathed, or have its leaves blanched and cut off; but that there should be many of them, and the more direct light they get the better, as long as water is supplied to the roots. Whether this come from underground wells or from rivers, or springs, or the clouds, I think signifies little.

I should say Cyprus, Candia, Greece, and its archipelago, Sicily, Sardinia, and the south and east coast of Spain, are all eminently suited to the cultivation of the choice kinds of Dates. Offsets from the Persian Gulf could be obtained with the greatest ease, and planted in nurseries, and watered regularly till they root, when they could be put into permanent plantations. I think there is no part of the world to which, if the climate and soil were suitable, Date offsets of the proper age and weight could not be taken. They will bear a great deal of exposure before planting without injury. The woody stump acts like a bulb, and throws out roots when planted under proper conditions. If we do not expect the cow to give good and abundant milk without proper feeding and careful treatment, it is hardly reasonable to expect the Date Palm to give good and abundant fruit with no feeding and "atrocious" treatment. *E. Bonavia, M.D., Etawah.*

## The Rosery.

### MADAME PIERRE OGER.

A sport from Queen Victoria (Bourbon), with flowers of medium size, globular, creamy-white tinted on the edge with rose. Well may the *Journal des Roses* say of it, that the colouring is quite peculiar if it answers to this description. Beautiful delicate lilac, coppery-rose.

Eugène Appert.

We were surprised to see a portrait of this old friend in a late number of the *Journal des Roses*. It is well nigh discarded from English gardens, but, although unsuited for the exhibition table, it is well worth growing, as it is so very distinct in its purplish wood, stout, straight, densely set thorns, dark foliage, pale plum-coloured on the under-surface, and with medium-sized flattish deep carmine flowers. The Editor remarks that this Rose is very liable to mildew, and so we find it in the very different climatal conditions of the London Clay.

Eugène Fürst.

A Rose raised by Soupert & Notting, of Luxembourg, with medium sized cup-shaped well filled flowers of a rich crimson colour. It is figured in the *Revue de l'Horticulture Belge* for August.

## THE BALATA INDUSTRY IN BRITISH GUIANA.

A very interesting and detailed report on this subject has been furnished to the Government by Mr. G. S. Jenman, Government Botanist, and Superintendent of the Botanic Gardens, Demerara. The report is



Fig. 46.—Odontoglossum Jescatorei. (see p. 177.)



Fig. 47.—Odontoglossum luteo-purpureum (Bogota var.).

especially valuable, as it deals with a substance which has attracted a considerable amount of attention at different times for several years past, but has never found its way into commerce in any considerable quantity, though balata has always been highly spoken of, as Mr. Jenman reminds us, as intermediate in character between indiarubber and gutta-percha, combining the properties of both, and for certain purposes is better adapted than any other of the natural caoutchouc substances. "Its strength also is very great, and as it does not stretch under tension, for special appliances, such as bands for machinery, it is unequalled. It has recently been pronounced by an American firm of manufactures as the 'best gum in the world,' and that it has not had a greater success is due more to the hitherto limited supply than to any defect of quality intrinsically in itself." This opinion is fully borne out in a report by Dr. Hugo Muller, F.R.S., which Mr. Jenman quotes at length.

Balata, as many of our readers will already know, is the concrete milky juice of Miumsops globosa, Gaert. A large, hard-wooded forest tree, sometimes reaching a height of 120 feet, and ranging from Jamaica and Trinidad to Venezuela and French Guiana. The introductory part of Mr. Jenman's report is devoted to a sketch of the Balata tree in Berbice, with notes on the characteristic vegetation. Speaking of the savannah region, he writes as follows:—"The flora I found naturally very largely identical with that of the Corentyne savannah, which, though remote, are part of the same region. It presents great variety, is generally rich in colour, and very interesting. Flowers are not plentiful enough, though abundant, and in many instances beautiful in an exceptional kind of way, to give colour to the ground; they are partly concealed, too, by the rather long grass, yet it would be difficult to gather anywhere a more charming bunch of wild flowers than this savannah afforded at the time of my visit. Much of the novel effect is due, I have no doubt, to the exquisite shades of colour above alluded to, combined with unusual and unique or quaint forms." A list of the plants seen follows this description. Some of the discomforts of the savannah are stated to be small flies, one of which swarms about the face and creeps into the eyes, and the other "stings and leaves a durable extravasated red speck." After a few notes on the population and their mode of living, a very careful description is given of the Balata tree and its distribution. From the east bank of the Berbice river to the Corentyne is the regions of its greatest plentifulness in the colony, but its distribution extends still eastward beyond the Corentyne into Dutch Guiana, where a grant of several hundred thousand acres has recently been acquired by an American firm for collecting balata. The trees are more plentiful in this region, in the depths of the forest, than near the rivers, hence the creeks form arteries to the balata grounds. Several of the creeks on both banks of the Cauje are instances of this. The woodcutters of this district regard the Balata tree as inexhaustible; in the interior of the forest it exists in profusion, and abundance lies beyond the reach of the balata collectors as they at presen conduct their operations. As the trees near at hand become exhausted they will no doubt alter their habits and make clearings as drying places in the heart of the forest, but now they are under the obligation of returning to the settlements on the creeks with the milk they have collected, to dry. Under this necessity they can at most only penetrate about two days' journey, but so far as they have explored they report there is no diminution in the abundance of trees. The forest at this depth, of course, has never been touched by woodcutters, as for convenience in getting their timber out they have to confine their operations to the banks of the river and creeks, rarely going in more than a mile or two."

The balata collector's life is described as a very hard one, as the ground is not only swampy, but often up to the armpits in water; moreover, they are often badly clad and short of food, they consequently suffer much from rheumatic affections.

The trees are tapped either standing or after felling. In the former position gashes are made through the bark in a slanting manner, meeting each other half way across, so that the milk trickles from one channel into the other till it is received into a calabash placed beneath the lowest gash to receive it. Tapping the trees is often done in a very careless manner, and the trees much injured in the process.

The yield of the tree varies considerably, according to circumstances. Sometimes three pints of milk only are obtained in the course of a day, while at other times, and by a practised hand, as much as 5 gallons can be procured.

To dry the milk it is poured into shallow wooden trays and exposed to as much air as possible, as well as to the sun's influence. It is, however, a slow and tedious operation. Mr. Jenman remarks that some quicker system of evaporation than that at present practised is very desirable.

With trees of so valuable a character as that yielding balata it is most important that very great care should be taken of them, and means adopted rather to increase than diminish their numbers. The ruthless felling of trees is, therefore, to be condemned, as well as the careless tapping from which the tree receives mortal injury. Mr. Jenman justly says:—"The forests should be so worked that the fullest measure of present benefit could be taken from them without impairing in any degree their future value." The report concludes with some considerations or

suggestions on the better conservation of the forests, some of the remarks on which might be almost equally applied to trees other than those furnishing balata.

## SHUTTER-BAR SYSTEM OF GLAZING.

Our illustration (fig. 48) is that of an elegant conservatory, standing in the South Promenade, Inventions Exhibition. The house seems adapted by its construction to stand in a sheltered spot in a garden, but scarcely to weather the rough usage of an exposed site. This applies only to that particular style of work, but doubtless the makers, Arthur Dashwood & Co., would put up conservatories and other glass-houses strong enough to fit them for any situation.

These gentlemen have several points in the matter of glazing which offer marked advantages to the cultivator. By means of what is called a shutter-bar, fitted with perforations, the moisture collected on the inside of the glass is deposited on the outside of the pane below it, and so on till the gutter is reached; while on the outside there is no accumulation of dirt or lodgement for water, as in some horizontal glazing.

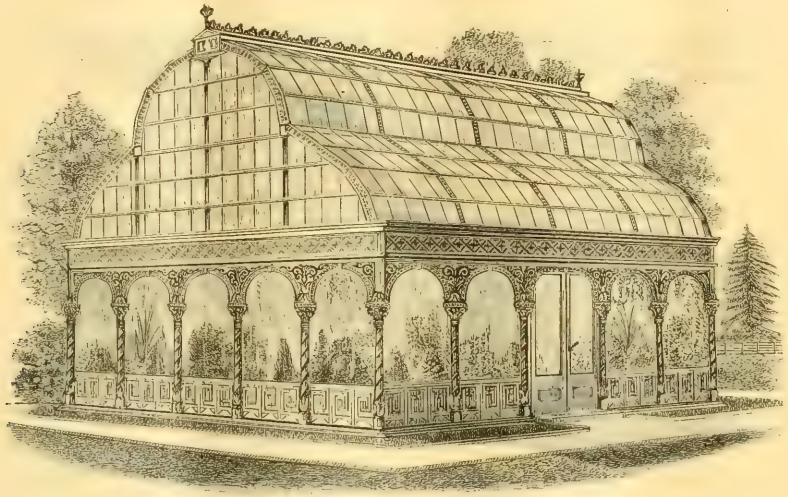


Fig. 48.—An example of shutter-bar glazing.

Another improvement is a continuous spring, running the whole length of each row of glass, in that way securing the glass effectually in stormy weather. The long edges of the panes are secured by what is called a subsidiary or bedding bar, thereby attaining freedom from leakage, and the avoidance of the unsightliness of edge-to-edge glazing, and damage from expansion of the panes under heat. The glass is easily removable, and the ventilation is secured at the sides and roof by very simple applications of the screw and the lever.

## GRAPES AND PEACHES AT MANRESA HOUSE, ROEHAMPTON.

The large Black Hamburgh Vine at this place, which has before been noticed in the columns of the *Gardeners' Chronicle*, now fills the house built for it, 224 feet long; its seven long canes stretching the entire length of the house. When the fruit was ripe this season, at the middle of July, the Vine presented a sight such as might, we think, challenge the whole annals of Grape growing to surpass. Seen from either end of the house, the rows of bunches arranged in longitudinal lines, as straight as the rods that bore them, had a remarkable appearance; they were 750 in number, ranging from the smallest, about a pound each, up to the largest, a good many of which would reach from 3 to 4 lb. The berries were above the average in size, perfectly black, and well covered with bloom.

The next house on the same line of wall is 70 feet long, and is filled with one Vine bearing a crop similar in finish to that of the big house, the bunches averaging considerably more in weight. Like the preceding this Vine has seven rods running from end to end of the house. The Vine in question affords one amongst the many instances that have occurred, showing the effects that arise from one part of the head being in a lower temperature than the rest is subjected to—such, for instance, as sometimes seen where one or more rods of a Vine have been taken into a house where forcing has been going on, with other canes in an adjoining house kept cool, consequent on which the crop on the forced part of the head is ripe, whilst on the remainder that is cool it is yet quite green. The case under notice is somewhat different. This house is separated from the large vinery already described by a passage that leads into the walled garden in which these vineries are situated—the passage is boarded overhead, with a glazed roof above, similar to and in continuation of the range. The Vine which fills the 70 feet house is planted within the big vinery at the opposite side of the passage, and the canes are brought over it through the enclosure formed by the boarding over the said passage and the glazed roof above. As a matter of course the hot-water pipes in each vinery can only come up to the ends of the houses, doing little to warm the enclosed space above through which the rods are brought, consequently the bunches within this space had not finished swelling, and were quite green, whilst the crop further ahead within the house was just on being ripe. Here is a case in which the stem of a Vine is located in a house where heat is used, and the head in another house similarly heated, but with an intervening part of the rods passing through a space that is much colder, yet without the least derangement in the growth or crop. Such instances as this show how baseless is the notion that the whole of a Vine, roots and head alike, require to be in a similar temperature.

The third house, in continuation of this straight run of wall, is 154 feet long, and, like the two preceding, is about 11 feet wide; each house has a low front wall. In each case the length of rafter is some 13 feet 6 inches to the ridge, with 3 feet hip-lights. The wall against which they are built is about 12 feet high; the portion which forms the back to the house now being described is covered with a fine lot of Peach trees in excellent condition, which for some time are to be retained. To let these get the light and sun they require only four canes are allowed to this Vine, three running on the lower part of the roof above the front wall, and one under the ridge. The Vine enters the house at one end, and the rods have traversed about 70 feet of their journey; the aspect is nearly east. At the opposite end of this range, leading from the big house first noticed, there is a lean-to range of wider houses, with about 20 feet length of rafter. The first of these is 70 feet long, and is now occupied by strong Black Hamburgh Vines, with two or three rods each, carrying, as they have done for years, a heavy crop. This house is also to be devoted to one Vine. Against the back wall at the adjoining end of the big house is a very strong Black Hamburgh, several canes from which have been taken through the division wall; these also are to run lengthways from one end of the house to the other. Some idea may be formed of the vigour this Vine has in it by the fact that some of the rods had by the middle of July made 34 feet of growth, and proportionately thick.

Large houses filled with single Vines are sometimes compared to big ships, wherein if anything happens to the proportionately big cargo it becomes a serious matter. The question might be asked, What is Mr. Davis object in filling houses like these with one Vine each? Before giving his reason for following his course it may be well to say a word about the origin of these Vines, which are all Black Hamburghs. They were planted twenty-two years since by Mr. Davis against the wall where they now stand, and which at that time were uncovered and happened to afford a little space. The object in planting them was to grow leaves for garnishing, so as not to have any to take off the bearing Vines in the houses. There was no preparation of any kind made, but the roots had the unrestricted run of the garden; they grew away vigorously, showing an ability to cover a large space. The idea then occurred that it might be worth while to build a house for the strongest one, which was accordingly done. It bore so well, and finished the crop up so exceptionally, that the house was extended to its present size. After this, each year heavy crops continued to be taken from it, yet, with similar treatment in every way to that which was given to other Black Hamburgh Vines in several other ordinary-sized houses on the place; the colour continues to be always some shades deeper than that of the others. The result is that each of these Vines has now virtually got a house to itself. Nothing will be wanting in attention to get the whole space filled by the two that do not yet occupy all the room provided for

them. The space inside the house allotted to the biggest Vine gets frequent soakings of liquid manure through the growing season, and openings are now to be made in the back wall to let the roots out in this direction, where liberal help will be given them. In front the roots have stretched out into a quarter of the garden planted with Currants; these Mr. Davis is about to remove, so as to be able to encourage the Vine roots here without anything in the way of a dual occupation of the soil.

In the early Peach-house, now filled with trees that have taken the place of the big old Grosse Mignonne, that may be set down as the King of Peach trees, the fruit had been cleared some time. In the larger house that succeeds this, the crop was also over. This house contains half-a-dozen good trees—five Peaches and a Nectarine; from these 178 dozen fruits were taken this year. Nothing in their way could be more satisfactory than the condition of these trees, with wood as strong as can be relied on to bear, and the leaves still as green and free from the appearance of insects as possible.

### Outdoor Peaches.

The south Peach wall here is one of the best we know of, covered, as it is, with a number of trees in the best condition. They are this year, as usual, carrying a crop such as nothing short of careful attention would enable them to bring up to the requisite size. The east wall, which is something like the preceding in extent, is occupied by twelve or fourteen good trees, similar in condition to those on the south wall; but here the crop is thinner through the continued north-east winds in spring, which caused a good deal of dropping. On this aspect here Princess of Wales Peach seems to bear no matter what the weather during spring may be. This season it is as full of fruit as the trees on the south wall. One of the main points in Mr. Davis' success in Peach cultivation, out-of-doors especially, has hitherto consisted in a constant use of the garden engine, with enough moisture at the roots in addition. He has now got the water laid on all round in front of the wall, so as to be able to use the hose-pipe freely. If provision of this kind existed in all gardens where it might be introduced half the failures in Peach culture that occur would not be likely to take place. Syringes and garden engines are useful appliances, and in the absence of a supply of water with pressure must be employed, but their use entails more labour than is at all times available, hence the trees have often to go short of the needful quantity to top and roots alike.

## ORCHIDS FOR AMATEURS.

(Continued from p. 178.)

*Lælia crispa*, Rchb. f. (*Cattleya crispa*, Lindl.).—This plant is quite distinct in habit, colour of foliage and flowers, although it has a close relationship with the four species of Lælia described in my last paper. Like L. purpurata it is a native of Brazil, and was one of the first Lælias introduced. It is a very variable plant, and one which is not often well grown. In my experience it is not easy to manage by any means, and it is sometimes years before it flowers. It is apt to become sickly, and is very liable to mealy-bug. I believe it requires more heat than the majority of Lælias, although this has been denied. I have tried this plant under varied conditions, but have not had any great success. The pale green natural to the whole plant indicates a deficiency of chlorophyll, and is perhaps an indication that it should have a full allowance of sunlight. The flowers are pure white except that the lip is veined with purple or crimson. As its name implies, the petals and sepals are strongly crisped or crimped round the edges. Some of its varieties are equal in beauty to anything in cultivation, but there are so many with poor flowers, and it so seldom blossoms, that it is not in very great demand. Even specimen plants have lately been sold for very small sums. A good variety is, however, a valuable acquisition.

*L. Perrini.*—A Brazilian species, which flowers freely. It is a medium-sized and vigorous plant, having a very distinct habit. It has large pseudobulbs supported on a stalk-like stem; each bulb is surrounded by five brown or purple scales, and bears a long purple or dark green coriaceous leaf. Sometimes a second shorter leaf is also developed. The flowers are from 3 to 4 inches across, and from three to five in number, supported on a stout peduncle, surrounded by a great green spathe, spotted or edged with deep purple. The petals and sepals are rose or lilac, the labellum is narrow, with a pointed median lobe. The labellum is brighter than the rest of the flower, and edged with a deep band of crimson or purple. It flowers in October or November, and does well in the coolest part of the Cattleya-house.

*L. xanthina.*—Also a native of Brazil. It has the habit of Cattleya Mossiæ. The flowers are ochraceous, yellow, with a bright yellow lip, bordered with white, and ornamented with crimson ridges in the throat.

*L. grandis* is a closely allied but very rare species, from Bahia. It is distinguished by a white labellum striped with longitudinal purple lines in the throat. All the above species of Lælia form a very well defined group which may be said to represent the Labiata section of the genus Cattleya. Two other well marked groups or sections occur in Brazil. One with long cylindrical pseudobulbs which may be said to represent the Cattleyas with cylindrical bulbs; the other a small group of dwarf plants with long ovoid pseudobulbs, never exceeding 2 or 3 inches in length. The first contains Lælia cinnabarina and its allies, the second L. pumila, L. præstans, and L. Dayana.

*L. cinnabarina.*—This plant was introduced in 1836, and is therefore one of the old-fashioned kinds. It is a native of the Organ Mountains. The pseudobulbs are thickened at their base and gradually taper upwards, and each bears one or two strong coriaceous leaves. The flowers are nearly 2 inches in diameter, six or more on each peduncle which grows from a small bract. The petals and sepals are narrow, of a bright orange or cinnabar-red colour. The lip is orange streaked with diverging vermilion lines. This plant is difficult to grow and flower unless it is treated very differently to its congeners. In its native country it grows on barren rocks near cracks filled with sand, into which it sends its roots. I grow it in a mixture of ballast (burnt clay) and sand, and in this it does very well. A plant which I thought dead quickly recovered when so planted, and is now doing well. L. cinnabarina needs a free supply of air and a moderate supply of water. The roots cling firmly to the ballast, and penetrate the sand deeply.

*L. harpophylla* is allied to the last. It differs in having long cylindrical pseudobulbs, 1 foot or 15 inches long, without the expanded base. Each bears a spear-shaped leaf, from whence the name. The flowers are similar to those of L. cinnabarina, but are larger and more brightly coloured. I do not know whether it would grow in sand. It is much esteemed, and is a comparatively recent introduction. It is also a native of Brazil.

The last section of Brazilian Lælias consists of the dwarf forms. These plants resemble each other closely in habit, and may at once be recognised by their small pseudobulbs and large coriaceous leaves, three or four times as long as the bulbs.

*L. pumila*, also known as Cattleya marginata.—The flowers of this little plant are solitary, and measure 3 inches or more across. The colour is pink; the median lobe of the labellum is deeply notched, and has a white border, which in the best varieties is broad and well marked.

*L. præstans* has larger, flatter, and more waxy flowers than the preceding, with which it is easily confounded. It has a much broader column, distinctly winged towards its summit. It is a rare plant.

*L. Dayana.*—A comparatively recent introduction, distinguished by its free growth and very floriferous habit. The flowers are somewhat smaller than those of L. pumila; they are more brightly coloured, and the lip is deep crimson, with broad crimson lines extending back into the throat of the labellum. The flowers of some varieties do not open fully, but remain campanulate. The three last species all do well in the Mexican-house, and require much air. They also flower twice a year from the young shoots, which are formed in spring and autumn. The autumn flowers are usually the best. L. Dayana flowers much more freely than the other two.

### Mexican Lælias.

The Mexican species of Lælia differ considerably from the Brazilian species. They may be grouped in four very distinct groups, of which L. anceps, L. albida, L. erubescens, and L. majalis may be regarded as types.

*L. anceps* is the only species of the anceps group. It is very distinct, and is also a most charming plant. It is easy to grow and flower when properly treated, but it is very difficult to deal with it under faulty management. Like all Mexican Lælias it is a mountain plant, and cannot stand heat or close air. Its roots are also easily destroyed by excess of moisture; whilst its leaves suffer much in a dry atmosphere—indeed, they must be frequently syringed during the growing period. If the leaves are not wetted well two or three times a day the gummy secretion on the scales and bracts becomes dry, the plant becomes diseased, and thrips attack it. After the flowers open water should be entirely withheld until the new growth makes its appearance in the spring. A distinct and decided winter rest is absolutely essential to success. The pseudobulbs of L. anceps are four-sided, with two acute and two obtuse angles—hence the name, which means "double edged." The bulbs are surmounted by a single dark green glistening leaf. The young bulbs and shoots are enclosed in a sheath of very gummy scales. The flower scape is very long, and bears a double row of sheathing bracts at its extremity, from the axils of which the flowers are developed. The bracts are covered with a gummy secretion. The flowers, three or four in number, are 3 inches or more in diameter. They are very flat, the sepals and petals are sharply pointed, and of a rose or violet colour. The labellum is three-lobed, the lateral lobes rolled up over the column. The terminal lobe is bright crimson towards its edge, and yellow veined with crimson streaks towards the centre of the flower. Several magnificent varieties are recognised, of which the best are—

*L. anceps Dawsoni*, which has very large white flowers with purple radiating striæ on the lateral lobes of the labellum, a yellow throat, and a broad purple band between the white base and margin of the terminal lobe. It is very rare.

*L. anceps Barkeriana* has rose-coloured sepals and petals marbled with a deeper rose.

*L. anceps delicata* has white flowers veined with rose-purple, and a white labellum shaded with violet, with a brilliant orange-coloured throat. *B. T. L.*

(To be continued.)

## FEEDING OF PLANTS.

As the food of plants existing in soils is subject to distribution, and does not remain in solution for any length of time, it is evident that there cannot be a circulation of such food towards the growing plant, but the roots of the latter must go in search of nourishment.

When we consider the vast root surface in the case of a Vine, and that myriads of rootlets and root-hairs unite their action to feed the comparatively narrow stem, we can understand the importance to the gardener of studying the ramification of the roots of all the various species of plants he cultivates in order to adapt his system of manuring to the feeding capacities of these plants.

Plant-roots may be considered in three distinct stages of growth, namely, in their primary development, their stage of ramification, and their enlargement in receptacles of nutriment.

Supposing, then, moisture, warmth, and air, to be ready in their proper measure, the water is absorbed by the substance of the embryo of the seed, dissolving its contents, carrying them into the young plant as rapidly as they are required; in fact, the seed may be considered as a miniature laboratory, in which numerous chemical actions are taking place for the nourishment and development of the young growing plant.

As the radicle breaks its bonds from the mother seed it will be nourished and fed after a short time directly from substances existing in the soil, and will profit very indirectly by any nutritive matters which may yet remain in the seed itself.

So important to the future welfare of the plant is the addition of elements which can be obtained from the soil only, even in the earliest stages of growth, that before any secondary rootlet is produced the young radicle in many cases pushes out from its superficial cells a mass of delicate fibrils, every one of which is employed in active food-absorption; therefore, while the first wants of the young plant depend directly upon seed nutrition, it must never be forgotten by the gardener that this supply lasts for a short time only, and that the ultimate vigour and productiveness of the plant must depend upon the

fertility of the soil; consequently, for the successful raising of any plant from very minute seeds, it is absolutely necessary that suitable food should be within easy reach of the delicate and small roots, and also in an extremely soluble condition. Thus we find pounded rape-cake, soot, or a moderate dressing (10 to 20 lb. per square yard) of superphosphate among the very best materials for manurial applications to soils when it is required to raise a crop of healthy young plants in a short period of time.

It is, however, a great mistake to suppose that because plants are often grown without a direct supply of nitrogen in manures they are not dependent upon this substance for their very life and sustenance. Those gardeners who do not apply manurial dressings with their seed depend naturally upon the store of nitrogenous plant-food in the soil. Many a plant which looks vigorous enough on its first appearance aboveground soon wears a sorry aspect when the food-supply is deficient or of the wrong kind.

Nowhere is this fact better exemplified than in the extensive experiments at Rothamsted, where the conditions as to sources of nutriment and disentegration of the soil by root development are so various. In early spring each description of plant experimented with, whatever may be its character or its manurial supply, starts much alike; there is but little difference to be discerned between one plot and another; very soon, however, those without any manure at all begin to show signs of weakness, then the imperfectly manured plots lag behind, while those receiving a full supply of all the necessary ingredients of plant-life—potash, phosphoric acid, lime, and nitrogen—advance steadily on to perfection.

This is further illustrated by the following table, which shows the average annual produce of various crops, and the increase obtained by different manures. The quantities are in pounds per acre:—

| Description of Crop. | | Without Manure. | Superphosphate, 392 lbs., alone | Nitrate of Soda, 550 lb., alone. | Mineral manure and nitrate of soda | Farmyard dung, 14 tons. |
|---|---|---|---|---|---|---|
| | | Lb. | Lb. | Lb. | Lb. | Lb. |
| Potato-tubers | Produce | 5,200 | 8,240 | 7,160 | 16,450 | 17,... |
| | Increase | .... | 1,040 | 1,960 | 11,250 | 12,078 |
| Swede-bulbs | Produce | 1,232 | 5,124 | 2,128 | 11,444 | 13,888 |
| | Increase | .. | 4,892 | 896 | 10,192 | 12,656 |
| Mangel-bulbs | Produce | 9,... | 17,... | 29,792 | 1... | 1... |
| | Increase | .... | 7,... | 20,... | 1... | 21,952 |
| Meadow-hay | Produce | 2,380 | 2,... | 3,... | 6,... | 4,662 |
| | Increase | .... | 1... | 1,... | 4,... | 2,282 |

We gather from these results that while a certain amount of increase of crop is obtained when superphosphate, which supplies to the plant phosphoric acid and lime, or when nitrate of soda, which furnishes soda and nitrogen, it is not until the complete fertiliser (minerals and nitrate soda), which supplies phosphoric acid, potash, lime, soda and nitrogen combined, is given that a full crop is harvested. This is further illustrated by the fact that farmyard dung, which is supposed to furnish all the essential elements of plant food—but the effects of which are spread over a considerable number of years—rarely yields so much produce as the minerals and nitrate soda together, the latter being so much more easily assimilated by the growing plants.

The next question which arises in connection with plant-roots is the power they have in the selection of their food.

That they have some is apparent from the fact that different species of plants in the same soil will appropriate different quantities of chemical ingredients, and that some exhaust the soil more rapidly than others.

Fibrous roots have frequently enormous power of penetration, which enables them to search for food at great depths. This property sometimes becomes a serious evil if the subsoil does not contain the particular ingredients required by the plant. In the orchard many a fruit tree thrives so long as the roots are superficial; but when they penetrate deeper, nutriment, either insufficient or of an improper character, is absorbed, vitality is impaired, and various forms of canker and unproductiveness are the consequences.

One great end attained by pressing the ground of light soils before or immediately after setting out plants, or sowing seeds, is to encourage lateral rootlets as much as possible, that they may avail themselves of the more abundant and more suitable food constituents accumulated in the surface soil.

The third stage to be considered in the feeding of plants and root development is, that many roots become reservoirs of nutriment for future use. Roots vary considerably in character: some penetrate deeply, remaining fibrous and thread-like to the end; some throw out laterals, and luxuriate in the surface soil; some merely absorb the necessary daily food, while others, as Asparagus, Turnips, Carrots, Parsnips, &c., devote certain of their parts or ramifications to the especial office of storing up nutritive matters, often in enormous quantity, and in great rapidity. All underground plant ramifications which serve as storehouses are, however, not to be included in the same category. The bulb of the Onion, the Leek, the Tulip, the Hyacinth, or the tuber of the Potato, &c., though answering to the same end, are either furnished by the base of the leaves, or are underground stems.

In certain biennial plants there is a strong disposition to deposit stores of nutriment for the perfection of seed in the ensuing year, while in the case of perennials and in some Orchids a special part is devoted to this purpose.

In fruit trees the deposit often takes place in the bark and branchess, hence the necessity of rest, and the notorious fact that many trees will bear a crop only in alternate years. Doubtless this, which is the result of exhaustion to a very great extent, might be obviated if proper feeding with nitrogen, potash, and phosphoric acid were adopted. *J. J. W.*

## HOME CORRESPONDENCE.

**The Wholesale Destruction of Caterpillars, &c.**—May I be permitted to suggest that Mrs. Watney is perhaps rather too sweeping in her recommendation (*Gardeners' Chronicle*, Aug. 1) that all caterpillars and chrysalids should, without exception, be destroyed when found? Any one who has the smallest knowledge of entomology must know that the number of species of insects which inflict any really serious damage upon plants cultivated by man is, comparatively speaking, by no means great; but Mrs. Watney's advice, if taken seriously, would lead to the destruction of individuals or families of very many of our most beautiful lepidoptera—*e.g.*, the caterpillars of the peacock and the small tortoise feed (often in large numbers) on the Nettle, and do no harm whatever to the plants useful to man. I could instance scores of like cases, but these may suffice. Why, I would ask, seek to diminish the number of these creatures, the most beautiful which inhabit our gardens and woods? Many a lubberly boy may come across the caterpillar of a rare and beautiful moth or butterfly, and his native instinct of destruction may be strengthened by Mrs. Watney's advice, read out to him by his father over the breakfast-table. I have certain Oaks in which I believe the Purple Emperor to breed; I should not be at all gratified by finding that some boy, inspired by Mrs. Watney's teaching, had been occupying himself in smashing the caterpillar or chrysalids. The place where I live is usually somewhat remarkable for the quantity of butterflies and other lepidoptera (some of them by no means common) which are to be seen. This year they are very few, comparatively speaking; there are few even of the common Cabbage butterfly about. Is this the case generally in England? and if so, can any one suggest the cause? *Jussieuensis, Uckfield.*

**Bedding Pelargoniums.**—A charming display is now being made by a selection of these in Messrs. Wood & Ingram's branch nursery, at St. Neot's. They occupy long narrow beds in patches according to their varieties, and growing in a fairly light sandy soil they had made a good, bushy, medium growth, and had flowered grandly. Looking upon the charming picture the beds presented, one was made fully aware of the great value of the old subject as a bedding plant. As an effective bedder nothing can beat Vesuvius. It appears likely to hold its own for years to come. The deeply-marked zonate foliage is close and compact, and rising about it is a dense even mass of bright pale orange-scarlet flowers. It is the very *beau ideal* of a bedding Pelargonium. Near it is West Brighton Gem, the counterpart of Vesuvius, except that it appears to be of dwarfer and closer growth, and the flowers of a slightly softer shade of scarlet. Both are invaluable bedding plants. Henri Jacoby is clearly at the head of the crimson-flowered varieties for bedding purposes; the habit of growth is a little irregular, but this is almost hidden by the number of very fine and striking trusses of dark crimson flowers. John Gibbons is also a good and showy bedder, the flowers deep orange-scarlet, and so forming a good contrast to the varieties already named. Of the pink-flowered varieties, Master Christine holds its own as a grower, for its wonderful freedom of bloom, for its persistence, and for its stiff stocky habit of growth. The trusses of bloom are produced on such stiff footstalks as to defy heavy rains. White Clipper is a good white in all respects, and with it can be bracketed a variety named Huntingdonian, very like White Clipper in general character, but having some more deeply marked coloured veins on the flowers. Both are excellent free and durable bedders. Among the gold and bronze section, one of the very best is Zulu, of a dwarf and compact habit of growth, the leaves marked with a broad lively dark bronze or chestnut zone. In the soil of the St Neot's Nursery, it was perfect and very striking. It produces soft salmon coloured flowers. The old Beauty of Calderdale was particularly attractive, very distinct and bright—a good hot, dry weather bedder, showing itself in admirable character in a light soil. Maréchal McMahon has green and gold leaves, and a broad dark zone, excellent habit, and very free; one of the best bedders. Black Douglas has a bold chestnut zone on pale golden leaves; a good grower, and highly effective. All the foregoing are worthy of being noted as of great value in the flower garden. *R. D.*

**Onion Seed Growing.**—Some of the best pedigree stocks of Onions have been sent out by Mr. Deverill, of the Royal Seed Stores, Banbury, who it is well known devotes the greatest possible care in the selection of the various stocks of Onion seed, no expense being spared in testing and proving the different kinds offered. No fewer than eighteen varieties are grown this year for exhibition purposes on ground within a few miles of Banbury. I lately inspected a plot of ground, the soil of which is a deep loam, planted in February last with six or seven hundred selected bulbs of the now famous "Rousham Park Hero," Onion, many of the bulbs weighing from 1 lb. to 1½ lb. each. These were planted in rows 3 feet apart, and 1 foot from bulb to bulb; in April the ground was top-dressed with Clay's Fertiliser (no dung having been used for the two years), and well hoed in, and in May moulded up twice, like Potatos, which is undoubtedly a good plan to keep out the drought. The result thus far is most encouraging. Many of these bulbs have thrown up six, eight, and nine stalks with extraordinary heads, the like of which I have never witnessed before. They are now in full flower, with thousands of bees among them, thus proving that the Onion (at least the Onion blossom) is not unsavoury to them. Here and there in the plot I noticed some heads carefully tied up in muslin. The cause of this I was informed was that there were in a few instances a slight difference in the colour of the pipes, as also the flower-heads, and the muslin would keep the bees from carrying the pollen to others, and thus do mischief. Hundreds of yards of string and hundreds of 4-feet sticks are used, and each head is tied that it may not rub its neighbour; in fact, it could be plainly seen that such stocks of Onions, if they are to continue to carry off the leading honours, as they did at so many of the shows last year, cannot be produced without great expense and attention. Many of our leading nurserymen and seedsmen have specialties from which they are known: Mr. Deverill's speciality is Onions-culture. I might add that Mr. Deverill does not place all his eggs in one basket, but that he has several patches growing in different counties under personal inspection. *W. S. W.*

**Weevil Grub.**—In the cultivation of Primulas, some Saxifrages, Echeverias, and other succulents, I am much annoyed by the ravages of a subterranean larva of a species of weevil (*charançon*). The grub is of a white colour, not larger than a small Pea, and it attacks the roots, causing the destruction of the plants almost before one is aware of its presence. It is difficult to find and destroy the

perfect beetle, which is small and of the same colour as the soil. Is there any means of destroying the grub without injuring the plant? The species is not native to the part of Switzerland in which I live, and has not been observed here beyond the limits of my garden. I must have imported it with soil from the Alps, where I have seen it. *Edmond Boissier, Valeyres, Orbe.*

**Exhibition Peas.** — I think the finest exhibition Pea I have met with this season is Evolution; the pods large, handsome, full of large Peas, and covered with a pleasing white bloom. I have seen more than one lot of it on the exhibition table, and always good. Next to this came Telephone and Telegraph, the former especially, and always large and taking to the eye, though the pods have not filled out so well as usual owing to the drought. Stratagem, and Pride of the Market, have been greatly to the fore also, and especially Stratagem; when the pods are large and well-filled, with a good bloom on them, it is hard to beat. During the end of July and early in August Dr. McLean and Ne Plus Ultra have been very fine. The former, from a good stock, is a valuable exhibition Pea, when its long well-filled pods are covered with a dense white bloom. For late shows Ne Plus Ultra, or Walker's Perpetual Bearer, are undoubtedly the best. I regard them as the two best late Peas in cultivation. For early shows the best early varieties are William the First and Bliss' Abundance, but they want some growing to have them both early and good. The latter is undoubtedly a very useful Pea for early crops. *R. D.*

**Orchid Pruning.**—I am asked by Mr. De B. Crawshay, "Is cutting away old worn-out, leafless bulbs of Catteya or Lælia pruning, as used and performed [on Dendrobiums by some growers?" He puts the question in so vague a form, that I cannot meet it with a direct Yes or No; but he gives, as his opinion, that "I cannot claim these facts to establish the superiority of pruning, for really it is not pruning, but only the work of ordinary cultivation." I at once admit this as the truth; but all who have read the various correspondence on this matter well know that it was the ordinary cultivators who condemned the practice of removing the old bulbs, and bemoaned their departure with bitter wailing, that I was answering in my former letters on the pruning system. See Mr. Swan's letter of Feb. 21, p. 250; Mr. Walker's, March 7, p. 318; and one or two from Mr. Baines. Besides, Mr. De B. Crawshay was surely of the same way of thinking then, as his allusion to the Veitch Memorial Medal plainly proves (p. 318). But what does he mean by "ordinary cultivation?" Simply to remove all decayed bulbs? It must be very ordinary if these were not removed. I go far beyond this, for I have pruned out all the bulbs of the Orchid in question which had lost their foliage. And from what I have seen of collections exhibited at the great shows in London or the provinces, or the collections at nurseries or private establishments, I have ample proof that cutting out these back growths is not regarded as a work of "ordinary cultivation." Mr. De B. Crawshay seems surprised that no one has contradicted me. Well, how could they? I have only been recording my own mode of cultivation. Then he very kindly follows with a "neither do I." Now I have no wish or desire whatever that Orchid growers should cut out the leafless backgrowths of their Cattleyas. They may leave them on the plants till they die, as they always have done, and try to make themselves believe that their plants are all the stronger for it. But singlehanded as I now approach the subject, or appear to be, I venture to challenge my opponents to prove their case. I hope I shall be understood as to what should be pruned out. I put it thus:—A well-grown bulb of Cattleya, say Mendelii, may retain its leaf for five or perhaps seven years, or even longer, but this leaf will naturally die sooner or later. Now prove what benefit that bulb is or can be to the plant after the loss of its leaf. I am supposing the case of home-grown plants, not of imported pieces which have been torn about in handling. So strongly convinced am I that these bulbs are of no more service to the plant that I mean, as soon as I have opportunity, to enter more fully into the subject and recommend growers to follow the course of treatment which I have tried and found so satisfactory in the few cases already mentioned in my former notes. I beg to thank Mr. De B. Crawhay for giving me this oppo.tuning of further explaining the principle. I can now leave it in other hands for a time. *N. Blandford.* [A microscopical or chemical analysis of the old bulbs of such a Cattleya as our correspondent speaks of would setttle the matter. ED.]

**Store-roots on Bulbs.** — These curiously thickened store-roots are quite commonly produced by some of the Squills, as also by the corms of some kinds of Crocus, and they are represented on Ixia (Tritonema) bulbocodium, on plate 265 of the *Botanical Magazine.* Just now my friend, Mr. Smith, of Newry, sends me bulbs of Elwes' Snowdrop, in which these thickened store-roots are developed beautifully I here simply record the fact, but it would be most interesting to know under what conditions or environment they are produced. Their use seems to be that of auxiliary storage space, from which the bulbs can draw nutriment at their leisure. I hope some of our bulb-growing friends will enlighten us further on this matter. Mr. Maw, who has studied the corm growth of Crocus intimately, could no doubt tell us somewhat of these store-roots. *F. W. Burbidge.*

**Fruiting of Passiflora quadrangularis.**—Plants of this Passiflora here bear delicious fruit and good seeds, when a flower is fertilised with its own pollen. *A. D. Webster.*

**The Turner Memorial.**—I doubt if Mr. Douglas was any too precipitate in his letter on this head. Some time has now elapsed since Charles Turner's death, but until recently the general public outside the coteries have heard nothing of any comprehensive scheme to do honour to his memory. His kindly graces of manner and genius for floriculture need no monument for those of his own generation, who had the privilege of knowing him, and "sitting at his feet." However, although a goodly number of horticulturists know little or nothing of Sir Joseph Banks except that he was a shining light some time or other, a similar memento is necessary. The number of individuals who say "they have no time for reading" seems to increase. How are these to know of our friend's talent, and the deeds he did? *Autre temps, autre mœurs,* is very often falsified, and it is in our power to make the term "Turner" as well known to our descendants as "Banksian." It is a genial sign of English nature to notice Mr. Douglas leading the way with a practical suggestion; only, let him secure the doughty provincials, as well as the leading metropolitans, to back up the appeal. *C. A. M. C.*

—— Mr. Douglas' meeting at South Kensington in relation to the above object hardly indicates wide sympathy. He does not even give an invitation to those interested in the object to attend, but probably means that he will invite some half-dozen persons to confer with him as to what steps should be taken in the matter. It must be deplored that at the outset there seems to be conflict of opinion in a matter which should have been dealt with on broad grounds, and in a generous spirit. Mr. Turner was a florist, and specially a Dahlia fancier, but he was very much more, and his range of friends was by no means limited to florists. On the other hand, it is difficult to see how any memorial can be set up to a man simply because he had a wide circle of friends in life, and was by them very highly esteemed. Were we to devise memorials on that ground alone where should we stop? The late Mr. James Cutbush had a host of personal friends; so also had many illustrious horticulturists who have passed away, and over whose names only silent tears have been shed. It is obvious that if we agree to commemorate Mr. Turner's memory it must be on the ground that he was one—perhaps the most potent force—amongst improvers of florists' flowers of recent days. He was even more than a warm friend and a successful tradesman—a great florist; and it is in that sense his memory should be perpetuated, and fitly. The collecting of a sum of money, the interest of which is to be given in prizes from year to year for Dahlias or some other florists' flower, would be but annually to enrich some one who grows these or other flowers to obtain meretricious fame and some riches, without having the least regard for our old friend's memory. Far better would be the institution of some handsome and really valuable memorial medal, which, given annually to some new and meritorious florists' flower—Auricula, Carnation or Picotee, show Pelargonium, Dahlia, or Chrysanthemum, for instance—would prove a worthy memento of one who loved these flowers above all others. *X.* [This letter, it need hardly be said, was written previous to the meeting on the 11th inst. ED.]

**Seed Sowing.**—It does not seem to be the general practice with gardeners, when sowing seeds in pots and pans, to cover them with something that will make them germinate in darkness. Now it has been ascertained that all seeds will germinate more readily when so covered with a piece of slate, tile, or board—which must be removed as soon as it is seen that germination has taken place—than when not so covered. It is also found that the seeds of hardy plants germinate best when in a temperature of 55° to 60°; and if seeds are to be sown as soon as gathered, it must be ascertained that the germ or embryo is fully developed; when that is so it is not necessary to wait till the seed is perfectly ripe. Perfectly ripe seeds, owing to the amount of carbon contained, and which must be consumed before it will grow, will be found to require a longer time to germinate. *M.*

**A Novel Method of Planting a Cottage Garden.**—I lately saw in an amateur's garden what seemed to be an unusual arrangement of, or combination of, flowers and vegetables. The plot was an oblong, 50 yards by 12 yards, with an oval centre bed half way down. The central path was of nicely kept turf, on either side of which was the small Mentha and Pyrethrum; next a row of Stocks, then double Pelargoniums and Asters, next a row of Peas and parallel pyramids of Scarlet Runners. These are charming objects just now, and the Beans may be gathered far more conveniently than when planted in rows, besides yielding a better crop. There was in the same garden until quite lately a long bed 3 feet wide under a north wooden fence. It consisted of a belt of Dean's Sweet Williams, a foot wide, then a row of Antirrhinums of Ware's excellent strain, and then a back line of Canterbury Bells of mixed colours, among which white was conspicuous. For weeks past this bed was a dense mass of varied and beautiful colours, and one might cut and come again every day without marring its beauty. *T. W.*

**The Germination of Cyclamen and Yucca.**—It will be generally known to gardeners that seeds of Yuccas do not germinate in the usual way, that is, by thrusting up a plumule from the apex of the seed, and pushing the root downward as in nearly all dicotyledons, but throw out a curved neck-like growth [the cotyledon], the end of which is swollen and contains the embryo; this, after the neck has grown an inch or thereabouts, brings forth a leaf and root fibres simultaneously. Cyclamen seeds, among dicotyledons, germinate in a similar manner. So that in these the embryo is thrown out previous to germination, and is fed by the stored up food in the seed itself, previous to the roots drawing sustenance from the soil. This points, in the Yuccas at least, to their adaptability for germination in dry hard soils. *H.*

**Tomato Chiswick Red.**—This fine and distinct variety is both a free grower and a wonderful bearer. A small span-roofed house of this Tomato in Messrs. Wood & Ingram's nursery at St. Neot's shows vigorous plants with the main shoots thickly hung in large clusters of fruit. This variety promises to be of the greatest value for market purposes, because of its great productiveness and its free growing character—free growing in the sense that it is of a hardy vigorous character, and not likely to succumb to conditions that sometimes make it difficult to cultivate less hardy sorts. It is said of this Tomato that it is one of the very best for winter culture, because it requires less heat than some of the larger fruited sorts. Messrs. Sutton & Sons did good service to gardeners of all degrees when they put this useful Tomato into circulation. *R. D.*

**Flowering of Chamærops Fortunei, and Eucalyptus.**—If the note on the Palm that is now flowering in the open air at Bonchurch refers to this variety, and not to C. excelsa—which I think must be the case—I beg to say that it is no new occurrence, as we have a pair of grand plants that have never failed to throw up immense spathes of flowers every season for the last fourteen years, and very fortunately also our plants are a pair, that is, male and female; and from seed thus obtained we have young plants, that are eventually destined to be also planted in the open air, where our plants have wintered for the last

seventeen years without the slightest protection, other than their own natural beards—if I may so term the thicket of cocoa-matting-like substance with which the trunks are covered from top to bottom. The Blue and Red Gums (Eucalyptus) are also now flowering with us, and promise to make fine (I was going to say) timber trees, and such indeed would be the fact if appearance only constituted timber. Their beautiful glaucous coloured and tremulous, or constantly moving foliage, adds a charm to tree landscape effects that none of our native trees possess. But there's a dark side to the picture, namely, that the first really severe winter will destroy them. *W. Wildsmith, Heckfield, Hants.*

**Ameer Pea.**—I very much regret that I should have, according to Mr. Laxton, so incorrectly represented his new Pea Ameer. I went to Chiswick to get some independent notes on the Peas grown there, not based on the raiser's information, but upon the evidence there offered, and upon what I could gather from those who had superintended the trial; hence my connecting the Ameer with William I. for purposes of comparison. That is, I think, quite enough for the general reader, who is little concerned about origin, colour of seeds, &c. *The Writer.*

# Reports of Societies.

## ROYAL HORTICULTURAL: Aug. 11.

Falling considerably in regard to quantity behind the earlier summer shows held in the conservatory in the Society's Garden at South Kensington, there was quite enough to interest both the gardener and the public generally.

Mr. Ware's fine bank of hardy perennials—bulbs of various species—afforded much interest to visitors, and was in itself a good show. The classes for Fuchsias, Caladiums, Hollyhocks, and Gladioli, with the exception of the last-named, were not numerously filled. The Gladioli of Messrs. Kelway & Son were superb, both in old and new varieties; and in the fruit shown by Mr. F. T. Rivers, Sawbridgeworth, was seen the best collection of Gooseberries brought under public notice for many years past. The same nurseryman exhibited Plums and Cherries in pots, proving, beyond doubt, the adaptability of both for this method of culture, for the miniature trees were loaded with fruit approaching ripeness, and in the case of the Cherries perfectly so.

### Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. H. Bennett, T. P. Kinghorn, A. Perry, J. Child, H. M. Pollett, J. Douglas, J. Hudson, J. Fraser, J. James, C. Noble, J. Dominy, J. Smith, H. Ballantine, W. B. Kellock, J. Walker, H. Turner, H. Cannell, E. Hill, H. Williams, Masters, and J. O'Brien.

#### Miscellaneous Plants.

From Messrs. J. Veitch & Sons the hybrid Rhododendron, Indian Yellow, shown at a previous meeting—the best of its colour in greenhouse varieties—secured the proper attention it deserves. From the same nurseries came Cyathea divergens, a graceful Fern, with stalked pinnæ; Acer Hookerianum, leaves of copper-red, and acute in form, the reverse of leaf deeper in colour than the upper side, young shoots bright brown; Davallia retusa, a Fern of an elegant appearance; Lælia monophylla, a Jamaican species, showing a single bloom of an orange colour, the plant being very slender and weak in growth; Clethra arborea, rarely seen flowering at so young an age, was covered with Lily of the Valley-like flowers; Berberis trifoliata with Holly-like foliage of a greyish-green, and the habit erect; Platycodon Mariesi, with deep purplish-blue flowers in terminal corymbs, at first sight looking like a Lisianthus Russellianus. Some fine Gladioli were shown likewise, viz.:—La France, a flower of medium size, pink in the upper segments, the inferior ones tipped with bright yellow, the lowest segment is pink with a claret stain; G. André Chenie, carmine, large, and regularly formed: the colour is decidedly novel in Gladiolus; G. Henri Conscience is purple-rose, with a stain of the same hue in the throat, the lower segments are marked boldly with white.

Mr. Bull, Chelsea, showed a pretty Aristolochia named elegans, a flower of 3 inches in diameter across the face, beautifully tesselated with purple on a white ground, the inner portion of the flower being of a rich purple: the sac, or part resembling a pipe, is green, and not conspicuous; Alocasia Sanderiana, dark green, Oak-leaf form of foliage, margined and ribbed with white: Euterpe plumosa, a pinnate-leaved Palm, with the foliage rather more pendulous than in E. edulis; Cycas siamensis, a specimen resembling in leaf-growth C. circinalis, and differing in the rootstocks from it; Alocasia exsculpta, green digitate foliage, without variegation; a white-blossomed Mussænda, named theifera; Lælia Amanda, a small flower, with flesh-coloured sepals and petals, and a frilled lip of purple, having the margin pale rose; Kentiopsis macrocarpa, a bold-habited Palm, the young leaves being of a coppery-red colour.

Mr. Holab, gr., Redleaf, Penshurst, showed Galeandra devoniana, the creamy-white tubular flowers striped purplish-brown in the mouth, and sepals and petals brown and green, on tall, erect stalks, was a noticeable plant.

Messrs. Sander & Co. showed Phalænopsis Reichenbachiana, a single richly-coloured flower on a little plant.

Mr. White, gr. to Mr. Dorman, Laura Park, Sydenham, showed a very fine piece of Mormodes Dormanianum, with glaucous leaves, and carrying ten blooms on a massive spike; the blooms are ivory-white, but densely spotted with minute lilac dots; the column is lilac.

George Hardy, Esq., Timperley, Cheshire, had Cattleya Hardyana, a splendid species, with heavy, large flowers of the richest combination of rich purple and gold. A fuller account of this grand plant will be found in our Orchid Notes of this number.

Messrs. Laing & Co., Forest Hill, had some Begonias from the open ground, as Madame Dubois, Louis de Gossancourt, Leon de St. Jean, and a few novelties in Caladiums, the best of which was Raymond Lemoine—a leaf with a crimson centre, and margin dull white; next was Auguste Carpentier, also crimson, but a margin of a deep green shade.

A great quantity of Lilium auratum and L. longiflorum, and Gladiolus Lemoine came from the New Plant and Bulb Company, Colchester.

The rich bank of flowering plants from Mr. T. Ware's nursery, Tottenham, which was full of a most varied collection, received a Silver Banksian Medal. In this group was an interesting collection of shrubby New Zealand Veronicas, including carnosula, pinquifolia, epacridea, Colensoi, Chathamica. Many of these would make excellent window plants, resembling dwarf Boxes, or Euonymus.

Messrs. H. Cannell & Sons, Swanley, showed a small collection of Begonias, of which Blanche Duval, a flower of creamy-white, full, of large size, and with a thin wiry margin of pink; B. Gabrielle Legros, yellow; and King of Crimsons, a single flowered variety, were the best.

A grand plant of Sarracenia Patersoniana, a hybrid between S. purpurea and S. Drummondi, was shown by Dr. Paterson, Bridge of Allan, N.B. Of this unique variety only nine plants exist, the Doctor having six of them, the others being in the Royal Botanic Gardens of Dublin and Edinburgh, and one at Sandringham. The pitchers are of a crimson colour, appearing beautifully veined when the sun shines on them, and, when fully developed, 2 feet high. It is very like S. Chelsoni ×.

Mr. B. S. Williams, Holloway, showed Mormodes luxatum punctatum, a paler form than that of Mr. Dorman. The well-known Amaryllis, Mrs. Lee, and Chysis lævis superba, the rich brown and yellow colours making up a telling subject.

From the Harpenden School there came a capital collection of wild plants found in the Harpenden district. These plants were correctly named, the order, botanical name and the popular name being severally given. Each of the boys who showed had thirty distinct specimens, tastefully set up and in sufficient quantity to make a respectable show. Amongst the rarer species may be mentioned Dianthus Armeria (Deptford Pink), Epipactis latifolia, very scarce in Hertfordshire, a good spike of Hypericum Androsæmum, growing in woods to the height of 6 feet, Verbascum nigrum, Erythræa centauria, Symphytum tuberosum, Lotus tenuis, the slender-leaved Lotus, very scarce; Lysimachia vulgaris, Mellotus leucantha, Butomus, umbellatus, found in quantity on the banks of the river Lee, the hunting ground of the Harpenden boys. A good piece of Atropa Belladonna, bearing flowers and berries, was shown. A Silver-gilt Medal was awarded the collection, than which a more instructive one is seldom seen at flower shows.

For a collection of Phloxes, shown by Mr. T. Ware, a Silver Medal was awarded; and a Bronze Medal to Mr. Rivers for cut Roses.

#### Competing Classes.

For Fuchsias, six distinct (open).—The 1st was withheld; Mr. J. Lambert, gr. to H. W. Segelcke, Esq., Elindale Lodge, Herne Hill, taking the 2d. In the amateurs' class for the best four Mr. Lambert was again 2d, no other prize being awarded. For twelve plants, distinct, in 6-inch pots (open), Mr. Lambert secured the 1st, and Mr. H. James, Castle Nurseries, Lower Norwood, the 2d.

For six Caladiums, distinct (open).—Messrs. J. Laing & Co., Forest Hill, were 1st, for rather large plants, well assorted as to colour; 2d, Mr. Chadwick, gr. to E. M. Nelson, Hanger Hill House, Ealing; 3d, Mr. H. James.

A few Asters were shown, of no particular merit. Mr. J. Bass, gr. to A. S. Price, Esq., Parkside House, Ewell, was 1st; Mr. J. S. Cooper, Windmill, Bishop's Stortford, 2d; equal 3d being Mr. J. Morgan, gr. to Major Scott, Wray Park, Reigate, and Mr. W. Smith, Windmill, Bishop's Stortford.

Messrs. Kelway & Sons took the 1st prize for a very choice lot of Gladioli, some of his best new flowers being Opitu, crimson; Lord Leigh, cerise; Lady Newport, rosy-carmine; Mr. Thornton, deep crimson; Irex, pale pink; Lady Carington, lilac-rose—a very fine flower and spike; Milton, cerise-scarlet; Abas, cerise-scarlet, with white flame.

Hollyhocks in twelve distinct varieties, single blooms, and in twelve distinct spikes.—The prizes—two 1st—were taken by Mr. T. Ware.

Tomatos in pots, four plants.—The 1st prize was taken by Mr. Chadwick for nice bushy plants, well fruited.

#### Special Prizes,

offered by Messrs. Sutton & Sons, Reading, for the best three dishes of Tomatos, twelve in a dish.—1st, Mr. Becket, Cole Hatch Farm, Penn, Bucks, his best fruit being Stamfordian and Reading Perfection, the other being Chiswick Red; Mr. Castle, West Lynn, took 2d, Messrs. Webb & Son, Stourbridge, offered prizes for the best collection of vegetables, consisting of not less than eight kinds. The 1st prize was taken by Mr. Waite, gr., Glenhurst, Esher; and the 2d by Mr. J. A. Becket. The various items shown were very good, especially the Girtford Giant Runners and Intermediate Carrots, and Snowdrop and Woodstock Potatos in the first collection, and the Leicester Red Celery and Green Globe Artichokes in the second.

#### First-class Certificates.

To Messrs. Kelway & Son, for Gaillardia St. Blaise.
To Messrs. Kelway & Son, for Gladiolus Galatea.
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To Mr. T. Ware, for Campahula pyramidalis var. bicolor.
Mr. Owen, for Ivy-leaf Pelargonium Souvenir de Charles Turner.

### Fruit Committee.

Present: G. Bunyard, Esq., in the chair; and Messrs. G. T. Miles, J. Woodbridge, J. Roberts, Harrison Weir, Sidney Ford, R. D. Blackmore, T. Francis Rivers. Several seedling fruits, as Grapes, Plums, Gooseberries, and some few early varieties of Apples, were shown, also a few Melons.

Mr. Rivers showed Golden Eagle and Lord Palmerston Peaches, Bigarreau Cherries, Gros Coueret, and Monstreus de Metzel, two fine varieties, and a fine black Cherry named Noir de Guben. Over 100 dishes of the best varieties of Gooseberries were shown from the same nursery, the fruits bearing evidence of having been well grown. Some excellent specimens of trees in pots, as Cherries, Plums, well fruited, were also shown, the latter being especially good.

Messrs. Rivers & Sons received a Silver-gilt Medal for the collection of Gooseberries.

## INTERNATIONAL HORTICULTURAL EXHIBITION: Antwerp, August 2–6.

(*Concluded from p.* 184.)

Miscellaneous.—For the best Bromeliaceous plant, either in flower or not, the prize, a 2d, was taken by M. P. T. Boutman, Lille, for a capital specimen of Vuiesia Glazouiana, 4 feet in height by 6 feet in diameter.

In a class for three plants in flower, shown by M. L. van Houtte, was a well-flowered small specimen of the difficult Theophrasta Jussiei, the buff coloured tubular flowers of which spring from the axils of the leaves, making it a singular-looking object; Globba coccinea, so rarely seen, was likewise shown by him in the same competition.

Anthurium Hookeri, shown by Madame Le Grelle D'Hanis, in a class for a single Aroidaceous plant, was a splendid specimen, with leaves from 5 to 6 feet long and 1½ foot in breadth.

MM. Wallem & Sons, Ghent, showed a collection of Gleichenias that were of medium size for the varieties shown, and that were lightly tied out. The best plants were G. Mendelii, G. flabellatum, and G. dichotoma.

A neat specimen of Araucaria elegans was shown by Jakob-Makoy & Co., and a plant of Cocos Bonnetti, well developed, and 10 feet high, was shown by M. F. J. Spae, Ghent.

A novel collection of Platyceriums, by Jakob-Makoy & Co., was quite interesting as such; it included P. alcicorne, grandis, bifurmis, Hillii, alcicorne majus, and Willinckii, all of them nicely grown, and of fair size. Madame Le Grelle D'Hanis was the winner of the highest prize for a collection of thirty specimens of Ferns, and MM. Wallem & Sons, the 2d. The first collection contained plants of medium and useful sizes, of which the following were the best specimens:—Gymnogramma Wettenhaliana Flandriæ, with considerable white mealiness; G. Lauchiana, G. intermedia, Adiantum macrophyllum, A. gracillimum, A. cuneatum, and A. Neo-Caledoniæ, together with the seldom seen Acrostichum squamosum, the foliage of which is entire, and much powdered with white.

In the class for fifty plants in flower, M. Pawells, Antwerp, took the leading prize, and if nothing in the collection was of exceptional merit culturally, it will be yet of interest to note some of the best things in it; as, Olearia Haastii, a well bloomed mass in a broad pan; Dracocephalum virginicum, Callistemon rigidus, Hyacinthus candicans, Cuphea platycentra, grown as a dwarf standard; Ligustrum lucidum, an Aster like dumosus, but not named, very pretty and full of bloom; Montbretia crocosmæflora; Russelia juncea, Pavonia Wiotii being Chiswick Red; Mr. Castle, West Lynn, took 2d, Messrs. Webb & Son, Stourbridge, offered prizes for the best collection of vegetables, consisting of not less than eight kinds. The 1st prize was taken by Mr. Waite, gr., Glenhurst, Esher; and the 2d by Mr. J. A. Becket. The various items shown were very good, especially the Girtford Giant Runners and Intermediate Carrots, and Snowdrop and Woodstock Potatos in the first collection, and the Leicester Red Celery and Green Globe Artichokes in the second.

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## INTERNATIONAL HORTICULTURAL EXHIBITION: Antwerp, August 2–6.

(*Concluded from p.* 184.)

Miscellaneous.—For the best Bromeliaceous plant, either in flower or not, the prize, a 2d, was taken by M. P. T. Boutman, Lille, for a capital specimen of Vuiesia Glazouiana, 4 feet in height by 6 feet in diameter.

In a class for three plants in flower, shown by M. L. van Houtte, was a well-flowered small specimen of the difficult Theophrasta Jussiei, the buff coloured tubular flowers of which spring from the axils of the leaves, making it a singular-looking object; Globba coccinea, so rarely seen, was likewise shown by him in the same competition.

Anthurium Hookeri, shown by Madame Le Grelle D'Hanis, in a class for a single Aroidaceous plant, was a splendid specimen, with leaves from 5 to 6 feet long and 1½ foot in breadth.

MM. Wallem & Sons, Ghent, showed a collection of Gleichenias that were of medium size for the varieties shown, and that were lightly tied out. The best plants were G. Mendelii, G. flabellatum, and G. dichotoma.

A neat specimen of Araucaria elegans was shown by Jakob-Makoy & Co., and a plant of Cocos Bonnetti, well developed, and 10 feet high, was shown by M. F. J. Spae, Ghent.

A novel collection of Platyceriums, by Jakob-Makoy & Co., was quite interesting as such; it included P. alcicorne, grandis, bifurmis, Hillii, alcicorne majus, and Willinckii, all of them nicely grown, and of fair size. Madame Le Grelle D'Hanis was the winner of the highest prize for a collection of thirty specimens of Ferns, and MM. Wallem & Sons, the 2d. The first collection contained plants of medium and useful sizes, of which the following were the best specimens:—Gymnogramma Wettenhaliana Flandriæ, with considerable white mealiness; G. Lauchiana, G. intermedia, Adiantum macrophyllum, A. gracillimum, A. cuneatum, and A. Neo-Caledoniæ, together with the seldom seen Acrostichum squamosum, the foliage of which is entire, and much powdered with white.

In the class for fifty plants in flower, M. Pawells, Antwerp, took the leading prize, and if nothing in the collection was of exceptional merit culturally, it will be yet of interest to note some of the best things in it; as, Olearia Haastii, a well bloomed mass in a broad pan; Dracocephalum virginicum, Callistemon rigidus, Hyacinthus candicans, Cuphea platycentra, grown as a dwarf standard; Ligustrum lucidum, an Aster like dumosus, but not named, very pretty and full of bloom; Montbretia crocosmæflora; Russelia juncea, Pavonia Wiotii

with a flower of crimson thread-like rays; a dwarf growing Nerium or two, Lantanas, Fuchsias, Lilies, &c.

In a nurseryman's class for thirty plants, the 1st prize was awarded to M. L. van Houtte, the collection comprising, amongst others, Hydrangea Dr. Hogg, apparently a valued variety in Belgium, and one that is seen usually very well flowered; Nerium Madonna, a dwarf variety, well bloomed, white, grown in a small pot; Bouvardia Humboldtii, Veronica atropurpurea, a beautiful Habrothamnus corymbiflorus, bearing scarlet flowers, Begonias, &c.

Caladiums were exhibited in considerable numbers, but we saw nothing that approached in beauty of leaf markings M. Bleu's collection shown at the last Paris show. The 1st prize was awarded to M. L. van Houtte for a pretty, well assorted lot, amongst which Ibis rose, a pink-leaf, Isis, marbled white and buff with veins of crimson colour; L'Aurore, white and red; and Madame Metzana, were the most distinct novelties.

The same firm took 1st prize for an Aroid of remarkable growth, Philodendron Melinoni paranense, with sagittate-cordate foliage of a large size, the leaf-stalk being greenish-red spotted with crimson. The 1st prize for a single Dracæna, or Cordyline, was also taken by M. van Houtte with D. Lindeni, a grand plant; M. Ed. Pynaert being 2d, and MM. Waartle, 3.

For a single herbaceous Fern the 1st prize went to M. Vermeers de Baerdemaecker, for a large plant of Gymnogramma gigantea; and for a single warm-house plant of merit, M. Trisson took 1st prize, with Dasylirion mexicanum, an old specimen with a stem 1 foot in height, carrying a large head of foliage.

Hymenophyllums were shown in twelve species by M. Louis de Smet, who obtained the 1st prize; and MM. Wallem & Son, 2d. The collections were inclusive of the following:—H. nitens, cardiculatum, crispatum, Wilkesianum, demissum, intermedium, Hymenophyllo-ides, and flexuosum.

Several collections of Cactuses, Echinocactus, &c., were shown, but the specimens were mostly small, if rare, and but few bore flowers. The 1st prize was obtained by M. Vermeulen, Antwerp. The 2d prize was awarded for a smaller lot to M. Verschmeeren, Antwerp. In this lot were the rare and curious Scopa cristata and Opuntia polyacme, the latter bearing yellow flowers.

Foliage Begonias were not equal to what our growers can show. M. J. Moens, Lede, took the 1st prize, and M. Aug. Fuchs the 2d.

M. Blanquaert took 1st prize for flowering tuberous varieties, that did not equal the best we have on this side, either in quality or culture.

M. L. van Houtte was awarded the 1st prize for double-flowered varieties.

Messrs. Soupert & Notting, Luxembourg, had eight large boxes of cut Rose blooms, not by any means bad, in spite of the late season and the hot weather, to which a 1st prize was awarded.

A handsome collection of erect flowered Gloxinias was shown by M. Ferd. Kegeljan, Namur. They were well bloomed, and possessed excellent foliage and densely spotted flowers.

A collection of varieties of Ixoras in 48's was shown by M. L. de Smet, Ghent, and would probably comprise all that are known to gardeners, each plant bearing two or three heads of bloom.

A very pretty collection of Bertolonias and Sonerilas was shown by M. P. T. Boutman, Lille, the plants being fresh-looking, strong, and the leaf-markings charming. It was a very complete assortment.

From Mr. C. Turner, Slough, there came a collection of Carnations, extra large, and clear in the markings and ground colours. Border Carnations by Belgian growers were shown surrounded with their foliage, but were of an inferior size, although most useful in every way. Madame E. Mayer received the 1st prize.

One of the minor features of the large pavilion was a group of Dracæna Doucetii, a creamy-white striped variety, apparently, of D. indivisa. It is a plant that will be much heard of in the future, as it is a highly decorative subject for indoors work, and for grouping, or as a solitary plant in flower garden designs.

M. Le Jeune, Berchem, Antwerp, showed the curious Rubus australis, trained as a column of 10 feet in height, very dense in growth, and seemingly of a great age.

Two splendid plants of Corypha Gebanga were exhibited by the Compagnie Continentale, also a pair of Kentia rupicola 10 feet high, Coleus from M. Pynaert van Geert, and a variety of soft stuff, such as zonale and Ivy-leaf Pelargoniums, Lilium auratum, Carnations in pots. Tuberous Begonias were grouped in beds on the ground-level in the central portion of the vast pavilion, and gave just the welcome amount of colour and brightness the great masses of foliage plants stood in need of, permitting, by their low growth, an uninterrupted view from the centre outwards to the sides.

The two finest groups of foliage plants were those of Madame Le Grelle D'Hanis and of M. Van der Wower, of Antwerp, the latter not being in the competition, the former obtaining the 1st prize in its class. The effect of the great masses and groups of Palms, Tree Ferns, Philodendrons, Anthuriums, Dracænas and the like, in which Belgian gardens are so richly found, arranged as it was with great judgment, was such as can be seen but on rare occasions.

## BARLOW MOOR FLOWER SHOW: August 8.

For a number of years a show in connection with the Didsbury and Barlow Moor Floral Society was held annually in the neighbourhood but has been discontinued until on Saturday last, when the first show of a newly formed Society was held in the National Schools.

Entering the show we were pleased to observe a very good collection of exhibits, both in plants, flowers, and fruit, and also to find a good number of visitors. The exhibitors were confined exclusively to those living in the parish of Barlow Moor; another year, it is to be hoped, Didsbury and Withington will be permitted to compete.

For six stove and greenhouse plants, S. Baerlein, Esq. (G. Williams, gr.), was 1st, showing Cycas revoluta, Kentia australis, Croton Queen Victoria, Ixora amboinensis, with forty trusses of bloom; Erica tricolor rosea and E. tricolor dumosa; T. J. Bolland, Esq. (J. Fletcher, gr.), was a good 2d, with Cocos Weddelliana, Areca Verschaffelti, Pandanus Veitchii, Erica æmula, E. Parmentieri rosea, among his best plants.

S. Baerlein also carried off 1st for four stove and greenhouse plants, showing Erica tricolor Wilsoni and Ixora Williamsi, in excellent condition.

The same competitors appear in the class for six Ferns, S. Baerlein, Esq., winning with Cyathea dealbata, Dicksonia antarctica, Gleichenia flabellata, Cibotium Schiedei, Polystichum capense, and Microlepia hirta cristata; T. J. Bolland's lot comprising Davallia polyantha and Mooreana, 8 feet across; Brainea insignis, a grand plant 6 feet in diamater, Gleichenia dichotoma and dicarpa, and Adiantum concinnum latum; J. G. Silkenstadt (C. Humphreys, gr.), was 3d.

S. Baerlein was 1st for one Fern, with Cyathea Burkei, and J. G. Silkenstadt 2d, with a good plant of Dicksonia fibrosa.

T. J. Bolland was 1st with three Fuchsias, T. Brockbank winning with one.

S. Baerlein was 1st with three Dracænas, J. G. Silkenstadt 2d.

With twenty miscellaneous plants S. Baerlein, W. Brockbank, and J. G. Silkenstadt competed, the former just getting 1st, though to many the 2d group seemed to come nearest to the idea of what is expected in a group of a miscellaneous character.

T. J. Bolland came first with table plants, S. Baerlein 2d.

J. G. Silkenstadt showed good Caladiums, and was awarded 1st.

W. Brockbank (A. Mottershead, gr.) was successful with white and black Grapes, showing good Black Hamburghs and Buckland Sweetwater; A. Galbraith was 2d in the class for Black Hamburghs.

For a dish of Peaches and also a dish of Nectarines J. Morris, Esq. (A. Cole, gr.), was 1st, with Royal George Peach and Elruge Nectarines.

W. Brockbank was 1st with Melons, showing Scarlet Premier.

For a collection of vegetables, eight varieties, T. J. Bolland and J. G. Silkenstadt were placed equal 1st.

For a dish of twelve kidney Potatos, Mr. W. Bennet came in 1st, W. Dutton 2d. W. Bennet was also 1st with a dish of Peas, eighteen pods; G. Lamb, 2d. Model gardens are always a feature at shows of this character, and this formed no exception.

Twelve Roses were shown by W. Brockbank, who was 1st; he also was successful with Stocks and with a collection of hardy herbaceous plants. In this group we observed Lychnis coronaria and chalcedonica, Androsace lanuginosa, Rudbeckia laciniata, Helenium autumnale, Lilium testaceum pardalinum, and chalcedonicum; a fine seedling Delphinium; Actæa racemosa, Stenactis speciosa, Liatris spicata, Lathyrus latifolia, Harrison's Seedling Phlox, and many others.

For six trusses of stove and greenhouse flowers, S. Baerlein, who was 1st, showed Allamanda Hendersoni and nobilis, Anthurium Andreanum, Ixora salicifolia, Stephanotis, and Statice profusa.

J. Hooley, Edgely Road Nurseries, and W. G. Caldwell & Sons, had each a good group of mixed stove and greenhouse plants; in the latter group we observed three of the newer Crotons, viz., mosaicus, Neumanni, and Flambosa ?!

A nice collection of fruit, also of vegetables, were [illegible] In this latter stand were [illegible] that caused the [illegible] to [illegible].

Mrs. E. Mellor, Chorlton, had a group of small Coniferæ, also about two dozen nice seedling Begonias of fine size and substance.

W. Brockbank showed some sticks of Stott's Monarch Rhubarb, measuring 9 inches round. Many other exhibits were staged of a satisfactory character. The committee were highly gratified at their first venture. (*A Correspondent.*)

## LATIMER FLOWER SHOW.

One of the prettiest country shows we have seen of late years was that of Latimer, the beautiful seat of Lord Chesham. The fine old house is situated on the right side of the valley of the Chess, which, in front of the mansion, assumes the proportions of a lake. The horizon is bounded by wooded hills, the Chilterns, which stretch in nearly paralled ridges from Rickmansworth to Chesham. The competition for the numerous and sufficiently liberal prizes is restricted to the labourers, under-gardeners, and mechanics employed by his Lordship or the tenantry on the estate. The two latter form a separate class, although the same number and amount of prizes is allotted to each. The classes were well filled, and the competition for almost every entry well sustained. The specimens, which consisted chiefly of useful vegetables, were on the whole rather small, but of excellent quality. Potatos were neatly arranged within circular hoops. Chesham and the neighbourhood has a great wood industry, the staple trade being the manufacture of hoops, wooden bowls, chairs, and farm implements. Judging from the quantity of produce exhibited, and the large number of entries, cottage gardening must be in high repute at Latimer.

The show was held in a very large tent, down the centre of which was arranged a handsome group of plants by Mr. Bone, the head gardener at Latimer. The scene in the grounds was extremely picturesque. The country folk for miles round had assembled in their Sunday best, the farmers with their wives and daughters in smart vehicles, the numerous carriages, and the groups of young people listening to the strains of the bands and waiting to trip it on the green, formed altogether, with the delightful surroundings, a scene only to be equalled on such an occasion as a country flower show. The parterre was in its summer glory, and the grounds altogether in excellent keeping. A drive from historic Chenies, the family seat of the Russells, along the valley of the sparkling Chess, through the heart of the Chilterns, by Latimer to Chesham, is one of the most enjoyable. The rules and regulations seem to be concise and sensible, and, placing the under gardeners in a class by themselves is an arrangement which must necessarily tend to fairer conditions than is usually the case at county shows. In the present instance the under gardeners and mechanics would have had a monopoly of the prizes. *T. W. Harrison.*

## SCOTTISH ARBORICULTURISTS ON THE BORDERS.

The annual excursion of the members of the Scottish Arboricultural Society was held on the 5th and 6th inst., both sides of the Borders being visited. On Wednesday, the first day, the members visited Langholm, Canonbie, and Netherby, the programme for the second day including a visit to Lowther. On Wednesday at Langholm the members were joined by a number of friends from Carlisle, including a few of the members of the English Arboricultural Society. The places visited at Langholm included the grounds of the Duke of Buccleuch and the west side of the Esk as far as Burnfoot Bridge.

On Thursday morning the members of the Society, together with some members of the English Arboricultural Society, assembled at Knowefield Nurseries, where, after inspecting the grounds under the guidance of Mr. Greig, nursery manager, they were hospitably entertained at breakfast in a marquee by Mr. James Watt, sole partner of the firm of Messrs. Little & Ballantyne. Those present included Dr. Cleghorn, of Stravithie (President of the Scottish Arboricultural Society), the Mayor of Carlisle; Mr. Dunn, Mr. Hull, and Mr. Doughty (representatives of the Duke of Buccleuch), Mr. Kennedy (Appleby Castle), Mr. Balden (Naworth Castle), Mr. Wilson (Greystoke), Mr. Kirk (Anglesey, Wales), Mr. Baty (Netherby), Mr. Kay, Mr. Davidson (Secretary of the English Arboricultural Society), Mr. Dods (forester for Lord Sefton), Mr. Nanson (Town Clerk, Carlisle), Mr. F. P. Dixon (Carlisle), Mr. W. I. R. Crowder (Carlisle), Rev. T. W. Anderson (curate of Stanwix), Mr. Tinning (Carlisle), Mr. Sutherland (Longtown), Mr. Greig (nursery manager, Knowefield), Mr. Ferguson (Knowefield), and Mr. Taylor (Knowefield).

After an excellent meal, provided by Mr. Mackenzie of the "Bush" Hotel, and served under his personal superintendence,

Dr. Cleghorn said there was a duty upon them this morning. They had long known Mr. Watt as a very active, earnest, and learned friend. This morning Mr. Watt had put them under a debt of obligation by his very kind and hospitable reception; and they could not leave without according to him a vote of thanks for his generosity. They had on Wednesday, as well as on many former occasions, to acknowledge Mr. Watt's very friendly and kindly action towards them. He had himself often heard of the extensive nurseries of Knowefield, but he had seen them this morning for the first time. He had been very much struck by the extent of the nurseries, a compact area seldom found near a large town. He had been struck with the economy of labour displayed; he had been struck with the fruitful propagation and the accuracy of the nomenclature. Dr. Cleghorn then referred to the want of nurseries in India, and laid stress upon the necessity of young planters who intended to go out to India becoming thoroughly acquainted with the practice of the nursery before they left this country.

The Mayor of Carlisle seconded the vote of thanks to Mr. Watt for his hospitable entertainment. He might say, representing the town, how glad they were to see the Scottish Arboricultural Society in Carlisle. He wished also to express their regret that the visit of the Society had not been favoured with better weather. It seemed to be their lot in Carlisle to have wet weather when meetings of important societies took place; they suffered a sad disappointment in that respect when the Royal Agricultural Society came to Carlisle, and it seemed that their ill-luck was still pursuing them. He hoped that they would have better weather at Lowther.

Mr. Watt, in acknowledging the vote of thanks, assured them that it was extremely gratifying to him to have an opportunity of offering the hospitality of his home to the Scottish Arboricultural Society, presided over as it was by such an able and distinguished man as his friend Dr. Cleghorn. He was extremely indebted to the Mayor for so kindly coming to Knowefield and showing him friendship upon an occasion of this kind when he could so much appreciate his kindness. He was glad to have an opportunity of introducing a sister society to the members of the Scottish Arboricultural Society, a Society smaller in membership, but which was doing very much good in fostering the art of forestry. There was not a branch of industry that had lain dormant so long as forestry, and he felt sure that in the interests of the nation there was no industry that would, if properly developed, do more for the enrichment of the country at large. He gave them a hearty welcome, and trusted that this meeting would tend to improve the membership of the Societies. Mr. Watt then intimated that he had received letters of apology for absence from various noblemen and gentlemen. One of these, the only one which he would read, was from Dr. Lyons, the Member

for Dublin University. Mr. Watt then read Dr. Lyons' letter, in which that gentleman stated some of his well-known views on the subject of forestry, and expressed the opinion that forestry offered an opportunity of getting out of the slough of depression in the trade of this country. In conclusion, Mr. Watt hoped that the remainder of the day would be filled in with great pleasure, and that they would afterwards look back upon their visit with pleasant recollections in years to come.

The members of the two Societies shortly afterwards left Knowefield for the Citadel Station, from which they travelled by train to Lowther. *Carlisle Journal, Aug. 7.*

## SCOTTISH HORTICULTURAL ASSOCIATION.

THE fifth ordinary meeting of this Association for the session was held at 5, St. Andrew Square, Edinburgh, on the evening of the 4th inst., Mr. Matthew Todd presiding. Mr. Alex. Milne, of Dickson & Sons, read a paper on "Potatos—their early history and culture." He traced the growth of the tuber from its introduction by Sir Walter Raleigh, and dwelt on the great national calamity caused by the failure of the crop in 1845. He maintained that on no similar acre of land could so much food be produced at so little expense as by the cultivation of the Potato. In the discussion which followed, Mr. Mackenzie, Warriston, referred to Potato culture, and gave his recollections of the year of the Potato famine. The Secretary (Mr. Munro) made some remarks on the question of the the disease, pointing out, what he had previously stated in a letter to the *Scotsman*, that the Potato was not the only plant liable to parasitic fungi, and so long as man continued to direct his attention to a single part of the plant—the tuber—to the general neglect of the health of the plant itself, so long would it be liable to disease. Hollyhocks were given as an instance in which growers had directed their attention entirely to the enlargement of the flower, with the result that in a few years the plant succumbed to parasitic fungi. The Chairman, in directing attention to the exhibits submitted by members, suggested that a Society like theirs should have a conference on small fruits, for the cultivation of which the climate was suitable, and by that means they might be able to find their correct nomenclature and the best varieties, instead of having, as at present, to grope in the dark and obtain what they wanted from nursery catalogues. Messrs. Dickson & Co. exhibited the newer forms of Rasps in cultivation; from Hay Lodge, Trinity, herbaceous flowers were sent; and Mr. Finlayson, Kedhouse, exhibited a new seedling Gooseberry, for which he was awarded a First-class Certificate.

## DUNDEE HORTICULTURAL ASSOCIATION.

THE monthly meeting of this Association was held in the Young Men's Rooms on Friday evening: Mr. W. R. M'Kelvie in the chair. Mr. W. Williamson, gr., Tarvit, Cupar, read a paper entitled, "Judging at Flower Shows." He controverted at the outset a popular error that gardeners who are in the habit of competing in fruit competitions frequently undercrop their fruit for the purpose of having extra large specimens. He held that to take less fruit from a tree than what it can bear and bring to perfection is a waste of tissue and a strain on the functions of the plant which has a detrimental effect and defeats the end desired to be attained. Nothing, therefore, can be gained by undercropping, and the charge ought rather to be of moderate cropping. Mr. Williamson then described the qualifications necessary in those elected for the office of judge at flower-shows. He thought those connected with the nursery trade, or gardeners who made any particular branch a specialty, were the most suited for this office. The present system of judging by points he thought defective, in so far that the maximum number of points was always struck too low, which made it almost impossible, in the case of large collections, to arrive at a just result. He submitted a specimen card suited for a competition of twelve varieties of fruit, a copy of which could be handed to the judges before commencing. One column contained the maximum number of points assigned to each species, commencing with a maximum of seven points for a Pine-apple, and gradually decreasing the maximum number as the intrinsic or commercial value of the article decreased, till at Apples and Cherries he allowed a maximum of only two and one respectively. These points being fixed on before commencing to judge, it then only remained for the judges to fill up the blank columns with points proportioned according as the different exhibits approached nearest perfection or the maximum number; then by adding each column it would be found which had the highest number of marks. The paper gave rise to an interesting discussion, and was admitted to be a valuable contribution towards a recognised scheme of judging, whereby the individual and sometimes erratic tastes of judges may be authoritatively guided. Mr. W. Alison, Seaview, exhibited fine specimens of a seedling double Begonia.

RICE FERMENTATION.—In the last issue of *New Commercial Plants and Drugs*, Mr. T. Christy pointed out the practical importance of the study of fermentation, and this has been further proved by some subsequent experiments. We understand it has been discovered that if Rice is reaped shortly before it is actually ripe, and laid in a heap for a time, so that slight fermentation is induced, a delicious flavour is thereby imparted to the grain. Later on we hope to give fuller information on this matter. *Planters' Gazette.*

## INDIAN NOTES.

CHICK HOUSES.—Some notes have lately appeared in your journal under the above heading, and although they contain many assertions which would barely pass unchallenged were they published in India, I do not propose to criticise them generally; but I must take exception to an assertion in the *Gardeners' Chronicle* of June 20 in which the writer of the notes claims to be the originator of the Chick-house, and must protest against the claim. "Chick-houses," better known as "Betel-houses," have been used for ages in India for the cultivation of the Pân leaf (Piper betel, Linn.), and the credit for adopting the principle is due to the late Dr. Anderson, Superintendent of the Royal Botanic Gardens near Calcutta. Dr. Anderson died in 1870, and as the writer of the notes states that it was in the year 1873 he constructed the first chick-house, there can be no question as to who was the first in the field. That my assertion may not stand by itself, I add the following extract from the late Rev. T. C. Firminger's well-known *Manual of Gardening for Bengal and Upper India*, 3d edition, p. 36:—"Some time ago the happy thought occurred to Dr. Anderson that structures somewhat similar to which the natives of Bengal have from time immemorial grown the Pân, or Betel plant, might be employed with advantage in the cultivation of plants that in Nature exist in a climate nearly alike to that in which the Betel does. The attempt was made, and proved a wonderful success." I may add that "Firminger" (as the book is generally called) is no obscure work, but may be seen in almost every home in India. *Bhundari, Dustypore, July* 11.



## CANADA.

OFFICE FOR AGRICULTURE, HALIFAX, NOVA SCOTIA, *July* 24.—I am glad to be able to say that, since writing to you a week ago, we have been enjoying delightful weather, the thermometer not going much below 70° Fahr. in the shade, and usually standing at about 5° higher. We have had frequent genial showers of rain without any wind, and the fruit on the Apple trees, which was beginning to drop on account of the drought, is swelling well; there is every prospect of an excellent sample, and of a fair yield for most sorts, with the exceptions mentioned in previous reports. Strawberries have been very fine and abundant this season, prices unusually low. During the last and present week we have had in the Halifax market a fruit not known in Covent Garden, viz., the "Bake Apple" (Rubus chamæmorus). It grows abundantly in swampy ground at sea level. We have no hills in Nova Scotia as high as those on which it grows in Scotland. *George Lawson, Secretary for Agriculture.*

MANITOBA.—It may be interesting to some of your readers to know a little about the wild fruits of Southern Manitoba, Canada. At the time I write (July 6) the following are the wild fruit prospects:—Plums, two sizes, a light crop. Cherries, two sizes—small red and small black—good crop. Currants (black) fair size, good crop—red, small crop, light. Gooseberries, fair crop. Strawberries, ordinary crop, now ripe. Cranberries, heavy crop. Raspberries, heavy crop. The wild Hops grow in abundance here, and one kind of hardy Azalea; a few Ferns, also a hardy ground Cedar, a trailer, and evergreen. The Tiger Liley grows wild, and is now in its glory. I shall be happy to supply information respecting this fine country. There are good openings for farmers with capital, good farms, and plenty of wild game. I should like a visit from English farmers, and would show them this fine country with pleasure. I am preparing packages of seed of some of our native plants which have been asked for by some correspondents. *James Rooke, Pilot Mound, Southern Manitoba, Canada.*

# Obituary.

MR. W. SEALE.—With regret we announce the death of Mr. William Seale, the respected nurseryman of The Gardens, Wildernesse, Sevenoaks. He had been in failing health for some time, and died on August 6, aged sixty. He will be remembered by many friends in Kent and the adjoining county as figuring in the prize-lists of Dahlias, Gladioli, &c., and also at the London and other shows with table decorations. He was held in great respect by a large circle of friends in the neighbourhood, where he had been a nurseryman all his life.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, AUGUST 12, 1885.

| Month and Day. | Barometer: Mean Reading Reduced to 32° Fahr. | Barometer: Departure from Average of 18 years. | Temperature of the Air: Highest. | Temperature of the Air: Lowest. | Temperature of the Air: Range. | Temperature of the Air: Mean for Day. | Temperature of the Air: Departure of Mean from Average of 30 years. | Dew Point. | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity. Sat = 100 | Wind: Average Direction. | Rainfall. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug. | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 6 | 29.71 | —0.01 | 72.5 | 52.5 | 20.0 | 60.0 | — 1.5 | 54.9 | 83 | E.S.E. | 0.26 |
| 7 | 29.69 | —0.16 | 71.2 | 51.5 | 19.7 | 58.0 | — 3.1 | 53.6 | 83 | S.W. W.S.W. | 0.03 |
| 8 | 29.75 | 0.00 | 71.1 | 52.0 | 19.1 | 59.7 | — 2.3 | 55.0 | 85 | S.W | 0.01 |
| 9 | 29.75 | 0.00 | 73.0 | 54.6 | 19.0 | 61.4 | — 0.7 | 52.8 | 71 | S. S.S.W. | 0.02 |
| 10 | 29.50 | —0.26 | 73.5 | 57.0 | 16.5 | 60.7 | — 1.4 | 52.3 | 73 | S.S.W | 0.00 |
| 11 | 29.03 | —0.16 | 71.1 | 54.1 | 17.1 | 61.4 | — 0.8 | 49.9 | 66 | S.W. | 0.00 |
| 12 | 29.63 | —0.16 | 69.5 | 52.5 | 17.0 | 60.2 | — 2.0 | 51.2 | 72 | S.W. | 0.05 |
| Mean | 29.65 | —0.11 | 71.7 | 53.4 | 18.3 | 60.4 | — 1.7 | 52.8 | 77 | S.W. | 0.36 |

Aug. 6. Fine day; thunderstorm at 6 P.M.; lightning from 10 to 11 P.M.
7. Fine day, thunder heard at 11 A.M., 4 P.M., and 11 P.M.; rainbow at 6 P.M., lightning at night.
8. Fine day and night.
9. Fine day, sun shining occasionally
10. Fine, dull in morning; brighter in afternoon; lightning at night.
11. Fine day, alternately clear and cloudy; very windy.
12. Fine day, bright mostly; very windy; rain from 6 P.M.

LONDON: *Atmospheric Pressure.*—During the week ending August 8, the reading of the barometer at the level of the sea decreased from 30.08 inches at the beginning of the week to 29.91 inches by 5 P.M. on the 4th, increased to 29.98 inches by 5 P.M. on the 5th, decreased to 29.75 inches by 5 P.M. on the 7th, and was 29.96 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.95 inches, being 0.30 inch lower than last week, and 0.02 inch higher than the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 72°.5, on the 6th; on the 3d the highest was 65°. The mean of the seven high day temperatures was 70°.

The lowest temperature was 48°, on the 4th; on the 2d the lowest temperature was 53°.8. The mean of the seven low night temperatures was 51°.9.

The greatest range of temperature in one day was 24°, on the 4th; the smallest, on the 3d, was 11°.6. The mean of the seven daily ranges was 18°.1.

The mean temperatures were—on the 2d, 59°.8; on the 3d, 57°.8; on the 4th, 59°.2; on the 5th, 58°.2; on the 6th, 60°.6; on the 7th, 58°.9; and on the 8th, 59°.7; and these were all below their average by 2°.5, 4°.4, 3°, 3°.9, 1°.5, 3°.1, and 2°.3 respectively.

The mean temperature of the week was 59°.2, being 4°.3 lower than last week, and 3°.0 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 129°, on the 7th. The mean of the seven readings was 120°.4.

The lowest reading of a minimum thermometer placed on the grass was 39°.1, on the 4th. The mean of the seven readings was 44°.1.

*Rain.*—Rain fell on four days to the amount of 0°.53 inch.

ENGLAND: *Temperature.*—During the week ending August 8, the highest temperatures were 78° at Truro, 74° at Cambridge, 72° at Plymouth and Blackheath; the highest at Sunderland was 63°, at Newcastle, 64° at Bristol 67°. The general mean was 69°.6.

The lowest temperatures were 40° at Truro, 42° at Bristol and Sunderland; the lowest at Nottingham 51°, at Newcastle 50°, at Cambridge, 48°.5. The general mean was 45°.7.

The greatest ranges were 38° at Truro, 28°.5 at Plymouth, 26° at Leeds; the least ranges were, 14° at Newcastle, 18°.3 at Nottingham, 20°.6 at Liverpool. The general mean was 23°.

The mean of the seven high day temperatures was highest at Blackheath and Cambridge, 70°, at Truro 68°.7; and was lowest at Sunderland, 59°.8, at Newcastle 60°.1, at Bolton 61°.7. The general mean was 64°.8.

The mean of the seven low night temperatures was highest at Newcastle, 52°.5, at Nottingham and Preston 52°.4; and was lowest at Truro, 46° 9, at Wolverhampton 47°.3, at Bolton 48°.9. The general mean was 50°.8.

The mean daily range was greatest at Truro, 21°.8, at Cambridge 18°.6, at Blackheath 18°.1; and was least at Newcastle, 7°.6, at Sunderland 8°.8, at Sheffield 10°.6. The general mean was 14°.

The mean temperature was highest at Blackheath, 59°.2, at Cambridge 58°.9, at Brighton 58°.1; and was lowest at Wolverhampton and Bolton, 53°.5, at Sunderland 53°.7. The general mean was 56°.0.

*Rain.*—The largest falls were 3.17 inches at Newcastle, 2.81 inches at Sunderland, 2.02 inches at Truro; the smallest falls were 0.21 inch at Brighton and Preston, at Bradford 0.26 inch. The general mean fall was 1.06 inch.

SCOTLAND: *Temperature.*—During the week ending August 8, the highest temperature was 76°, at Greenock; at Leith the highest temperature was 63°.8. The general mean was 69°.4

The lowest temperature in the week was 39°, at Perth; at Leith the lowest temperature was 48°.6. The general mean was 44°.8.

The mean temperature was highest at Paisley, 58°.8; at Edinburgh, 55°.1. The general mean was 56°.4.

*Rain.*—The largest fall was 1.53 inch, at Leith, the smallest fall was 0.47 inch, at Aberdeen. The general mean fall was 1.02 inch.

JAMES GLAISHER F.R.S.

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SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Aug 10, 1885; issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been very cloudy or dull in all parts of the kingdom, with rather heavy falls of rain in most places, accompanied in some localities by thunder and lightning.

The *temperature* has been below the mean in all districts, the deficit varying from 1° in "Scotland, N.," "England, N.E.," "England, S.," and "Scotland, W.," to 3 in Ireland and over central and north-western England, and to 4° in "England, S.W." The maxima, which were generally registered on the 10th, varied between 63° and 69° in Scotland, between 69° and 75° in Ireland, and from 71° to 77° in most of the English districts. The minima were recorded either on the 6th or 7th, when the thermometer fell to 37° in "England, S." (at Marlborough), to 40° in "England, S.W.," and to between 41° and 50° elsewhere.

The *Rainfall* has been rather less than the mean in "England, E." and "England, S.," but more in all other districts, the excess over north and central England, in the south of Ireland and west of Scotland being considerable.

*Bright Sunshine* has been less prevalent than for some time past, the percentages of the possible amount of duration ranging from 15 to 25 in the more northerly parts of the Kingdom to 37 or 38 in the S.W. and south of England, and to 56 in the "Channel Islands."

*Depressions Observed.*—At the commencement of the period a small shallow depression was moving in a south-west direction over the St. George's Channel, finally disappearing to the southward of Ireland. This was succeeded by numerous small and very shallow depressions; which, after forming a large, low-pressure system over England, moved slowly away to the eastward. During the prevalence of these conditions north-easterly winds were general in the north and west, and light airs—chiefly from the westward—in the south. By 8 A.M. on the 9th the distribution had undergone a decided change, the barometer being highest over France, while deep depressions passed along our west and north-west coasts. The wind became south-westerly and south generally, and on the 9th and 10th it blew a gale in the west and north.

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## Answers to Correspondents.

ARAUCARIA DOING BADLY: *P. B. T.* As this tree will in much from a wet subsoil, except in hilly well drained sites it is always best to plant it on a hillock of, say, 12 feet in diameter at the base, and if the soil is at all stiff to mix up massive lumps of rag or sandstone. If your soil is adhesive and the bed which contains the roots would be likely to hold together with suitable precautions, it would be advisable in this month or September to raise it 2 feet, and underpack it with the fresh compost. It would then stand on a mound, which could be readily made of an unobjectionable form.

BEGONIA: *C. Fieldes.* A very fine yellow.

BOOK ON PROPAGATING CONIFERS BY GRAFTING, AND OTHER TREES BY SELF-CUTTINGS: *G. S. Smith.* For guiding principles in the art, and practical description of the various methods, times, and seasons, *The Propagation and Improvement of Cultivated Plants*, by Mr. F. W. Burbidge, published by Blackwood & Sons, Edinburgh and London, would suit your purpose.

CARNATIONS: *S. H.* You would do well to send them to some nurseryman who grows the plants. We do not make any charge for naming plants.

EUCALYPTI: *A. N.* Quite impossible to name them from your specimens.

FRANCISCEA AND PLUMBAGO ROSEA: *Mrs. Prot.* The first-named must be potted in a mixture of fibrous peat and leaf-mould, well rotted, in equal proportion, about one-fourth of the bulk of the mass of sifted loam, and a plentiful quantity of silver-sand being added. Plants must be shifted immediately after flowering, and be placed in a stove, pit, or dung-bed frame, where the temperature ranges from 60° to 70°, and when well-rooted they must be liberally supplied with water. They can remain in this warmth till the autumn months, when the flower-buds will begin to appear, at which time syringing must be discontinued, and the plants removed to an intermediate-house. Cuttings strike easily under a bell-glass, in bottom-heat. Plumbago rosea grows well in a mixture of fibrous peat and leaf-mould, using a liberal admixture of silver-sand. The old plants may be shaken out in February or March, dividing the roots and repotting them five or six in a 32-sized pot. The pots must be well drained, as the plant is greedy in the matter of water when growing freely. Bottom-heat not essential, but the plants do very well in a Pine or forcing-pit. They require to be grown near the glass, or spindly growth is made, and the lower leaves are apt to fall, which disfigures the plants. Sufficient shading must be used to prevent scorching, but enough must be allowed to fall on them to thoroughly mature the growth, or but little flower can be expected in the autumn and winter months.

FUNGUS ON ONIONS: *W. H. B.* The destruction of the Onions is brought about by a fungus allied to the fungus of the Potato disease, named Peronospora Schleideniana. As in your case other moulds, or mildews, soon fix on the places which have been injured by the Peronospora. You are quite right in supposing that sowing too often in the same ground aids the disease, as the fungus produces resting-spores, which were first illustrated by Mr. W. G. Smith. These resting-spores hibernate in the ground during the winter, and germinate and attack the young Onions in the following summer.

FUNGUS UNDER PALM: *T. S. T.* The fungus under Palm is a kind of semi-subterranean Puffball, named Scleroderma vulgare. Yours is the smooth-skinned variety. It is common, and sometimes mistaken for the Truffle. Not edible. *W. G. S.*

GOOSEBERRIES: *A. Z.* Whitesmith. It may be obtained of almost any nurseryman.

GRAPES WITH MEALY-BUG, &c., AND PEACH STONES SPLITTING: *T. H.* The Grapes are of a fine size, but deficient in bloom and colour. You are perhaps cropping too heavily, and ventilating insufficiently. The mealy-bug on them, which you ought to strain every nerve to eradicate in the winter, may be washed off by applying pure water by means of a hose with a nozzle. In the state they are now you need not be squeamish. You can cut bunches intended for use in a day or two, and hold them under a tap of running water, and thus rid them of bug, hanging them up in a shady airy place till dry. The Peaches are getting too much water at the roots. It is almost too late to expect much benefit from a dryer treatment now, the damage being beyond remedy as regards the ripening fruit.

GUMMING OF ARAUCARIA IMBRICATA: *Mrs. Crowley.* In reply to the inquiry as to the probable cause of gum exuding from the main stem of Araucaria imbricata, and also whether a styptic would be likely to stop it, I may say that, except under very favourable circumstances, this Araucaria is rarely seen at its best in this country; in a great many soils it grows fairly for ten, twenty, or even thirty years, when indications of distress not unfrequently exhibit themselves, in impaired vigour, as described above, exuding gum on the main stem, and portions dying off. This may be occasioned by a variety of causes—amongst others by exposure to a very low temperature, which does not altogether kill, but often seriously injures and induces exudation of gum. In this case the gumming process has been going on for more than two years, and as the tree is still comparatively vigorous the chances are it may recover, if this has been the cause. Another common cause of Araucarias becoming unhealthy is where the roots have reached a cold wet subsoil, it may be, at a very considerable depth. As the Araucaria will only thrive in an open porous subsoil the remedy is deep draining, to remove the stagnant water. They delight in a deep, rich, hazely loam, on a dry subsoil, and thrive well in districts where considerable rainfall occurs. Top-dressing might improve the vigour of the tree. No styptic is likely to be of the slightest use in stopping the exudation of gum. *A. Fowler, Castle Kennedy, Wigtownshire.*

MORMODES: *B.* From the Greek *mormô*, signifying a bogey, or some object of idle fear; and *eidos*, likeness as the latter word is neuter, the neuter form *um* has; been used.

NAMES OF PLANTS: *W. Scott.* 1, Funkia lancifolia; 2, Betonica officinalis; 3, Veronica longifolia; 4, Stachys.—*R. G. B.* Silaus pratensis.—*J. J. W.* Narthecium ossifragum. — *G. W. B.* 1, Spiræa ariæfolia; 2, Thalictrum flavum; 3, Hemerocallis flava; 4, Stenactis speciosa; 5, Bocconia cordata; 6, Veronica longifolia; 7, V. longifolia var.—*E. J. J.* Achillæa ptarmica, double variety: a very old plant.—*F. P.* Spiræa venusta.—*J. Oscar.* Lysimachia nummularia. —*T. Denny.* Spiræa ariæfolia, Platycodon grandiflorum, the others too imperfect to name.—*C. M. Owen.* Azara dentata, Lonicera japonica, Campanula Trachelium, and C. olympica.—*H. Reeves.* Mutisia decurrens, Tritonia Pottsii.—*W. T. Catleigh.* Cuscuta europæa.—*Harden & Co.* Chicory, Lichorium intybus.—*Z.* 1, Juncus bufonius; 2, Aira cæspitosa; 3, Agrostis vulgaris; 4, Melilotus alba; 5, Hieracium prenanthoides; 6, H. subaudum.—*J. B. M.* Melilotus officinalis. — *J. Turton.* Probably Brassia Keitiana. — *W. H. S.* Dipladenia amabilis.—*G. Greig.* Cattleya gigas, a singular mottled variety, whether constant or not remains to be seen.—*A. C.* Stanhopea insignis.

ODONTOGLOSSUMS DOING BADLY: *H. H.* The plants are probably grown in a too high and moist temperature; the ventilation is also deficient, and shading may not have been carefully attended to.

ONCIDIUM LANCIANUM: *H. M. H.* Yes; a good variety.

PICEA PUNGENS, &C.: *A. C.* There is a P. pungens, and there is a P. Engelmanni, and there are glaucous varieties of both. It is very difficult to distinguish them from small scraps. What you call pungens is, we believe, Engelmanni; what you name Menziezii glauca is, we believe, Engelmanni; and your Engelmanni glauca is correctly named. From this you will see that you have not the true pungens at all. The variety pungens glauca, better known as Parryana glauca, is far the best when really good, but it is often confounded with Engelmanni glauca. In the case of seeds from the same cone the diversities are great, so that it is no wonder there is confusion. The best way is to go to a nursery and pick the best, irrespective of the name.

PURPLE CARNATION: *W. C.* The flower sent must be reckoned a very good one of its class; it is full of much substance, and the colour is uncommon. That you should have raised it from the white Susan Askey is also remarkable.

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## CATALOGUES RECEIVED.

WM. CUTBUSH & SON, Highgate, London—Hyacinths, Tulips, and other Bulbous Roots.

DAMMANN & CO., Naples — New Flowers, Fruits, and Vegetables.

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COMMUNICATIONS RECEIVED.—W. Cribb.—W. L.—H. R. N. —J. S.—J. R.—R. M.—E. P., Ghent.—C. H.—J. Picard & Co.—J. George (received with thanks).—J. D.—T. M.—Dr. Bull.—J. C. B. G. R. J.—C. J.—M. D.—J. L. & Co.

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# Markets.

## *COVENT GARDEN, August 13.*

HEAVY consignments still to hand, with business quiet. *James Webber, Wholesale Apple Market.*

| VEGETABLES | AVERAGE RETAIL PRICES. | | |
|---|---|---|---|
| | s. d. | s. d. | |
| Artichokes, Globe, per dozen | .. | 3 0 | .. |
| Beans, Eng., per lb. | 0 | 4 | .. |
| Beet, per dozen | .. | 1 0 | .. |
| Cabbages, per dozen | 1 | 6 | 2 0 |
| Carrots, per bunch | .. | 0 | 6 .. |
| Cauliflowers, English, spring, per doz | 2 | 0 | 4 0 |
| Celery, per bundle | 1 | 6 | 2 6 |
| Cucumbers, each | .. | 0 | 6 1 0 |
| Endive, per dozen | .. | 2 | 0 .. |
| Garlic, per lb. | .. | 0 | 6 .. |
| Herbs, per bunch | .. | 0 | 2 0 4 |
| Horse Radish, bun. | 3 | 0 | 4 0 |
| Lettuces, Cab., doz. | 1 | 6 | .. |
| — English Cos, doz. | 1 | 6 | .. |
| Mint, green, bunch | .. | 0 | 4 |
| Mushrooms, per basket | .. | .. | 1 6 1 9 |
| Onions, per bushel | .. | 6 | 0 .. |
| — Spring, per bun. | 0 | 6 | .. |
| Parsley, per bunch | .. | 0 | 4 .. |
| Peas, per quart | .. | 1 | 0 1 6 |
| Radishes, per dozen | 1 | 0 | 2 0 |
| Small salading, per punnet | .. | .. | 0 4 .. |
| Spinach, per bushel | 4 | 0 | .. |
| Tomatos, per lb. | .. | 0 | 6 0 9 |
| Turnips, new, bunch | 0 | 6 | .. |
| Vegetable Marrows, each | .. | .. | 0 3 .. |

POTATOS.—New Potatos are coming very small, and prices range from £4 to £7 per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Apples, per ½-sieve | 1 0- 3 0 | Kent Filberts, 100 lb. | 30 0- .. |
| Cherries, ½-sieve | .. 4 0-10 0 | Lemons, per case | ..15 0-30 0 |
| Currants, red, ½-sv. | 3 0- 3 6 | Melons, each | .. 1 0- 1 6 |
| black, ½-sieve.. | 4 6- 4 9 | Peaches, per doz. | .. 2 0 8 0 |
| Figs, per dozen | .. 2 0- .. | Pine-apples, Eng. lb. | 2 0- 3 0 |
| Gooseberries, ½-sieve | 2 0- 2 3 | — St. Michael, each | 2 0- 5 0 |
| Grapes, per lb. | .. 0 9- 2 0 | Plums, ½ sieve | .. 2 0- 4 6 |

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0-18 0 | Foliage Plants, various, each | .. 2 0-10 0 |
| Arbor-vitæ (golden), per dozen | .. 6 0-18 0 | Fuchsias, per dozen | 4 0- 9 0 |
| — (common), dozen | 6 0-12 0 | Hydrangeas, dozen | 8 0-24 0 |
| Begonias, per dozen | 4 0-12 0 | Lilium auratum, per dozen | ..15 0-24 0 |
| Bouvardia, dozen | .. 9 0-18 0 | — longiflorum, doz. | 9 0-15 0 |
| Calceolarias, doz. | .. 4 0- 6 0 | Lobelia, per doz. | .. 3 0- 6 0 |
| Carnations, 12 pots | 6 0-12 0 | Marguerite Daisy, per dozen | .. 8 0-12 0 |
| Cyperus, per dozen | 4 0-12 0 | Musk, per dozen | .. 2 0- 4 0 |
| Dracæna terminalis, per dozen | ..30 0-60 0 | Myrtles, per dozen | 6 0-12 0 |
| — viridis, per doz. | 12 0-24 0 | Palms in variety, each | .. 2 6-21 0 |
| Euonymus, in var., per dozen | .. 6 0-18 0 | Pelargoniums, per dozen | .. 6 0-18 0 |
| Evergreens, in var., per dozen | .. 6 0-24 0 | — scarlet, dozen | .. 3 0- 9 0 |
| Ficus elastica, each | 1 6- 7 0 | Rhodanthe, per doz. | 6 0- 8 0 |
| Ferns, in var., dozen | 4 0-18 0 | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Abutilon, 12 bunches | 2 0- 4 0 | Myosotis, 12 bun. | .. 2 0- 4 0 |
| Arum Lilies, 12 blms. | 3 0- 6 0 | Pelargoniums, per 12 trusses | .. 0 6- 1 0 |
| Bouvardias, per bun. | 0 6- 1 0 | — scarlet, 12 trusses | 0 4- 0 6 |
| Carnations, 12 bun. | 2 0- 4 0 | Picotees, 12 bun. | .. 2 0- 4 0 |
| 12 blooms | .. 1 0- 2 0 | Pinks, var., 12 bun. | 1 0- 4 0 |
| Cornflower, 12 bun. | 2 0- 4 0 | Primula, double, bun. | 0 9- 1 0 |
| Eucharis, per dozen | 3 0- 6 0 | Rhodanthe, 12 bun. | 0 6- .. 0 |
| Gardenias, 12 blooms | 3 0- 5 0 | Roses (indoor), doz. | 1 0- 3 0 |
| Lapageria, white, 12 blooms | .. 2 0- 3 0 | — coloured, dozen | 2 0- 4 0 |
| — red, 12 blooms | .. 1 0- 2 0 | — per doz. bunches | 2 0- 6 0 |
| Lavender, 12 bunch. | 4 0- 6 0 | Stephanotis, 12 spr. | 2 6- 4 0 |
| Lilium longiflorum, 12 blooms | .. 2 6- 5 0 | Sweet Peas, 12 bun. | 2 0- 4 0 |
| Marguerites, 12 bun. | 3 0- 6 0 | Sweet Sultan, per 12 bunches | .. 1 0- 1 6 |
| Mignonette, 12 bun. | 1 6- 3 0 | Tropæolum, 12 bun. | 1 0- 1 6 |

## SEEDS.

LONDON: *Aug.* 12.—In consequence of the recent rains there has, during the last few days, been an improved inquiry for those descriptions of seeds needed for present sowing. White Mustard seed, in particular, has been in active request, at a substantial advance in values. Trifolium, also, is somewhat firmer, and meets a fair sale. The supplies for the moment are not over-abundant. Essex Rape seed continues exceedingly cheap. New winter Tares are coming forward at very moderate rates. For sowing Rye the inquiry is small. English Italian Rye-grass opens very cheaply. There is nothing yet doing in Clover seeds. Canary and Hemp seed are without quotable variation. *John Shaw & Son Seed Merchants*, 37, *Mark Lane, London, E.C*

## CORN.

At Mark Lane on Monday there was no animation in the trade, and but little, if any, change in prices as compared with the previous Friday. The broken weather and occasional rain are against the condition of the English supplies. Flour had a hardening tendency; passing transactions were, however, upon a very moderate scale. The trade in Barley, both English and foreign, was slow. With increased arrivals Beans and Peas were 6*d*. lower. Maize was firm, flat corn more especially. Oats were quiet, and inferior qualities about 3*d*. lower. —On Wednesday there was not sufficient doing in Wheat to influence quotations, there being very little disposition to buy, and no pressure to sell. Flour remained quiet, but firm; Barley was dull; Beans, Peas, and Oats were a slow sale at late value; and Maize was firm, but quiet.—Average prices of corn for the week ending August 8:—Wheat, 33*s*. 0*d*.; Barley, 27*s*. 11*d*.; Oats, 23*s*. 6*d*. For the corresponding period last year:—Wheat, 37*s*. 6*d*.; Barley, 23*s*. 3*d*.; Oats, 23*s*. 1*d*.

## HAY.

Tuesday's Whitechapel Market report states that supplies were rather large, with somewhat dull trade. Quotations:—Clover, prime, 80*s*. to 107*s*.; prime second cut, 85*s*. to 107*s*.; inferior, 60*s*. to 75*s*.; new clover, 80*s*. to 95*s*.; hay, prime, 70*s*. to 98*s*.; inferior, 36*s*. to 60*s*.; new hay, 65*s*. to 90*s*.; and straw, 28*s*. to 38*s*. per load.—On Thursday there was a rather large supply on sale. The trade was dull at Tuesday's rates.

## POTATOS.

The Borough Market report states that moderate supplies are to hand, and meet a quiet demand. Quotations:—Regents, 120*s*. to 140*s*.; Magnum Bonums, 120*s*. to 140*s*.; Early Roses, 110*s*. to 130*s*.; Shaws, 95*s*. to 110*s*.; kidneys, 130*s*. to 140*s*. per ton.—The imports into London last week consisted of 20 bags from Boulogne, 351 boxes Barfleur, 37 packages Rotterdam, 103 bags 33 barrels from Hamburg.

**Government Stock.**—Consols closed on Monday and Tuesday at 99⅜ for both delivery and the account. The figures of Wednesday and Thursday were 99⅜ to 99⅝ for both transactions.


**12-oz. Sample Packets, free by post, 12 Stamps.**

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s*. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s*. per ton per Truck. Sample Bag, 5*s*. ; 5 Bags, 22*s*. 6*d*. ; 10 Bags, 45*s*. Bags included. Fresh SPHAGNUM, 10*s*. 6*d*. per Bag. SILVER SAND, Coarse or Fine, 55*s*. per Truck of 4 Tons. WALKER AND CO., Farnborough Station, Hants.

A GREAT SUCCESS.

JEYES'

"GARDENER'S FRIEND."

One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can,

**Effectually Removes all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.**

Price, 3*s*. 6*d*. per Gallon, including drum; 40-gallon Casks, £4 10*s*. Carriage paid.

**JEYES' SANITARY COMPOUNDS CO. (Limited),** 43, Cannon Street, London, E.C.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s*., 3*s*., and 10*s*. 6*d*.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d*. and 1*s*., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

TOBACCO CLOTH and PAPER, finest and most effective, 14 lb. for 9*s*.; 28 lb., 18*s*.; cwt. 70*s*. Special quotations for the Trade. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, E.

SUPERIOR VARNISH.




This Varnish is the cheapest and best covering which can be used for all outdoor purposes, and has many advantages over oil paint. It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost.

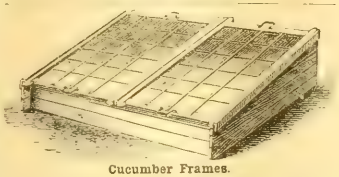
*PRICE* in Casks, containing not less than 9 gallons, delivered free at most railway stations.—Best prepared Jet or Black, 1*s*. 6*d*. per gallon.

Catalogues of all kinds of Iron and Wire Fencing, Gates, Poultry Fencing, &c., free on application.

BAYLISS, JONES, & BAYLISS,

**WOLVERHAMPTON,**

**and 133 and 141, Cannon Street, London, E.C.**



Cucumber Frames.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices, delivered to any station in England:—

| | | £ s. d. |
|---|---|---|
| 2-light frame, 8 feet by 6 feet | Packing | 3 10 0 |
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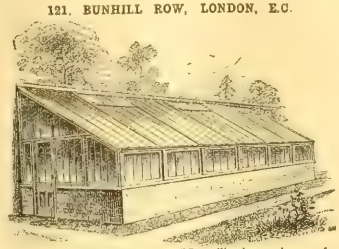
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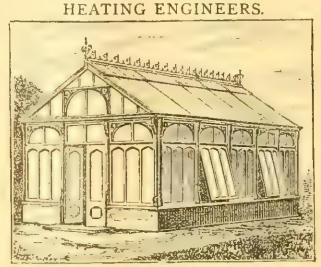


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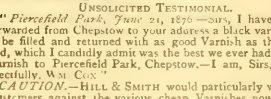
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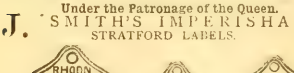
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THE

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*Illustrations by W. H. FITCH, F.L.S., W. G. SMITH, F.L.S., W. J. WELCH, and Others.*

# GARDENERS' CHRONICLE FORM OF SUBSCRIPTION

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1885.

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**Eastbourne—Dissolution of Partnership**

UNRESERVED CLEARANCE SALE of the whole of the well-grown STOCK of STOVE and GREENHOUSE PLANTS by order of Messrs. G. T. Scott & Co., who are dissolving partnership.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, on WEDNESDAY, September 2, at 12 o'Clock precisely (in one lot), without reserve, the whole of the magnificent STOCK, comprising PALMS of sorts, amongst which are fine Specimens; 1500 MADEIRA PALMS, in 48 and 32 pots, well furnished; 1000 AZALEAS, 1 to 2 feet in 42 pots, 250 very fine plants; ARAUCARIAS, 1 to 2 feet in 42 pots; EUCHARIS, Specimen White AZALEAS and CAMELLIAS 25,000 dwarf EVONYMUS, and quantities of other stock too numerous to mention, lotted to suit the Trade and large Buyers.

On view one week prior to Sale. Catalogues had on the Premises, of the Auctioneers, Land Valuers, 67 and 68, Cheapside, London, E.C.

**Whetstone, Middlesex.**

Nine miles from London, and a few minutes' walk from Totteridge Railway Station.

IMPORTANT TO MARKET GARDENERS, LAND SPECULATORS, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Davis, to SELL by AUCTION, at the Mart, 67 and 68, Cheapside, E.C., on THURSDAY, September 3, at 2 o'Clock precisely in Three Lots:—

Lot 1, comprising the valuable and extensive FREEHOLD MARKET GARDEN, most pleasantly situate in the New Lodge Nurseries, Whetstone, N., containing an area of about 4 acres, 3 roods, 39 perches, and having a superior Dwelling-house, containing 4 bedrooms, 2 sitting rooms, and kitchen, with the necessary Offices, and a Range of Glass for growing plants and producing the greatest perfection; the whole on the main road and in a position where are produced the most successful market gardens in the neighbourhood, three Cottages, Stabling, and numerous other Trade Erections. This Lot will be sold subject to the Covenants, together with the Goodwill of the long established Business.

Lot 2 and 3 will include Two valuable Plots of eligible FREEHOLD BUILDING LAND, containing a total area of about 1 acre, 2 roods, and 19 perches, fronting 500 feet to Barnet Road, presenting a desirable investment for speculation or future building Plots.

The Auctioneers would wish to call the special attention of Market Gardeners to Lot 1. The property is in complete working order, and it is indeed seldom that such an opportunity presents itself of securing a business going concern under similarly favourable circumstances. A large portion of the Purchase Money may remain on Mortgage if desired.

May be viewed. Descriptive Particulars, with Plans, may be had on the premises; of Messrs. BERRY, BINNS, and LINCOLN, Solicitors, 27, Chancery Lane, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, E.C.

**Preliminary Notice.—Great Horticultural Sale Week.**

Annual TRADE SALE of Winter Flowering Heaths.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have arranged the ANNUAL TRADE SALES of WINTER FLOWERING HEATHS, GREENHOUSE PLANTS, &c., as follows:—

TUESDAY, September 15, at the BURNT ASH LANE NURSERIES, LEE, S.E., by order of Messrs. B. Male & Sons.

WEDNESDAY, September 16, at the LEA BRIDGE NURSERIES, LEYTON, by order of Mr. John Fraser.

THURSDAY, September 17, at the BRUNSWICK NURSERY, TOTTENHAM, by order of Mr. John Maller.

FRIDAY, September 18, at the LONGLANDS NURSERY, SIDCUP, by order of Messrs. Gregory & Evans.

Fuller advertisements will appear next week.

Auction and Estate Offices, 67 and 68, Cheapside, E.C.

**Luddemannia?**

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, a fine plant in full flower of beautiful LUDDEMANNIA, with two spikes of twenty-four blooms, from Mr. F. Sander.

**Dutch Flower Roots**

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, fine-class BULBS, received direct from the most Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finish generally at half-past 4 o'Clock.

Catalogues sent on application.

**Thursday Next—(Sale No. 6956)**

ESTABLISHED AND IMPORTED ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 27, at half-past 12 o'Clock precisely, about 150 lots of good ESTABLISHED ORCHIDS, including fine plants of Cattleya gigas, C. Mossiæ, C. Trianæ, Lælia elegans, Vanda coerulea, Dendrobium thyrsiflorum, Oncidium Alexandræ, O. pulchellum majus, Phaius tuberculosus, amabilis &c. Also IMPORTED ORCHIDS in variety, a consignment of Saccolabium flava, rubra and variolaris; and Dionæa Muscipula, from America; Tree and other FERNS from New Zealand, &c.

On view morning of Sale, and Catalogues had.

**The Valuable Collection of Orchids,**

Formed by G. Heriot, Esq.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 3, instead of the date previously announced, at half-past 12 o'Clock precisely, the valuable COLLECTION of ORCHIDS formed by G. Heriot, Esq., of Cholmeley Park, Highgate, who is giving up their culture. Amongst other good things will be found a fine specimen of Vanda Cathcarti, V. coerulea, fine variety; Cœlogyne Lemoniana, C. cristata, Trichoglottis fasciata, very rare; Dendrobium cleistostachum, Angræcum sesquipedale, A. eburneum Dendrobes, Cattleyas, Odontoglossum Alexandræ, &c.; also a magnificent COLLECTION of PHALÆNOPSIS in variety, mostly specially imported by Mr. Heriot, &c.

On view morning of Sale and Catalogues had.

**St. Martin's, Chichester.**

TO GRAPE GROWERS, FRUITERERS, CAPITALISTS, AND OTHERS.

Sale of a FREEHOLD GARDEN, known as The Graperies.

MESSRS. WYATT AND SON will SELL by AUCTION, on THURSDAY, September 17 at the Dolphin Hotel, Chichester, at 3 o'Clock precisely, by direction of Mr. Isaiah Baker, who is retiring from business, a very valuable and productive FREEHOLD GARDEN, known as THE GRAPERIES, ST. MARTIN'S, CHICHESTER, with eight Glasshouses thereon in capital condition, heated with flues and hot-water pipes having a total length of 548 feet, and an area of 5,000 feet of glass. Four of the largest houses are Vines, stocked with the choicest Vines for market produce and in full bearing; the other four are used as Strawberry and Tomato houses. The garden is planted with Plum, Pear, and Mulberry trees, and well stocked with fruit bushes. There is also a plentiful supply of water from a pump in the garden, three large water tanks, and a Tool and Fowl-house thereon. The above garden is situated in the centre of the City of Chichester, with a carriage entrance from Little London. It has been for many years in the possession of Mr. Isaiah Baker, who has done a lucrative trade with the London market and trade customers at Southsea, the Isle of Wight, Salisbury, and other places.

Possession will be given at Christmas next, with the exception of the vineries where the grapes are not then cut, with right of access thereto. One half of the purchase money may remain on mortgage at 4½ per cent.

The garden may be viewed on application to Mr. ISAIAH BAKER, The Graperies, St. Martin's, Chichester; and particulars, with conditions of sale, obtained of Messrs. RAPER AND RELAND, Solicitors, West Street, Chichester; and of Messrs. WYATT AND SON, Estate Agents, Valuers, and Auctioneers, East Street, Chichester, and Auction Mart, Havant.

**Norton Hall, Daventry, Northamptonshire.**

3 Miles from Weedon, 2 Miles from Long Buckby Stations on London and North-Western Railway.

FOR SALE, in consequence of the death of the Head Gardener, Mr. John Day, fine, and in some cases very grand Specimens of the following plants, at very moderate prices:—

FERNS—Adiantum cuneiforme, Davallia Mooreana, Gleichenia Speluncæ, Gymnogramma, Goniophlebium subauriculatum, Lomaria gibba, Nephrolepis cordifolia, Pteris serrulata, P. tremula, P. tricolor, P. Wimsetti, Todea superba, T. pellucida, T. hymenophylloides, Woodwardia radicans, Asplenium nidus-avis, Aspidium falcatum, A. Lonchitis, A. angulare, A. capense, A. coriaceum, A. aculeatum, A. Filix-mas, A. Filix-mas cristatum, A. Filix-mas grandiceps, A. Filix-mas Wollastoni, A. Filix-mas Linearia, A. Filix-mas Barnesi, A. Filix-mas Cristatum, A. Filix-mas Polydactylum, A. Filix-mas

BULBOUS FLOWER ROOTS
A VERY EXTENSIVE & VERY SUPERIOR STOCK
EMBRACING
HYACINTHS LILIES CROCUS TULIPS &c
FREE BY POST OR RAIL
PRICE CATALOGUE POST FREE.
JAMES DICKSON & SONS
"NEWTON" NURSERIES 108 EASTGATE ST. CHESTER

WHOLESALE BULB CATALOGUE.
Contains List of all varieties of English, Dutch, and French grown Bulbs, including the following :—
ANEMONES, all the best varieties.
CHIONODOXA LUCILIAE, charming blue spring flower.
CROCUS, all named varieties and mixed.
FREESIA REFRACTA ALBA, beautiful white sweet-scented
HELLEBORUS NIGER, Christmas Rose. [Cape bulb.
HYACINTHS, all colours, named, for pot, glasses, or bedding
IRIS, all the best varieties
IXIAS, handsome showy spring flowers.
LILIES, all the leading named sorts.
NARCISS, Polyanthus varieties.
NARCISS and DAFFODILS, in all sorts varieties.
SCILLAS and SNOWDROPS, including the newest varieties
TULIPS, Double and Single, in great variety. [of the latter.
WINTER ACONITES, bright yellow, the first bulb to bloom after Christmas.
May be had on application. Please compare our prices before sending your orders abroad.—WATKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street Strand, W.C.

CLEMATIS
JACKMANNI ALBA (Noble).
"The hardy flowering plant of the season." "Certificated unanimously."
(See *Gardeners' Chronicle*, July 28, 1883.)
*Now being sent out at 7s. 6d. and 10s. 6d. each. Cash or reference.*
CHARLES NOBLE, BAGSHOT.

FERNS A SPECIALTY.
THE LARGEST STOCK IN THE TRADE.
ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1s.
SMALLER CATALOGUE, of over 1200 species and varieties, free on application.
Special Descriptive "LIST OF NEW, RARE, AND CHOICE FERNS," free.
Descriptive "LIST OF HARDY NORTH AMERICAN FERNS," free.
W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.

The Grand New Narcissus,
"SIR WATKIN."
5s. each, 21s. per dozen, 16os. per 100.
The largest and finest known. First class Certificate Royal Horticultural Society.
Descriptive CATALOGUE post-free. Plant at once.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

AUTUMN ANNOUNCEMENT
WE BEG TO ANNOUNCE that our AUTUMN CATALOGUE is now being distributed; as usual it is the most complete record of only the best and most serviceable flowers, both for the Garden and Greenhouse; in fact it is a Guide how to have an abundance of bloom all the winter, and at the very lowest price to be well served. Should it fail to reach our Patrons and Friends, please notify and another shall be sent Post-free
"Capt. TYLDEN PATTENSON,
"*Dashmonden, Staplehurst, August* 18, 1885.
"Mrs. T. PATTENSON and myself were extremely pleased with our visit to your 'Home of Flowers' yesterday. Such a truly splendid sight as the various Begonia and Pelargonium houses presented we never before witnessed, indicating as they did the highest talent and skill in their management."
H. CANNELL & SONS,
THE HOME FOR FLOWERS

BULBS
200,000 DIRECT FROM HOLLAND.
Very Cheap LIST, with interesting Pamphlet on Growing Bulbs, free on application. HYACINTHS, from 7s. 6d. 100; TULIPS, from 2s. 100; CROCUS, from 1s. 100; NARCISSUS, from 1s. 100. Liberal Discount to Large Buyers.
ROBERT SYDENHAM, Bristol Road, Birmingham.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s.
BARR AND SON, King Street, Covent Garden, W.C.

Roman Hyacinths Lilium candidum, Snowdrops.
HURST AND SON have a very fine and healthy stock of the above, and will be happy to quote Lowest Prices to the Trade on application.
Their Stock of DUTCH BULBS has now arrived in most excellent condition, HYACINTHS particularly being very fine. A Personal Inspection is cordially invited. Prices extremely moderate.
CATALOGUES have been sent to all Customers, any who have not received a copy will please let them know and another shall be sent
Seed Warehouse, 152, Houndsditch London, E.

The Success of the Rose Season.
PAUL AND SON'S
Three New Cheshunt Roses.
H.P. MADAME NORMAN NERUDA—The perfection of a show Rose. First-class Certificate Royal Horticultural Society, July 14.
H.P. LONGFELLOW—The new Moss Rose, vigorous, violet.
Charles Lefebvre.
H.P. PRIDE of REIGATE—The finest striped real autumnal flowering Rose. First-class Certificate Royal Horticultural Society, July 14.
The Set of the Three, good Plants in pots, for budding from; or strong good Plants in November; 21s. the Set. Order at once.
The "Old" Nurseries, Cheshunt, Herts.

PAMPAS PLUMES, FLOWER of GYNERIUM ARGENTEUM, crop 1885, to be delivered next autumn, as soon as they shall arrive from California, at 100s. per case of 1000 Plumes, 18 to 24 inches in length; at 12s. per case of 800 Plumes, 24 to 30 inches in length. Free on board of a steamer in the port of New York, U.S. Terms cash. Apply to
Messrs. LEVAVASSEUR AND SON, Nurserymen, Ussy, Calvados, France.

Flowers at Christmas.
SEE
SUTTON'S
BULB CATALOGUE,
READY IN A FEW DAYS,
*Gratis and Post-free on application.*
Sutton & Sons
Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,
READING.

To Nurserymen, Seedsmen, and Florists.
DUTCH BULBS—Season 1885.
WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS at 3, Victoria Warehouses, Macleod Street, Aldgate E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, ROUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited
Trade CATALOGUES forwarded on application.
The ANNUAL SALE by AUCTION will be held on TUESDAY, September 15.
Burnt Ash Lane Nurseries, Lee, S.E.

H. B. MAY offers the following in strong, clean, healthy Plants, in the best possible condition. An inspection invited.
TREE CARNATIONS, in 48's and 60's.
TEA ROSES, in 48's
" very large, from 4 to 6 feet.
CLEMATIS indivisa lobata
FERNS, large and small, in great variety.
BOUVARDIAS, set with bloom.
" Lemoine's new double.
Dyson's Lane Nursery, Upper Edmonton, Silver Street Station (G.E.R.).

FOR SALE,
TWO SPECIMEN GLEICHENIAS, vars. "Mendelii" and "rupestris."
5 to 6 feet high, 4½ to 5 feet through, well furnished and healthy.
Apply to
W. SMITH & SON, Aberdeen, N.B.

COCOA-NUT FIBRE REFUSE.—Best and fresh only, 1s. per bag; 15 bags, 12s.; 30 bags, 22s., sent to all parts; trucks, 23s., free to Rail. PEAT and LOAM.—A. FOULON, 32, St. Mary Axe, London, E.C.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each
COARSE SILVER SAND, 1s 9d. per bushel; 15s. per half ton, 26s. per ton in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s per bushel.
SPHAGNUM MOSS, 2s. 6d. per sack
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

12-oz. Sample Packets, free by post, 12 Stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., 4s 6d. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bags, 2s.; 5 Bags, 9s. 6d.; 10 Bags, 15s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag. SILVER SAND. Coarse or Fine, 5s. per Truck of 4 Tons. WALKER AND CO., Farnborough Station, Hants.

COCOA-NUT FIBRE REFUSE: newly made. The same as supplied to the Horticultural Society.—Truck-load of 2 tons, 20s.; twenty sacks of same, 14s.; forty, 25s.; sacks included. All Free on to Rail. Cash with orders.—J. STEVENS AND CO., Cocoa-nut Fibre Merchants, "Greyhound Yard," and 153, High Street, Battersea, S.W.

GARDEN REQUISITES.
TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous .. 4s. 6d. per sack; 5 sacks for 20s.
PEAT, best black fibrous .. 3s. 6d. ,, 5 sacks for 15s.
PEAT, extra selected Orchid 5s. 6d. ,,
LOAM, best yellow fibrous
PREPARED COMPOST, best
LEAF MOULD, best only .. } 1s. per bush. (sacks included).
PEAT MOULD, ,, ,,
SILVER SAND, coarse, 1s. 3d. per bush., 12s. half ton, 22s. ton.
RAFFIA FIBRE, best only .. .. .. 1s. per lb.
TOBACCO CLOTH, finest imported .. 8d. lb., 28 lb. 18s.
TOBACCO PAPER ,, (Specialité) 8d. lb., 28 lb. 18s.
MUSHROOM SPAWN, finest Milltrack .. 5s. per bushel.
SPHAGNUM MOSS, all selected, 2s. per bush., 6s. per sack.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.
CHUBB, ROUND & CO.,
WEST FERRY ROAD MILWALL, LONDON, E.

A GREAT SUCCESS.
JEYES'
"GARDENER'S FRIEND."
One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can,
Effectually Removes all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.
Price, 3s. 6d. per Gallon, including drum; 40-gallon Casks, £4 10s. Carriage paid.
JEYES' SANITARY COMPOUNDS CO. (Limited),
43, Cannon Street, London, E.C.

YOU CAN IMMEDIATELY
Destroy all Insects
*And PARASITES that infest Trees and Plants (whether at the roots or on the foliage) by using*
FIR TREE OIL
INSECTICIDE (SOLUBLE IN WATER)
Green Fly, Black Fly, Woolly Aphis, Grubs, Ants, Worms, Mealy Bug, Thrip, Red Spider, Caterpillars, Mildew, Scale, &c.
From Garden, Greenhouse, or Yard, or Vineyard, these and all Insect pests are speedily cleared by the use of Fir Tree Oil. Effectual, Economical, and Safe. It does not injure Flowers, Foliage, or the bloom on Grapes, Stone Fruit, &c.
*FIR TREE OIL destroys Lice and Fleas on Animals; it will cure Ringworm and all Skin Diseases produced by Parasites, and is perfectly harmless to the Hands & Skin.*
Sold by Seedsmen and Chemists, 1/6, 2/6, and 10/6 a Bottle. Per post 3d. extra. Per gallon 12/6, or less in larger quantities.
A Treatise on FIR TREE OIL, as an INSECTICIDE, its application to Plants and Animals, sent Post Free, on receipt of address, by the Manufacturer,
E. GRIFFITHS HUGHES, Manchester,
Wholesale: BOOLER & CO.; CORRY, SOPER, FOWLER AND CO.; C. E. OSMAN & CO.; and from all the London Seed Merchants and Wholesale Patent Medicine Houses.
New York: BOLKER & SONS.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blights. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.
GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by Parcel Post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.



## PINE-APPLE NURSERY,

**MAIDA VALE, LONDON, N.W.**

The following are offered at exceptionally low prices. All the plants are healthy and well-grown, in varieties of first quality, selected by

## HENDERSON & SON.

New pure white-flowered, hardy PASSION-FLOWER, 2s. 6d.
12 CAMELLIAS, choice, English-grown, with buds, 21s., 30s.
12 AZALEAS, 12 sorts, beautiful colours, 18s.
12 DRACÆNAS, 12 sorts, very ornamental, 6s., 9s.
12 CROTONS, 12 beautiful sorts, 6s., 12s.
12 IXORAS, finest varieties, various colours 6s., 12s., 18s.
100 STOVE or GREENHOUSE PLANTS, choice selection of flowering and ornamental foliage, 5 sorts, 42s.; 10 sorts 63s.
100 choice FERNS, in great variety, 21s., 30s., or 42s.
12 MAIDENHAIR FERNS, 12 sorts, 6s., 9s.
12 Gold and Silver-leaved FERNS, 6s., 9s.
12 choice ORCHIDS, for warm or cool house, 24s., 42s.
12 sorts of MOSSES, including yellow, white, blue, and other coloured leaves, 4s., 6s.
12 MARANTAS, beautiful foliage, 12 sorts, 6s., 9s.
12 EUCHARIS AMAZONICA (the Amazon Lily), 6s., 9s., 12s.
12 NERIUM (Oleander), 12 sorts, various colours, 6s., 9s.
12 GREENHOUSE RHODODENDRONS, sweet scented, 12 sorts, 9s., 18s.
12 TREE or PERPETUAL-FLOWERING CARNATIONS, 12 sorts, 6s.
12 AFRICAN ASPARAGUS, a lovely plant to cut for all decoration purposes, most elegant for ladies' dress ornamentation, fine plants, 21s., 42s.
12 BEGONIAS, beautiful foliage, 12 sorts 6s., 12s., 21s.
12 GLOXINIAS, with flower-buds, beautiful, 12s.
12 HARDY WATER PLANTS, 12 sorts, 10s. 6d., 21s.
12 GARDENIAS (Cape Jasmine), best large variety, 6s., 12s., 18s.
12 HIBISCUS, 12 sorts, large brilliant flowers, 6s., 9s., 18s.
12 CLEMATIS, beautiful sorts, 12s., 18s.
12 ALOCASIAS, 6 sorts, fine foliage, 6s., 12s.
12 DIEFFENBACHIAS, beautiful varieties, 6s., 12s.

**LIST of Cheap Offer in Ornamental Plants, sent Post-free on application.**

## AUTUMN CATALOGUE OF FLORAL GEMS,

**GRATIS & POST-FREE on APPLICATION**

Before ordering elsewhere please send for our Illustrated CATALOGUE. In it will be found *useful instructions* to amateurs, enabling them *to pronounce botanical names correctly*, besides much further interesting information.

It is divided into sections, as follows:—

**BULBS.** In this department will be found many species, new, rare and beautiful, and which are not to be found offered in any other English Catalogue, whilst the prices of popular species, such as Hyacinths, Tulips, &c., will be found exceptionally low, *e.g.*, White Roman Hyacinths, splendid healthy sample, in quantities of 250 and upwards, 6s. 3d. per 100.

**FERNS.** We are offering some most beautiful specimens of rare and seldom seen species, many of which have been specially collected for us; and as the stock of several is limited we would strongly advise early attention, and thus save disappointment.

**ORCHIDS.** Hardy Orchids have received our special attention—the result of which is we are enabled to offer many lovely novelties, comparatively unknown here in England. We also offer these in collections at lowest figures possible, purposely to bring these beautiful novelties within the reach of all.

**PLANTS.** These comprise a list of herbaceous, insectivorous, curious, and a general collection of rare and other beautiful plants. This section will be found unusually interesting to botanists, &c., in search of "rarities."

**SEEDS.** We are in a position to place before our patrons unique stocks of all the *very best* strains, and would respectfully draw the attention of all "unique" collectors to the same.

**MISCELLANEOUS.** In this section we offer a miscellany of interesting items calculated to please both the professional and the amateur.

**N.B.—To Amateurs who are in the habit of purchasing Guinea and other Collections.**

*Instead of doing so this season send the order to us, leaving the selection to our judgment simply giving particulars as to nature of soil, position of garden, if any glass &c., when we feel fully assured that we can by this mode afford them much more gratification for their money than if they pursued the ordinary method.*

**VICCARS COLLYER & CO.,**
BULB MERCHANTS, &c.,
**CENTRAL HALL, LEICESTER** (where all letters are to be addressed) and
**Central Nurseries, Glenfield, near Leicester.**
A. W. CREWS, *Manager.*

## EARLY WHITE ROMAN HYACINTHS.

EARLY ROMAN and PAPER-WHITE NARCISSUS.

## MESSRS. JAMES VEITCH & SONS

BEG TO ANNOUNCE THEY HAVE RECEIVED THEIR USUAL CONSIGNMENTS OF

## THE ABOVE VALUABLE BULBS FOR EARLY FORCING,

And will be pleased to receive Orders for immediate delivery.

*BULB CATALOGUE for 1885 has now been Posted to all our Customers; any one not having received the same, a Duplicate Copy will immediately be forwarded Post-free on application.*

**ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.**

## MESSRS. GREGORY & EVANS,

**LONGLANDS NURSERY, SIDCUP,**

Will place before the Trade, at their GREAT SALE in SEPTEMBER, one of the Largest Collections of WINTER-FLOWERING HEATHS and OTHER PLANTS ever offered, including:—

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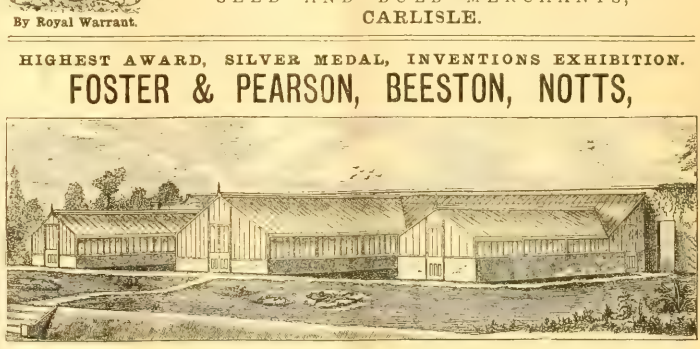
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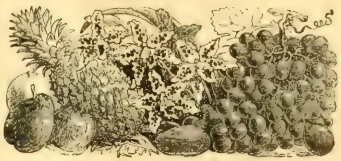
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THE

# Gardeners' Chronicle.

*SATURDAY, AUGUST 22, 1885.*

## BAYFORDBURY.

A SHORT distance from the town of Hertford lies the domain of Bayfordbury, the residence of W. R. Baker, Esq., a gentleman long known as a keen lover of the arts of gardening and tree culture. The garden, by its intrinsic and varied interest, at once affords indications of the knowledge and taste of the master. The place has also claims on the attention of artists, literary men, and students of social and political history, for here are Kneller's portraits of the members of that celebrated club which immortalised its host and landlord by adopting the name of Kit Cat. There they are—the mashers of the period, in wig and smart attire, such as makes those of the present generation thank their stars they have not to array themselves like one of these. But, interesting as they are, it is not of them that we have to speak. The Cedars on the lawns, the Oaks and Pines, the rock garden, the woods—these must engage our notice.

The garden front of the mansion faces south, a long terrace with flower-beds separates it from the lawn. On the sides of the house Passiflora cærulea runs wild, cut-leaved Vines enwreathe the portico, Arauja albens shows that the shelter of a stove is not indispensable for its growth; Escallonia macrantha and the blue-leaved Berberis trifoliata—these and many others clothe the walls.

A few steps and we are in the rock garden—a sheltered nook, encircled by trees and hedges, over which latter ornamental Gourds throw out their feelers and display their great and brilliant fruits, and under whose protection Cannas and Ricinus and other sub-tropicals unfold their charms. A Chamærops stands here all the winter, and has stood for several, without protection. Bamboos—Metake, Thamnocalamus Falconeri, and others—form striking clumps, contrasting strangely in their grace and elegance with that great mammoth of a plant, Gunnera scabra.

The rock plants are grown on mounds or burrs, forming so many islets amid a sea of turf, encircled with trees. The burrs are not, one would say, the most suitable of materials for a pictural rockery, but experience shows that, here at least, they tone down into soft gradations of colour, and become time-stained and lichen-covered in a way most pleasing to the eye, while rampant vegetation, creeping slugs and wily woodlice do not find many inducements to take up their quarters. The best thing to say about its appearance is this, that no one would know without careful inspection, what the material was. We shall not attempt an enumeration of the rock plants that were in bloom. The list would have to be reconstructed to-morrow. Suffice it to mention a group of hardy Cacti, such as Opuntia missouriensis and O. Rafinesquiana, the latter in full bloom, and surrounded by brilliant Mesembryanthemums. Plumbago capensis is a plant one does not often see in like situations, yet here it is quite at home, as if frost were unknown. Another Cape plant,

the Aponogeton, grows in the pools and bog-beds in a way that shows that it endures the climate of Hertfordshire almost as well as that to which it is native.

Terrestrial Orchids are over for the year, but here are Cyclamens still in bloom, Ramondias, Linnæa, Ferns galore. Tropæolum speciosum looks as if it would establish itself, but its brother, T. polyphyllum, as in so many other places, refuses to grow. Over the Laburnum trees climbs the delicate tinted Wistaria. Mr. Baker hoped the two flowers might make a match of it, but there seems no signs of such a consummation. Perhaps if a little gentle pressure in the shape of artificial aid were applied the union might be effected, but if it were we expect the result would only interest the botanists —to them it would, of course, be of great interest, but to the lover of flowers for their beauty only we fear the result would not be satisfactory.

From the rock garden back to the lawn is but a few steps, and those massive Cedars compel respect. They seem to say, Rock plants and sub-tropicals have their attractions, no doubt, even the bedding plants on the terrace are gay and bright, but look at us!—and they are noble trees, not of such spreading habit as some are, but solid, bold, well grown, comparatively little hurt by wind or snow. They are as handsome as the Goodwood trees, and nearly as large. They were planted about 1765, and one is said to have been a seedling from Dr. Uvedale's Cedar at Enfield. (This latter was planted between 1665 and 1670.) A third generation of Cedars is springing up at Bayfordbury, so that there is no doubt that, were the place left to itself for a few years, a miniature Cedar forest would result. M. de Candolle has noted a similar occurrence at Geneva. Mr. Baker is a great advocate for clearing away the soil from the buttresses at the base of the trunk of these old trees, and thus of facilitating the access of air and water.

As there are representatives of three generations of Cedar here, so there are of Oaks. A family tradition ordains that the heir presumptive shall plant an Oak so soon as circumstances permit after his birth, and in accordance with this we have in the park here a fine symmetrical Oak (pedunculata), planted by the present possessor of the estate in 1811—a sound, hale tree that must make its planter proud to see. Not far off is another Oak—this of the sessiliflora breed—planted in 1840, also a fine tree; while third in the list is a stripling tree of some twenty summers. The slowness of growth for the first few years, and the rapid development subsequently is very remarkable.

Fine trees of the Turkey Oak are here to be seen, but, however beautiful, they are not looked on with favour by the timber merchant. Crossing a ravine, now dry, but filled with traces of winter flood, we enter the pinetum. Mr. Baker began his collection soon after Douglas sent home his precious introductions, and availed himself largely also of the subsequent importations of Hartweg. On looking round at these fine trees one wonders if there are not more worlds for the Royal Horticultural Society still to conquer. We know it is said that the nurserymen now-a-days do that work better than the Society could do, and we remember, as all must, with thankfulness, how much has been accomplished by the Veitches, the Lows, the Standishes, and others. Still, the man of business naturally devotes his attentions to the fashionable plants of the day, and while Orchids are so important commercially, it is to be feared that other things of equal interest may be passed over. But this by the way. At any rate, this pinetum, seated on a gentle slope, tells unmistakably of Douglas and Hartweg, as others of later establishment do of Fortune and John Veitch, and those of the future will do of Maries. There are fine specimens of ponderosa and other nearly allied forms, such as Parryana, Beardsleyi, Jeffreyana, Benthamiana. P. macrocarpa, a stately tree, is once more bearing its giant cones near the summit. Two or three from this very tree were figured in our columns some time ago (March 28, 1885, p. 413). About one of the trees of P. macrocarpa here there is a curious history. Joseph Knight, the predecessor of Messrs. Veitch at Chelsea, gave to Mr. Baker a cone of this species, from which the seeds, as was thought, had all been taken. The cone was laid aside for a considerable time, and when it was again brought to light a seed was discovered—a seed now represented by a stately tree. Under the name P. californica we find a species (better called tuberculata) which has its trunk beset with whorls of cones which are not easy to detach, and which open nobody knows exactly when. The report is, that it is only when forest-fires cause the cones to crack open that the seed is liberated, and wafted to some spot where it can germinate. In any case, it is observed by travellers that the young trees of this species they meet with are all of about the same size and age, as if they all started into growth together. P. tuberculata, then, is similar in habit to the P. muricata, of which we have already given a figure (p. 53, January 12, 1884, vol. xxi). P. Parryana, so called after Mr. Gambier Parry, is one of the handsomest Pines, stately and massive. It has not, we believe, produced cones, but is considered to be a form of ponderosa. Pinus contorta, P. pinea, P. monticola, and Abies Nordmanniana and nobilis are all producing cones, as well as a host of smaller and less interesting species. Abies lasiocarpa is here a strikingly beautiful tree, quite distinct from grandis or concolor. The Douglas Fir in several variations does well here, and with Laricio and austriaca gives hopes that it may be serviceable as a timber tree. Picea ajanensis (generically called Alcockiana), and which is usually so beautiful, does not do well here.

Not unduly to extend the list and weary the reader we will not specify more of the fine and interesting specimens to be seen in the Pinetum, but it should be mentioned that in addition to the Pinetum proper the Pines have welled over into some outlying woods, where, mid the shelter of Oaks, Beech, and Hornbeam symmetrical Wellingtonias of large size abound and a pair of Nordmann's Fir, planted in 1855, are now the finest and most symmetrical of any that we know of—pyramids of combined grace and strength. Here, too, is a group of fine Taxodium sempervirens (Redwood) with more slender, pendulous branches, and finer, more delicate foliage than ordinary. The trees are now 60—70 feet high, and all of Fern-like aspect and of the same variety, which by a lucky accident were planted near to each other.

Adequately to deal with Bayfordbury and its treasures would require far more space than we can command. We shall have failed in our task, however, if we have not conveyed some slight inkling of the manifold and varied interest attaching to the place.

## CULTIVATION OF LAVENDER AT BRIGHTON.

DURING the past three years an attempt has been made to cultivate Lavender and Peppermint at Brighton; and although the experiment has hitherto been made on a small scale, the amount of success obtained appears to be worth recording. The difficulties attending the culture of medicinal plants are so great that any light that can be thrown upon the subject will, it is hoped, prove useful, and Mr. Sawyer, who has long taken an interest in plants affording perfumes, has kindly placed the results of his experience at my disposal.

It might be supposed that so distinct a plant as Lavender would not exhibit many varieties. This, however, is not the case. The first plants experimented on developed in the form of dense level-topped rounded tufts of foliage, with comparatively few flower-heads. Each flower-head formed a continuous spike, except the lowest whorl or verticillaster, which is separated from the upper portion of the spike by a short distance. This variety neither grows rapidly nor flowers freely, and the perfume is not so fragrant as in other varieties. This was, therefore, discarded. Another variety was then tried, in which nearly all the floral whorls are distinct, so as to form an interrupted spike. This variety grew rapidly, flowered freely, and was found to be delightfully fragrant, and was therefore adopted. It has the disadvantage, however, that the plant soon forms woody stems, which if the plants are much exposed to wind easily break, and loss of flowers results. Although this variety has been largely propagated by cuttings it does not always come true, several specimens being pointed out to me which were of sparing habit, and flowering very scantily, with herbage of a much whiter hue, and others with few flower-heads of a more purplish hue than the rest, and deficient in fragrance. It should be observed that all these varieties presented the characteristic rhomboidal bracts of the true Lavender.

It is obvious, therefore, that the cultivation of Lavender requires constant attention and habits of close observation on the part of the cultivator, and that the quality of the oil produced is likely to depend not only on the care with which the oil is distilled, but on cultivating only the best and most fragrant varieties, as well as on the character of the soil, as mentioned in my previous notes on this subject. It may be here noted that the chalky character of the soil on the hills near Brighton, especially in the ground selected by Mr. Sawyer, seemed peculiarly suited to the culture of Lavender, most of the plants being 2½ to 3 feet in diameter, with flower-stalks 2 feet or more in length.

The Peppermint cultivated by Mr. Sawyer has not succeeded so well as the Lavender, since, being grown on a slope, the suckers, instead of burying themselves in the soil, stand out and get dried up by the sun, and the plants do not multiply. The cultivation of this plant is obviously not suitable to the nature of the ground.

Rosemary, however, as might be expected, grows with rapidity and flourishes well, and should the quality of the oil prove as much a success as that of the Lavender has done, the cultivation of this plant will be extended. *E. M. Holmes, F.L.S., in the "Pharmaceutical Journal."*

# New Garden Plants.

### DENDROBIUM PARDALINUM, *n. sp.**

THIS is very like Dendrobium Macraei. It has its scandent stem covered with narrow ligulate monophyllous bulbs. Both the bulbs and the leaves are narrower than in the species just mentioned. The flowers are arranged in the same way. The sepals and petals are not whitish, but ochre-coloured, with dark purple spots. The lip offers a good mark of distinction in its very long stalk (isthmus) having two long undulate plicated keels, the central one being straight. The anterior part is pentagonal, both parts running backwards, which produces a sagittate appearance. As in Dendrobium Macraei, this part is very thick, and has some tumours. It was kindly sent to me by Mr. Harry Veitch, and, thanks to the good packing, the very fugacious flower could be well understood. *H. G. Rchb. f.*

### CHLOROPHYTUM RHIZOMATOSUM, *Baker, n. sp.*†

This is a new species of Chlorophytum, which has just flowered at Kew, remarkable for its very long,

* *Dendrobium pardalinum*, n. sp.—Aff. Dendrobio Macraei, Lindl.; pseudobulbus tolu-upue angustioribus, floribus solitariis (semper?), mento obtuso, labello lacinias lateralibus semiovato triangulis, unque (isthmo) longo, carinis a basi in basin; lacinia antice geminis, per unguem (isthmum) plicato-undulatis interjecta supra unguem recta-recta in lacinam anticam decurrente, lacinia antica pentagona retrorsis limbo externo undulatis, superficie hinc illinc incrasata. Coll. cl. Veitch *H. G. Rchb. f.*

† *Chlorophytum rhizomatosum*, n. sp.—Rhizomate longo, repente crassitie digiti, foliis subdistichis linearibus firmis glabris acute carinatis; pedunculo brevi furcato; racemis erectis confertis; bracteis minutis deltoideis, pedicellis brevissimis; perianthii segmentis oblongis obtusis dorso nervis tribus viridibus percursis; staminibus perianthio æquilongis; antheris linearibus magnis; pistillo flore æquilongo. *J. G. Baker.*

wide-creeping rhizome, which is about the thickness of a man's finger. In leaves and flower it most resembles the well-known Indian C. tuberosum, of which the synonymy will be found fully worked in my monograph of the Anthericeæ in vol. xv. of the *Journal of the Linnean Society*, p. 332. It came from Zanzibar, from Sir John Kirk, in 1884.

Rhizome wide-creeping, the thickness of a man's finger, with a greenish epidermis, sending out distant erect flowering tufts. Leaves five or six to a tuft, subdistichous, linear, falcate, bright green, glabrous, firm in texture, acutely keeled, ½—1 foot long, ½ inch broad. Peduncle erect, shorter than the leaves. Racemes two, erect, dense, 2—3 inches long; bracts minute, deltoid; pedicels very short, solitary, articulated. Flower white, ½ inch long; segments oblong, obtuse, with three green ribs on the back. Stamens as long as the perianth; anthers linear, ¼ inch long. Style white, ⅓ inch long, rather curved. *J. G. Baker.*

## CULTURE OF CACTUSES.

Here in Utah, Echinocereus phœniceus, Echinocactus Simpsoni, Mamillaria vivipara, var. Neo Mexicana, and Opuntia missouriensis, stand out in their native places and do well with frost 22 below zero; but they grow upon well-drained gravelly hillsides, and are usually covered with snow from Christmas to the following May. So much for the iron-clad Cactus. Then there are Cereus Engelmanni, Echinocactus Whipplei, E. Sileri, E. cylindraceus, Opuntia rutila, Mamillaria chlorantha, that grow with the Agave utahensis on the sandstone ledges, in many instances with hardly sand enough to cover their roots, and there are two Cactuses that stand out exposed to the fierce heat of the summer sun where hardly a lizard is to be found, with the thermometer down to zero in the winter.

In the Beaver Dam Mountains, west of St. George, growing in the sand on the limestone ledges with Yucca brevifolia, are Echinocactus Johnsoni and E. Le Contii. In this locality there is but little snow, but the thermometer often falls within 10° of zero.

The question has been asked of me very often lately as to when it rains and when it does not. Snows and rain commence about December 15 and continue until about May 1, when a period of drought sets in, lasting until about July 24. This being a holiday, it always rains, and it continues to rain until the last of August. At the higher altitudes, where the first-named Cactus grow, frost usually follows a rain, let it be at what season of the year it may. Last night, June 11, ice formed a quarter of an inch thick, following a very unusual rain storm that came off last week.

A few years since I had a number of Agave utahensis that I wanted to keep until I could get orders for them. I planted them with a Mamillaria vivipara in a box of clay soil, and told the lady in charge of the place to water them occasionally. I was away for some two or three months. When I returned to get my Agave plants to send away, I found them swimming in water, and was informed that they had been sitting on a back porch, where they got the morning sun only with a pail of water from the well every morning. I expected that they were ruined, but to my surprise they were well supplied with new roots. I have, when collecting Cactus, set out on dry ground in favourable locations what I had left over after filling orders; but I have never had the good fortune to have any of them root as well as the M. vivipara set with the Agave noted.

A number of the readers of the *Gardeners' Monthly* have asked me to tell them about the soil that our Cactuses grow in. Cereus Engelmanni arrives to its greatest perfection on the ragged edges of limestone ledges with a soil of clay and gravel. Echinocactus Johnsoni, E. Le Contii, M. chlorantha and Opuntia rutila, delight in a south-westerly exposure on the side of sandy and gravelly ridges with bed rock of limestone. Echinocactus cylindraceus, E. xeranthoides, E. Whipplei, Opuntia chlorotica, M. phellosperma, are found on the west side of cañons facing the morning sun, but never on the east side; sand, on sandstone ledges generally. Echinocactus Sileri on low hills, soil rotten gypsum. Echinocactus phœniceus, E. Simpsoni, Opuntia missouriensis, gravelly soil facing to south-west, or on top of high gravelly hills about the rim of the great basin. Mamillaria vivipara Neo Mexicana gain their greatest perfection in very tight clay soils amongst Sage brush. *A. L. Siler, Ranch P. O., Kane Co., Utah, June 12.*

[This account of the kind of soil and the habits of some of our native Cactuses will be very interesting to the lovers of these curious plants—a continually increasing circle. What Mr. Siler says about water for Cactuses we can confirm by experience. Even pot Cactuses we plant in the open ground during summer, and, whenever we have very hot weather for a few successive days, pour on the water, and it is wonderful how they seem to enjoy it.

In this section we find Mamillaria Nuttalliana, M. vivipara, Echinocactus Simpsoni, and Opuntia missouriensis entirely hardy, though singularly enough it never flowers. This peculiarity follows others. In Southern Utah the writer dug up (with the swingle-tree of a wagon, while his wife held the horses' heads) three large masses, weighing 20 lb. each, of Echinocactus phœniceus, then covered with their magnificent wine-glass shaped flowers. On returning from the Pacific they were found safely at home. Though they are in charming health they have not had a flower the past two summers—though the dry mesa soil on which they were growing has been imitated as nearly as possible. Under culture we cannot always rely for success on imitating natural conditions. We must learn from experience. Ed. *G. M.*]. *The Gardeners' Monthly.*

## TERRESTRIAL ORCHIDS OF SOUTH AFRICA.

*(Continued from p. 156.)*

Corycium.—Flower hooded. Sepals membranous, narrow, the upper one either free or united with the petals into a hood; lateral sepals connate, spreading. Petals concave or saccate, unlike the sepals, fleshy. Labellum adnate to the face of the column, entire, with or without a large simple or 2-lobed appendage. A small genus, with narrow or lanceolate leaves clothing the whole of the stem. Flowers small and numerous, in a very dense spike, dull coloured; not so ornamental as some of the other genera.

*C. bicolor*, Ldl. — Leaves lanceolate-attenuate, crisped at the edges. Flowers small in a long rich dense spike, pale yellowish and brownish. Labellum broader than long, notched at the apex. A native of the southern districts of Cape Colony, flowering in October and November.

*C. crispum*, Sw.—Leaves lanceolate-attenuate, crisped at the edges. Flowers not so crowded as in C. bicolor, and larger, yellow and brown. Labellum spathulate, slightly notched at apex. Sandy hills near Grœne Kloofe, &c., at about 300 feet elevation. It flowers in October.

*C. excisum*, Ldl.—A small species, with linear-lanceolate leaves, and a short dense spike of small flowers, with an oblong lip, deeply notched at the apex. Sandy plains at low elevations near Cape Town. Flowering in November.

*C. orobanchoides*, Sw. (*Bot. Rep.*, 1838, t. 45) — Stouter and taller than the last. Leaves lanceolate, slightly undulate, but not crisped. Spike dense. Flowers greenish-yellow, purple at the mouth of the hood. Lip transversely oblong, slightly notched. Sandy places on the Cape peninsula, at low elevations; flowering in September and October.

Cymbidium.

Sepals and petals subequal, free. Labellum free, spurless, entire or three-lobed, with crests or tubercles on the disc or front lobe. Pollen masses two, waxy, united to one gland. A large genus, of variable habit and considerable geographical range, the bulk of the species being natives of India and the Malay Archipelago, a few in Australia, New Caledonia, and Africa. Of the five South African species all but one are terrestrial, of which I only note the two commonest.

*C. aculeatum*, Swartz.—Leaves linear-acute, plaited, 6—12 inches long, 2—3 lines broad. Flower-stems appearing with the leaves, clothed with lanceolate acute sheaths, 1—3½ inches long. The flowers are pale yellowish, about ½ inch in diameter, and collected in a short, compact spike. This species appears to be common in several parts of the Cape Colony. On Table Mountain it grows in heathy and grassy places at from about 2200 feet to 3500 feet elevation, and on Mount Boschberg, in the eastern part of the colony, in stony, grassy places, up to 4800 feet elevation. It flowers in December and January.

*C. Buchanani*, Rchb. f.—This resembles the preceding in habit, but is stouter, taller, and the leaves broader, the flowers are more numerous, and in a longer spike, the sepals are green, and the petals and lip blackish-crimson. It is a native of Natal, Orange Free State, Griqualand East, &c., and is probably a more striking plant than C. aculeatum. It appears to grow at high elevations, up to 5000 feet.

Disa.

Dorsal sepal larger than the others, helmet or hood-shaped, with one long or short spur, or sometimes merely saccate, or quite spurless. Labellum free, varied in form, spurless.

A large genus, chiefly South African; varied in habit, flowers solitary, few or numerous in a spike. Some of the finest of the South African Orchids belong to this genus, of which those enumerated below are among the handsomest, though several other species would be worth growing, and would look well in a mass.

*D. atricapilla*, Bolus.—Stems 6—10 inches high, laxly clothed with linear-lanceolate sheathing leaves, somewhat folded lengthwise. Flowers, ½ inch in diameter, in a small dense corymb; dorsal sepal white, lateral sepals blackish except the basal part of the upper edge which is whitish; petals purplish? South-western districts, Worcester, &c. "Moist grassy places near streams," and Mr. Cooper once found it at Slang Hock, Goudine, "growing in a stream 3 or 4 inches deep, the water being quite hot to the hand." It flowers about December and January. See D. melaleuca.

*D. barbata*, Sw.—Leaves slender, grass-like, erect. Stem with four to six distant adpressed membranous sheaths. Flowers, one to four, about an inch in diameter, nearly white, the dorsal sepal with a few blue veins, and a short greenish conical spur. Labellum beautifully cut into a deep fringe of slender, slightly clavate filaments. It grows near Cape Town, on the sandy downs, a little above sea-level, and flowers in October.

*D. Charpentieriana*, Rchb. f.—A highly curious species. Leaves grass like, narrow, linear, radical; stem 12—18 inches high, with five or six distant adpressed membranous sheaths, and a lax few-flowered spike of bluish-purple flowers, about ¾ inch in diameter; the spur is short and conical, but the greenish labellum is 2½ to 3 inches long, very slender, less than one line broad, and ending in a number of thread-like, slightly clavate divisions. This appears to be a rare plant, but grows in the south-western region at an elevation of about 1300 feet, and flowers in November. It is well worthy of cultivation on account of its very peculiar looking flower, which is scarcely approached by any other species except D. spathulata and D. multifida.

*D. cornuta*, Swartz, *Bot. Mag.*, t. 4091.—A fine robust growing species, usually about a foot high, the stem closely beset with broad lanceolate acute leaves, which towards their bases are transversely marked with irregular red brown bars of more or less confluent spots. The flowers are about ¾ inch in diameter, and arranged in a rich dense spike; the dorsal sepal is dark dull blue, with a ½-inch long curved green spur, greenish inside; the lateral sepals are white, and the short obovate lip velvety purple-brown, with a white base. "A very hardy plant, with a remarkable range, both vertical and horizontal, reaching from sea-level to the summit of Table Mountain, 3300 feet, and from Cape Town to Grahamstown. It prefers a sandy soil, and flowers from October to January, according to elevation."

*D. racemosa*, Lindl. (*D. meyeracea*, Hook. f., *Bot. Mag.*, t. 6529).—A fine handsome species 1—2 feet high, with lanceolate-acuminate green leaves, and a somewhat lax spike of whitish flowers spotted inside with purple, the individual flowers about 1½ inch in diameter, with the dorsal sepal funnel-shaped and going off into a spur 1½ inch long. It is a native of Natal and the Eastern districts ranging to an altitude on Boschberg Mountain of 4500 feet.

*D. draconis*, Sw.—This species has a few long, broadly linear, weak radical leaves, and a stem 1 foot high, invested in membranous sheaths with a comparatively short spike of rather large flowers having a slender spur about 1½ inch long or shorter. This is an inhabitant of the South-Western region, and seems to like a sandy soil near the banks of streams, &c.

*D. fasciata*, Lindl. (Harv. *Thes.*, cap. i., t. 85).—A beautiful little species, with 2—3 cordate leaves passing

above into 2—3 stem-sheaths; the leaves are bright green above, dull red beneath, the sheathing part and stem-sheaths being pale greenish or whitish, prettily banded with dull red. The stem bears 1—2 flowers, 1—1¼ inch in diameter, the sepals and labellum spread out flat and are pure white with one or two purple dots on the middle of the lateral sepals and labellum; the small hatchet-shaped petals are tinted with yellow and dotted with red and dark brown. The flowers are large for the size of the plant, and chaste in appearance, the tubers are very small, not larger than a Pea. It grows in light soil in moist places and between rocky ridges on Table Mountain, at an elevation of 2000 to 3000 feet. This appears to be very uncertain in its appearance, as Mr. Bolus states that it was not seen by him "during ten years until October, 1884, when a fine season with unusually continued rains in October seem to have brought this into flower."

*D. ferruginea*, Sw. (Hook., *Icon. Pl.*, iii., t. 214).—Leaves radical, grass-like; stem a foot or more high, with distant acuminate sheaths, and a shortly ovoid or conical dense spike of brilliant orange flowers, about ½ inch in diameter, with a slender spur ½ inch long. Dry places on mountains in the neighbourhood of Cape Town and elsewhere, at an elevation of from 2500—3500 feet. "It does not flower till long after the rains are over, viz., in February. The tubers are buried rather deeply, or lying under stones."

*D. filicornis*, Thunb.—One of the smaller species, 5—7 inches high, with numerous linear radical leaves about an inch long, and acuminate erect stem-sheaths. The flowers are about ¾ inch in diameter, deep rose-coloured, and vary from two to ten in a lax spike. It grows in the neighbourhood of Cape Town in mountainous places, up to, and perhaps beyond, an elevation of 1100 feet, "in moist, sandy places, which become dry after the rains." It flowers about October to December.

*D. graminifolia*, Ker.—This, the "blue Disa," as it is sometimes called, is an exceedingly pretty species. It has numerous, very narrow, long grass-like leaves, a stem 18 to 24 inches high, with distant, membranous, acuminate, adpressed sheaths, and a lax spike of brilliant blue flowers about an inch in diameter; the spur is short, and the lip entire. "On the sides of Table Mountain, &c., from 1800 to 3000 feet elevation, growing in rather stiffer soil than the usual light sandy. It flowers in February and March, and is very abundant in some years."

*D. grandiflora*, L.—This is a synonym of D. uniflora, which see.

*D. longicornu*, Linn. f.—A handsome showy plant, 6 to 10 inches high, with four to six narrow, lanceolate, somewhat stalked radical leaves, and one to three stem-sheaths. The flower is solitary, lavender coloured, and 1½—2 inches in diameter, the dorsal sepal, including the spur, being 2—2¾ inches in length. It is somewhat surprising that this fine and handsome species has never been introduced into cultivation, as, next to D. uniflora, it has the largest flowers of any of the genus, and several of them together in a good sized pot would certainly make a very handsome appearance. "It grows in crevices of damp rocky ledges on Table Mountain, that face away from the sun and are dripping with moisture during the winter and spring months—that is, about June to October; it does not require much soil, but its tubers require to be covered with moss." It flowers in December and January.

*D. lugens*, Bolus.—This closely resembles D. graminifolia and D. venusta in foliage and habit, and the three would scarcely be distinguishable when not in flower; the flowers, however, are distinct from either and more numerous. The dorsal sepal and its short conical spur is of a metallic greenish-blue, the lateral sepals and petals dull purple, and the labellum green: this latter organ is deeply cut into a fringe of numerous, somewhat flabellately branched, slender segments. This grows on the Cape Flats in moist sandy soil among Restiaceæ, &c., at an elevation of about 100 feet, and flowers in October and November. The beautifully fringed green lip renders this rather a striking plant; the flowers are about ¾ inch in diameter.

*D. melaleuca*, Sw. (Harv., *Thes.*, cap. i., t. 84).—In stature, foliage, and in general appearance, this pretty Orchid much resembles D. atricapilla, but the colour of the flowers is different, all the sepals being white, whilst the petals and labellum are blackish, except at their base and apex, where they are whitish or pale yellowish. Like D. atricapilla this is found "in moist grassy places near streams" in the south-western districts. On Muizenberg Mountain it grows (with D. atricapilla) at an elevation of 1400 feet, and flowers in January. Mr. Bolus writes that in some years D. melaleuca is abundant, but D. atricapilla is rarer.

*D. patens*, Thunb.—A dwarf species, 3—6 inches high, with several radical linear leaves, about ½—1 inch long, and adpressed stem-sheaths, with acuminate, sometimes slightly spreading points. The flowers are solitary, or from two to eight in a lax spike; they are bright yellow, and about ¾ inch in diameter. This grows on Table Mountain, Muizenberg Mountain, &c., at an elevation of about 1500 feet, in moist sandy places which become rather dry after the rainy season, flowering in January and February.

*D. polygonoides*, Lindl. (*Bot. Mag.*, t. 6532).—Leaves lanceolate acute, passing into sheaths on the stem, which is 9—24 inches high, the dense cylindrical flower-spike occupying from a quarter to a half of it. Flowers small, but crowded, varying in colour from bright yellow to brick-red and scarlet. This species is a native of Natal, Zululand, &c., where it appears to be common, growing in marshy places in what appears to be a sandy peat, flowering in October. Grown in a mass this would make a good show; the *Bot. Mag.* plant seems to have been a poorly developed specimen.

*D. pulchra*, Sond.—A showy and distinct-looking species, with rather rigid linear-lanceolate acuminate leaves, rather closely pressed to the stem, and a fine lax spike of large pink flowers, an inch or more in diameter; the spur is slender, and ½—¾ inch long. It is a native of the eastern frontier districts and the Orange Free State, and from the appearance of dried specimens would seem to be a very handsome plant.

*D. racemosa*, L. f.—A fine tall species, 15 inches to 2 feet high, with several lanceolate-acute radical leaves, about 3 inches long by ½ inch broad, passing into sheaths on the stems, and a several-flowered lax, usually one-sided spike of handsome rose-purple flowers, 1¼—1½ inch in diameter. Next to D. grandiflora this is perhaps one of the showiest of the genus, for although the flowers are not so large as either D. grandiflora, or D. longicornis, yet they are of goodly size, and being several together, would appear to be effective. It seems to have an extended range, as it grows on Table Mountain and as far eastward as Grahamstown. I have no notes as to habitat, but it appears to grow in wet, sandy soil, and has thick fleshy roots; its tubers I have not seen.

*D. Richardiana*, Lehm.—A pretty delicate little species, 3 to 4 inches high, with narrowly elliptic, green unspotted radical leaves, and adpressed stem sheaths. Flowers ½ inch in diameter, in a small dense flat-topped head, white, with just the tips of the sepals tinted with pink. This charming little Orchid grows on Table Mountain, at an elevation of about 3400 feet, inhabiting "the crevices of steep wet rocks dripping with moisture during the winter and spring months (that is about June to October), and usually on the side that faces away from the sun. Very little soil seems to content it, and it likes its tubers covered with moss." It flowers in September.

*D. rosea*, Lindl.—A somewhat larger plant than D. Richardiana, but of similar habit, with elliptic and somewhat stalked radical leaves, acuminate stem-sheaths, and a sub-corymbose head of pretty pink flowers, about the same size individually as those of D. Richardiana, but arranged in a rather more lax and larger head. It grows on Table Mountain in similar situations and will require the same treatment as D. Richardiana.

*D. spathulata*, Sw. (Harv., *Thes.*, cap. i., t. 86).—An interesting little species, about 6 inches high, with linear grass-like radical leaves, two or three membranous acuminate stem-sheaths, and about two flowers, which appear to be purplish, and are remarkable from the lip having a slender stalk ½ inch long, and an extended cordate, or somewhat three-lobed blade. It grows at Tulbagh.

*D. tabularis*, Sond.—A small species about 6 inches high, the stem clothed with erect linear green leaves 2—4 inches long. Flowers rather more than ¼ inch in diameter, crowded in a cylindrical spike 3—4 inches long, the dorsal sepal with a very short spur, reddish brown, with pale yellowish edges, lateral sepals yellowish with brown margins. A pretty little Orchid if grown in a mass. It grows in moist places on Table Mountain, 2400—3400 feet above the sea, flowering in November and December.

*D. tenella*, Sw.—A pretty little species, 3—4 inches high, with erect linear twisted leaves 1½ to 2 inches long, and a close flower-spike 1 to 2 inches long of small flowers, sweetly scented and coloured different shades of purple and lilac. Mountainous places in the south-western part of Cape Colony, flowering in August.

*D. uniflora*, Berg. (*D. grandiflora*, L., *Bot. Mag.*, t. 4073).—This, the finest of all known Disas, is sufficiently well known to Orchid lovers as to need no description, but it may be well to give an account of its natural habitat (for which, as already explained, I am indebted to the kindness of Mr. Bolus), as it may be of use in conveying a hint to those who cultivate this fine Orchid. In Nature it grows along "the banks of streams which are wet or moist from May to November, and which become drier from November to May, but never so dry as most other Cape Orchids. On Table Mountain its range is from about 1500 to 3300 feet above the sea; but this is a locality where the temperature varies according to elevation very much less than on inland mountains. It flowers in January and February."

*D. venosa*, Sw.—This is very similar in appearance to D. racemosa, and might easily be passed for it, but it is fewer flowered, the flowers are more distant, the dorsal sepal narrower, and the lateral sepals are distinctly elbowed towards their base, which is not the case in D. secunda. The flowers are about 1½ inch in diameter, rose coloured, and showy. Not a common species; it grows in marshy places on Table Mountain, &c., at an elevation of from 1300 to 2400 feet, and flowers in December.

*D. venusta*, Bolus.—In foliage, habit, and general appearance, this much resembles D. graminifolia, and is equally pretty; the sepals are of a cheerful blue, as in that species, but the lip is creamy-white, and beautifully cut into a fringe of clavate filaments. It grows among shrubs, Heaths, &c., on the sandy plains called the Cape Flats, about 100 feet above sea level, and flowers in October and November.

*D. Zeyheri*, Sond.—A very striking species, 12 to 18 inches high, with grass-like, linear radical leaves, numerous green or purplish stem-sheaths, and a 2 to 3 inch long spike of about twelve to twenty scarlet flowers. The diameter of the open part of the flower is about one-third of an inch, but the dorsal sepal is prolonged into a stout, cylindric, erect spur, 1—1¼ inch long. A native of the south-eastern region of Cape Colony, growing in crevices of rocks on mountains in the division of Somerset at an altitude of 4500 feet. This is a very remarkable-looking species, the long, stout, brilliantly coloured spurs standing erect around the spike give it a very peculiar appearance, and if it could be introduced and successfully cultivated would form a conspicuous and attractive plant.

### DISPERIS.

Dorsal sepal united with the petals into a hood; lateral sepals spurred or saccate, spreading, free or connate. Labellum clawed, adnate to the face of the column, ascending between the lobes of the anther, with or without an appendix. A curious genus, of several species, variable in habit; natives of India, Madagascar, Tropical and South Africa. They are remarkable for the way in which the narrow labellum passes between the anther cells up into the hood. Some of them appear to be ornamental, of which those here enumerated are some of the principal in South Africa.

*D. capensis*, Sw.—A slender plant 6—12 inches high, with a more or less hairy stem bearing two distant narrow lanceolate leaves at about the middle, and a solitary flower about 1½ inch in expanse with long pointed sepals and concave galea. The colour of the flower seems variable, most generally purple, sometimes "yellow," or "white with pale green helmet." This species is common near Cape Town "on the downs in pure sand and on the mountain sides" apparently at low elevations; it flowers in August. Massed in a pot this would be rather effective, and ought not to be difficult to cultivate.

*D. Fanniniæ*, Harv. (Harv., *Thes.*, cap. ii., t. 171).—Stem a foot high with three lanceolate acuminate leaves, embracing the stem by their cordate bases. Flowers 1—6, delicate, white, ¾-inch in expanse; bracts leaf-like. Galea helmet-shaped, obtuse. A native of Natal, Orange Free State, and Eastern districts. This appears to grow in very sandy soil, but probably requires more moisture and shade than the preceding species. It flowers in February.

*D. paludosa*, Harv. (Harv., *Thes.*, cap. ii., t. 148).—Stem about a foot high, 1—5 flowered, with three narrow lanceolate acute leaves, and smaller leaf-like bracts. Flowers about ¾ inch in expanse, galea

broad, concave, purple, with green along the margins, near which are rows of dark purple points, lateral sepals acuminate, with curved spurs, dull purple, as are also the ovaries. This species grows on Table Mountain, &c., "in shallow running water or boggy places, but not in stagnant pools," and flowers in October. Harvey states that "it throws out subterraneous fleshy runners, that form buds at a distance from the parent tuber, thus increasing after the manner of Couch-grass, although not so rapidly." There are several others of this curious genus, but not such as would probably find favour with the general public, being generally more curious than beautiful. *N. E. Brown, Kew.*

*(To be continued.)*

## CORNER OF CONSERVATORY AT BLETCHLEY PARK.

This conservatory (of which an interior view is represented in fig. 49) is erected in the angle between dining and drawing-rooms of a many-gabled house, recently built on the site of an old farm-house at Bletchley Park for H. S. Leon, Esq.

Externally the building is almost as varied in outline as the mansion, of which it may be said to form a portion; and as good views of the park are to be had from the windows, the whole of the sides are glazed with polished plate instead of the sheet glass ordinarily used, which distorts the outlines of anything seen through it. The leaded lights, too, are made with clear glass, not the usual coloured patterns, which harmonise with nothing natural in flower or plant. Being situated at the north-east corner of the house, the troublesome question of blinds, or shading, has not had to be considered, the roof being of ribbed glass in large panes.

As the conservatory is high, and it was desired to have many of the smaller plants in pots (which would be lost comparatively if planted out in the large beds behind), a portion of the space is fitted with a flat stage of such a substantial-looking character as to be mistaken for stone. Underneath this stage the hot-water pipes are carried above the floor-level, as much heat is invariably lost in underground trenches; while the ugliness of the large black pipes is hidden by a trellis-work screen framed in the stage. The heavy lines of framing necessitated by architectural requirements are relieved by mouldings and "toothings," which have a good effect, avoiding the objectionable use of strong lines of colour.

Altogether, we think Mr. Warhurst (who commenced his London work under the training of Sir Joseph Paxton) may be complimented on the way he has carried out this work, and also the range of vineries, plant and forcing houses, in the adjoining garden.

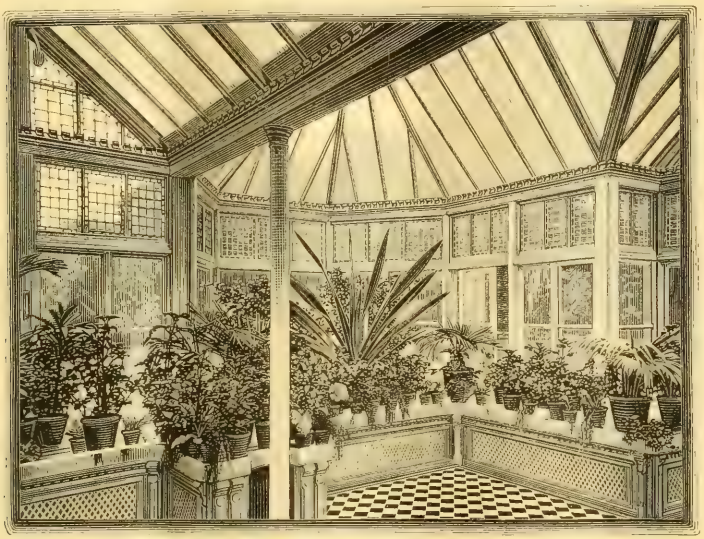


Fig. 49.—Interior of conservatory at bletchley park.

## CHELSEA BOTANIC GARDEN.

It soon becomes evident to the visitor that the leading object of this garden's existence is the cultivation and representation of the leading medicinal and other economic plants. Out-of-doors a miscellaneous collection of all sorts meets the eye, such as is to be met with in botanic gardens generally, and in this instance is needed for the use of students attending the lectures, and others. The houses, on the other hand, are filled to overcrowding with plants, which, although not absolutely confined to those of economic importance, are nearly so. One objectionable feature is noticeable, that is, the deficiency of room for the plants to display anything like their natural habits. This is not a solitary instance of an attempt to grow trees, shrubs, herbaceous plants and climbers, in narrow, low-roofed houses, but is probably a universal complaint, wherever their cultivation is attempted. It is to be regretted, however, that more attention is not devoted to this important branch of a botanical collection.

Conspicuous amongst others in a span-roofed house near the middle of the garden is a large specimen of Xanthochymus pictorius in fruit. This it does frequently, and at present the fruits are numerous and vary in size from that of a small marble to that of a pigeon's egg. They are yellow when perfectly mature, and edible, with a delicious taste. The three known species are closely allied to Garcinia, the species of which yield the gamboge of commerce, and differ only in the number of parts in the flower. Some specimens of the camphor tree are also prominent. Its proper appellation is Cinnamomum camphora, but it has been subject to change from the time of Linnæus downwards. It merely differs from the type by its perfectly deciduous perianth and scaly buds. The Calabash tree is a stumpy unattractive plant at all times, especially when the narrow clustered leaves have fallen; but economically it must be of vast importance to the natives of Tropical America, where it grows. The woody shells of its large fruits are made into various domestic utensils, and are sometimes beautifully carved and painted.

Plants producing tonic bitters and other similar medicinal properties are represented by Quassia amara, Picræna excelsa, and various species of Cinchona from which quinine is manufactured. Aromatic, carminative, and other flavouring materials are obtained from plants represented by Canella alba, Illicium anisatum, and Pimenta officinalis — the latter name hampered with a labyrinthic synonymy. There is a specimen of Bertholetia excelsa, the Brazil-nut tree, seldom seen in cultivation. Strychnos nux vomica is an instance of a deadly poison being made a valuable medicine under skilful management; and S. potatorum is used for clearing muddy water. Both are vexatious plants to the cultivator, because liable to throw off their leaves if the temperature of the house suddenly suffers depression.

Two rather tall lean-to houses are occupied with large specimens in pots or planted out, but to mention a tithe of them in any of the houses would occupy a considerable time. The leathery-leaved Clusia flava is fruiting, a property not shared in by many of the species, at least in a small state. Large specimens of Ficus bengalensis, F. Sycomorus, and F. religiosa have well nigh occupied their available space. The curious and remarkable habit of Castiloa elastica must be noticeable to every intelligent cultivator or keen observer. A short stout leader is annually produced, with several long, stout, lateral branches that assume a horizontal position. These latter in-

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variably become disarticulated with the main axis every winter, and fall away, leaving a naked and unbranched trunk. They are morphologically branches, but functionally partake of the character of compound leaves. In striking contrast to this is a fine large plant of Ruscus androgynus, whose lengthy stems are well furnished with flattened, leaf-like, evergreen branchlets. This highly ornamental plant is suitable for cultivation in large cool conservatories, but unfortunately is seldom seen outside botanic gardens.

Immediately outside one of these houses is a large specimen of the singular Conifer, Gingko biloba, that has battled with the smoke and dirt of a London atmosphere for many years, and probably owes its existence to the fact of its being deciduous, and thus getting rid of the sooty deposit that settles upon the leaves of evergreen Conifers, and renders their cultivation in towns all but impracticable.

Many other rare or interesting plants are trained against the walls of this compact, closely cultivated garden, amongst which may be noticed Hablitzia tamnoides and Styrax officinalis; the former an anomalous member of the Amarantaceæ, whose herbaceous stems often climb to a great height and flower most profusely; the latter a large specimen of a plant producing the Gum Storax of the ancients. This kind of Storax is now completely lost to commerce, and its place supplied by Liquid Storax, obtained from Liquidambar orientale. Why this should be the case, however, is not very evident. A low spreading tree of Kœlreuteria paniculata, with a stout trunk, must not be overlooked, as it is over a hundred years old, and probably the oldest, if not the largest tree in the country.

A miscellaneous collection of herbaceous plants, arranged in their natural orders, occupies the body of the garden, while a rather extensive collection of annuals is cultivated by themselves in the lower part towards the river. Hyoscyamus niger, of medicinal importance, loves the neighbourhood of towns, and is evidently at home here, judging from its frequency, and the fact of its being self-sown. Some fine seedling Carnations and single Dahlias are noticeable. The latter are said to have regained their popularity here.

Last, but not least, I cannot forbear mentioning a cool fernery devoted to the cultivation of British and half hardy exotic Ferns, a class of plants long studied by Mr. T. Moore, the Curator. What a valuable plant Athyrium Filix-fœmina plumosum would be if its feathery fronds were firmer and more lasting in a cut state! A large bush of Berberis Fortunei keeps fresh the memory of Robert Fortune, who gave up the curatorship of this garden in order to travel in China. Many other useful and valuable garden plants frequently crop up in other gardens to remind us of this successful traveller. *F.*

## ALPINE PLANTS AND ALPINE GARDENS.

THREE years ago I gave a description of the alpine garden of M. Prèvost, Chambésy, near Geneva, in the columns of the *Gardeners' Chronicle*. I thought I should not have to recur to this garden, but on a visit which I made lately, I noticed such an extension and improvement, that it is impossible not to speak of it again.

M. Prèvost now puts on one side all alpine plants, properly so called, which spread over the rocks to such an extent that he is obliged to cut them in, in order to occupy himself more with the sub-alpine species, and those which belong to the snowy regions.

Let us run through the garden. Under large and old Sambucus nigra M. Prèvost has got together all sorts of material suitable for draining his rockery, and has covered these with a loose layer of soil composed of Pine-needles, moss and vegetable earth (humus). He has bordered it with large trunks of trees, arranged pictorially, and over which a tuft of Linnæa falls in a most natural way. It is there I saw the largest extent of Linnæa borealis that I have ever noticed, and full of flowers; from a distance it looked like a rose-coloured carpet. This tuft measures at least 1½ or 2 mètres in diameter (4 to 6 feet). It is absolutely covered with Linnæa, except in some corners, where Campanula pusilla and Oxalis acetosella annoy the cultivator by spreading over the plant. At the base of this carpet of Linnæa are tufts of Pyrola rotundifolia in full flower. I have not seen them more prosperous in a state of Nature. M. Prèvost gives them almost the same soil as the Linnæa. One very curious thing to notice is a tuft of Primroses on which the flowers appear in a very remarkable state of transmutation. M. Prèvost planted some years ago a plant of Primula Auricula, and another of P. viscosa alba. Soon the flowers of P. Auricula began to vary and to become very distinct from the type of the species. This year they produced bright rose flowers, and the leaves of P. Auricula were bordered with small teeth, which gave them the appearance of P. viscosa major, for the plant has become very large. Now the plant, or the three plants, which have thus varied, are not seedlings produced on the rocks in a wild state, they are the old plants planted by M. Prèvost, and are not the result of any kind of hybridisation.

So as not to repeat what I have already said about this garden in No. 452 of the *Gardeners' Chronicle*, I shall only speak of those species not mentioned in that article, or of those whose present condition cannot be compared with what it was then.

Campanula cenisia abounds on the rockery; they are in full flower, but the flowers here are borne on peduncles of varying length, which is not the case on the Alps, or in those which we cultivate in the alpine garden at Geneva. I attribute that to the fact that M. Prèvost grows them in a soil with plenty of humus instead of in pounded slate mixed with very little humus, as I do. Viola cenisia is also very vigorous with M. Prèvost, and I have never seen them so fine even in the Alps.

As to Androsace lactea, carnea, and villosa, they are all over the garden, and appear to be at home there. Aretia helvetica is seen here in all positions to the north, south, east, and west. Moreover it succeeds, although always placed in a vertical position and planted in the crevices of the rocks. M. Prèvost has also constructed a small rockery specially for cultivating this plant, and there I saw a number of plants which had come up naturally from seed. M. Prèvost has placed above these tufts, slates, making a roof, shading the plant, allowing it to remain dry, whilst the roots are kept moist. The same may be said of Aretia glacialis, which is in full flower just now, and is very vigorous. Eritrichium nanum is as full of flower, and I saw some seedlings of it.

Everything which enters into the category of sub-alpine plants is grown here with great care; Gentiana bavarica, Saxifraga oppositifolia, S. biflora, Achillea alata, Dianthus alpinus, Lepidium alpinum, Geum reptans, Potentilla nitida, various Primulas, Ranunculus glacialis, and R. parnassifolius seem to grow naturally here.

M. Prèvost also makes a specialty of white and pale-coloured flowers; he has introduced into his garden many white varieties of the plants of our mountains which he has found wild—Aconitum napellus, with flowers of a very pure white; Lilium Martagon, the same; Globularia vulgaris, Erinus alpinus, and Primula viscosa flower with him of a pure white. But what struck me most in M. Prèvost's garden was his seedlings of alpine plants. Arnica montana, Androsace of all species, Eritrichium nanum, Primula viscosa, and a number of others, are raised by him with ease. He sows them in autumn, most of them in the open ground in a bed facing the south. *H. Correvon, Geneva.*

## VEGETABLE MARROWS.

THE present season has proved one in which it was needful for growers of these fruitful vegetables to take heed to Mr. Earley's warning with respect to sowing seeds too soon in the open. Certainly the spring was not wet, but it was cold, and although seeds were sown as usual at the end of April, germination was very bad, and not only had many to sow twice to secure a plant, but those who neglected to do so or had no more seed found to their sorrow later that they had largely missed a season.

The practice of sowing seeds of Marrows in the open is not universal, as I know more than one large grower who raises all his plants—some hundreds—by sowing a few seeds in 48-sized pots and keeping them in a frame until the weather is favourable for turning out; these usually have large crops. In other cases—and this is notably the case with a famous grower at Ealing—perhaps, also, with many others—wide trenches are thrown out and filled with manure, which soon heats, and being covered with soil, and seed sown, the seed soon germinates. The beds are, of course, covered with long lengths of frames, and ere these can be with safety removed fruit is formed. I saw long rows of plants so raised early in July, then some 15 feet across, and producing enormous quantities of fruits, and, of course, thus early securing much better prices than a month later. I tried the open-air sowing this season for the first time, but fortunately had some pot-raised plants as well, and thus filled up where the greater portion of the other seed failed.

No doubt, some small wooden frames a foot square, 6 inches in depth, and having a pane of glass fixed in the top, would give outdoor seed great help and protection, and would not prove costly, as they might be used for many years; still, during the present season the low average temperature which prevailed early proved very detrimental to germination even where some light protection was given. Probably many plants suffered from the drought all the more that spring growth was so slow. *A. D.*

## THE CROSS-BREEDING OF CEREALS.

As the improvement of cereals is a matter of national importance, we are pleased to announce that experiments in cross-breeding different varieties of Wheat have been resumed in this country, for the first time since the operations of Mr. Patrick Shirreff in the same department some thirty years ago. Hitherto the cross-breeding of cereals has been curiously neglected. It is possible that Thomas Andrew Knight, to whom horticulturists owe so much, may be in some measure responsible for this, since he maintained that any number of new-raised varieties of Wheat might be raised by merely sowing several sorts in close proximity, whereas, in point of fact, this does not happen, and the florets are, in all ordinary cases, self-fertilised. After close observation on this subject and many experiments at a period when time was cheap and the days longer to us than they are now, we made this entry in our notebook:—"The stamens are fully developed, and the pollen begins to shed before the florets expand, and their task is accomplished before they (the stamens) make their appearance outside the ear." We received therefore with perfect faith the statements of Mr. A. S. Wilson in his paper read before the Botanical Society of Edinburgh, and published in the *Gardeners' Chronicle*, 1873, pp. 362, 400, and March 14, 1874, p. 340, that self-fertilisation is the rule among cereals. Mr. Wilson observed that the flowers of Wheat, Barley, and Oats, open to a slight degree to allow the anthers to protrude. It is then they are seen outside the ear, and any person walking through the corn at that particular period will have his garments smudged with pollen. Mr. A. S. Wilson has found from actual counting of pollen grains, each being a separate cell, that an anther of Wheat contains 6864 grains, that 390,000 of them weigh but one grain, and that an acre of good Wheat produces about 50 lb. of pollen, while an acre of Rye produces about two cwt! "And yet," says Mr. Wilson, speaking of the flowers of Wheat, Barley, and Oats, "they are fertilised before the anthers are visible outside." The clouds of pollen in excess of customary requirements are but the exuberant provision by which Nature has rendered the assurance of reproduction doubly secure. In proportion to the infrequency of cross-fertilisation among cereals, is the chance that artificial crossing of well selected varieties of Wheat—a process, not very correctly called hybridisation—may secure variation with vigour and all the accustomed advantages which result from such operations. For the sake of improving the cereals, why should not agriculture borrow the art and the skill which in horticulture have afforded such marvellous results in improving ornamental plants and vegetables? With regard to the effects of crossing, farmers are aware of the results of matching different breeds of the domestic animals. The offspring of sheep of the same breed, but of different families, will resemble their parents far more closely than in cases of interbreeding between varieties which are more distinct and distant. As with sheep so with Wheat. Mr. C. G. Pringle, of Charlotte, Vermont, United States of America, crossed two widely separated varieties called the Black Sea Wheat, a full bearded variety, and the Golden Drop. He selected the former as one of the very hardiest varieties ever cultivated in America, one which most successfully resists attacks of insects and fungus, and best endures bad farming and indifferent seasons; but its quality is below the

average, and he, therefore, fertilised it with the superior Golden Drop, hoping to impart to the offspring the hardiness of the one sort and the fine quality of the other. The results of this far-off cross gave him such a medley of varieties that he spent four years in rigid selection of the most promising among them before they consented to reproduce themselves true from seed. But even if far more time had been required in producing an improved breed, it would hardly have discouraged the experimenter, considering the immense value of the Wheat crop of the world, and especially of the United States. Mr. Pringle's relative, Mr. F. Horsford, of Charlotte, is now following in his steps, and has already placed upon the markets improved varieties both of Wheat and Barley.

It seems to us, however, that very few farmers will be likely to expend the time and care that are necessary for the improvement of the cereals by cross-breeding. Mr. Shirreff's mantle is perhaps more likely to fall on some enterprising firm of seedsmen having professed hybridisers in their service who are familiar with the most delicate manipulations connected with their art. Agriculture is already deeply indebted to the seedsmen for improvement by cross-breeding and selection of Turnips and other "root" crops. A wide and hitherto almost unexplored field is still open to them in the crossing of cereals and of various forage and leguminous crops. We have, therefore, watched with great interest the experiments in crossing different varieties of Wheat, which during several years have been in progress at Messrs. Carter's trial grounds at Forest Hill. The results this year look promising. Vigour has certainly been attained, and other merits, such as superior quality, will, we trust, be made manifest after the harvest.

## FRUIT CULTURE.

Peach and Nectarine Trees in Pots and Planted out.—I have for several seasons sent seasonable notes on orchard-house culture, and this mostly at a time when we had a very large orchard-house, containing a mixed collection of fruit trees entirely in pots. Now we are growing them both in pots and planted-out. Pot trees require considerable attention during the growing season, but their culture is most fascinating, and when one is sufficiently interested in the work labour is a pleasure. The quality of the fruit obtained from well grown pot trees is in every respect equal to that grown any other way. We have now cleared off all the fruit from both the planted out and pot trees in the earliest house. This allows the trees to be thoroughly cleansed from red-spider by the garden engine or syringe. They should be thoroughly washed as soon as the fruit is removed, and as I have repeatedly stated that all trees requiring to be repotted should be attended to soon after the fruit has been gathered. By that time the growth has been made, and the blossom-buds are in course of formation. The roots are in a highly active state at this time, and they soon lay hold of the fresh compost, running freely through every part of it before the end of the season. The fruit in the late house is now ripening, and producing a good succession ; as it is coming in quite fast enough, we keep the ventilators open night and day to their full extent Under those conditions the fruit is of excellent quality. We look over the whole crop daily, and gather such of it as can be easily removed, into flat baskets. A layer of cotton wadding is placed in the bottom of the basket, and over it a sheet of clean soft paper. The fruit is laid on it carefully, and need not be removed again until it is ready for use. The planted-out trees trained to a trellis when in a young state, have a tendency to make too vigorous growth. This is checked by stopping the gross growths in an early stage, and causing them to break again into several weaker shoots. The shoots must be well thinned out during the time of growth, and each ought to be well exposed to the sun. Some people tie the young shoots far too close together in summer, and at pruning time cut more than half of them out. This is a bad system, and cannot be recommended under any circumstances. It is always necessary to look over the trees in winter, pruning knife in hand ; but all or nearly all the thinning out of the growths must be done during summer.

The hardier fruit trees, such as Plums and Pears, succeed well if grown in the house until the blossoms are set, and the fruit firmly established on the trees. They may then be taken out-of-doors and placed in a warm position, the pots plunged to half their depth in cocoa-nut fibre refuse. They require plentiful supplies of water at the roots, and the leaves should be kept quite free from insect pests. Excellent Pears of sorts that do not ripen well altogether out-of-doors, will produce good fruit when treated in this way. The Plums are generally large in size, well-coloured, and excellent in quality.

Cherry and Apricot trees have to be grown in a house by themselves, or they must be grown in a light part of the house set apart for Peaches and Nectarines. They require a dry atmosphere when in blossom, and a much drier atmosphere and a free circulation of air afterwards ; neither do they like so much water upon them from the syringe; indeed, it is better not to syringe Apricots at all. *J. Douglas.*

## The Apiary.

I promised in my last to give instructions this time how to take the honey and double-up stocks for winter. And here the benefit of the modern system is at once apparent, for we do not kill the bees. One old lady said to me once, that if the bees were not killed that same day there would be too many. Do not trouble yourself about that.

The honey season is now over in all parts of our country, except where there is Heather, so that we may at once proceed to take our honey.

If you are afraid of stings, put on your gloves and veil, light your bellows and walk to your hives. Do not be at all excited, but what you do, do in a quiet determined manner, with no jarring, but as quickly as possible. If you are going to remove sections, just lift off the covering gently, and puff a little smoke over the bees ; they will at once rush downwards, instead of flying out. If your sections are in crates, twist the crate about gently, so as to loosen the propolis, and when you find you have disconnected the crate from the frames, remove it bodily, and cover up the frames. Some people take the sections to a distance, but I do not do that. Lift out the sections one at a time, sweep off the bees with a feather into the hive, or in front of the hive, and as the sections are cleared of bees, pop them quickly into a box with a lid, and when you have finished take them right away indoors. The bees will all quietly go home.

If you want extracted honey go to the hives in the same way ; lift the quilt gently, puff smoke over them to drive the bees downwards, and lift out a frame that has plenty of sealed honey in it, and shake the bees down into the hive, sweeping off any that may remain on the comb with a feather. Shut it up immediately in a box. A special comb-box is very useful. If you are not going to double your hives, you can take out all the frames except six or seven—the latter number is the safest. You can then cover them up. They will be perfectly safe with that quantity of honey all the winter. Some people say that it is as cruel to take the honey as to kill the bees ; but this is not so. If the bees have as much honey as they want, what more is required ? Enough is said to be as good as a feast. Besides, if there is honey to be obtained, bees will fill their hives, whatever their size. I must leave the doubling till next time, when I will also give some hints about extracting the honey from the frames. *Agnes.*

## THE EXTINCTION OF SPECIES.

At the last meeting of the American Association Mr. Meehan read a paper on "The Extinction of Species," of which the following is an abstract. In it he endeavoured to point out that, under what had come to be called the law of environment alone, which had been called into account for the rise and fall of species, things could hardly occur with the method and regularity which we saw prevailing everywhere around us. It was enough to show that, under the law of absolute selfishness which was involved in the theory of a struggle for life, and the doctrine of mere accident, which was all there was in environment, there could not be order or system except under intelligent direction and foresight. Instead of selfishness unselfishness was manifest in the actions of living things ; and, so far as vegetable life could be compared with animal life in its behaviour, unselfishness prevailed.

If we now glanced at the ratio of deaths at various ages we should see that no advance had been made through all the long ages in a victory for humanity over death. A few years had been added to the average duration of life, but the proportion of deaths at various ages remained the same, in spite of the great advances in knowledge of the medical sciences. In like manner in births the average proportion of the sexes continued about the same in all ages and climes. It must be evident that a mere chance condition of environment or an undirected struggle could not result in such systematic order.

Looking at plant life, he thought he could discern absolute provision for death ; and, if so, this would involve a weakness in the prevalent idea that a mere struggle for life, or conditions of environment, were the sole factors in the origin of species. Colour was an element of extinction, to a great extent. Fruit did not colour till near maturity. Leaves coloured when about to die. The petals of flowers were but modified leaves, and had far less hold on life than the leaves out of which they are transformed. While a leaf might have vital power enough to live three months, three weeks would witness the birth and death of the transformed leaves or petals. The races of coloured flowers, also, had, evidently, a shorter life than those with inconspicuous ones. Just in proportion as they are invested with bright colours do they seem to become imbecile, and unable to take care of themselves. Many fail to produce seed, except through the friendly aid of insects ; and, when they find themselves in localities where their special insects cannot attend them, they barely hold their own by offsets, or finally die away. If, as seems probable, coloured flowers have been evolved from inconspicuous forms, we see that it has been with limited facilities for running alone in the world, and by so much an advance on the road to extinction. One of the most interesting chapters in Darwin's treatise on this subject is where he shows that, in the highly-coloured order of Orchidaceæ, the amount of extinction must have been enormous ; and, in comparatively recent times, dichogamy was also referred to as evidently an agent in the law of extinction. This disarrangement of simultaneous maturity in the sexual organs of flowers had been traced in a great degree to questions of temperature. The male organs were excited to growth under a lower temperature than required by the female. In climates or seasons when the warm spring came suddenly, the pistils would mature simultaneously, or before the stamens. In climates or seasons where milder winters occurred before the spring-time set in for good, the males would mature before the female. In Pennsylvania the catkins of the Hazel bush, or of some Coniferæ, were often thus brought to maturity long before the females appeared, and there were no seeds in such seasons. The facts were indeed well known. The operation of such a law on the confinement of a species to a certain locality, or of total extinction, in case of a change of its own climate, was apparent. It was certainly a law of extinction which no struggle for life could prevail against, whether we admit that the conditions were under intelligent guidance, or mere accident. The plants had taken on, under some evolutionary views, conditions which only insured the more speedy destruction of the species. There was no chance for any one developing some "profitable" element that would fit the race to be better adapted to the changed conditions. Insects, or the wind alone, could aid such dichogamic changes in some few instances ; but how when the difference in time was so great that the fertilising element was wholly lost ? Mr. Darwin has frankly stated that "If we ask ourselves why this or that species is rare, we answer that something is unfavourable to its conditions of life ; but what that something is we can hardly ever tell." We cannot tell if we are to look at the selfishness which is at the foundation of the origin of species by "profitable efforts," or the accidents of environment ; but, when we see that colour and dichogamy are directly in the line of unfavourable conditions to easy and fruitful reproductions, and that, in whatever way we look at it, death is as orderly and systematic as life itself, why should we not be permitted to look about for some influencing cause where Mr. Darwin professes to be unable to find an adequate one ? He thought an unprejudiced view of the whole question would lead to the great probability, at least, that there was some power leading all things forward into one harmonious effort,

and to which the life or death of the individual was wholly subservient; and we might even go so far as to say that natural science had advanced so far as to take in to itself many of the subjects which were supposed to be the special prerogatives of natural theology. *New York Independent.*

## FRUIT NOTES.

Flued Peach Walls.—There are some old contrivances connected with gardening that have been all but given up which might, with advantage, have been still retained. Amongst them are flued Peach-walls. In many old gardens where such walls exist the flues have been allowed to get out of order, and in others, where they are still in a workable condition, they are never used. In parts of England where the climate is such as to enable the wood in most seasons to get sufficiently ripened to insure its blooming, dependence is now altogether placed on some or other of the various protecting materials used to preserve the bloom in spring, but which much too often are found insufficient to secure a crop. Repeated failures have not unfrequently ended in an outcry to the effect that Peaches on open walls could so little be depended on that to secure crops it was necessary to cover the trees with glass, or in other words to build houses for them, which houses, unless provided with heating apparatus, are so far from sure of attaining the desired object that blanks occur through the natural consequence of the bloom being brought on to open sooner than it would in the open air and getting destroyed by frost. In the northern parts of England, where it is only now and then that a season occurs which brings the wood up to the requisite fruitful condition, the plea for houses has more force. Yet even in such localities it is a question if flued walls, with some protecting material in spring, are not quite as reliable as unheated houses. With this in favour of the flued walls, that where a couple of heated Peach houses exist in addition, to come in in succession, the season for this fruit can be extended longer than with the aid of a cold house to follow those that are heated. At Temple Newsome, near Leeds, the Hon. Mrs. Meynell-Ingram's fine old place, there is an instance of what can be done by the help of flued walls in a cold, bleak locality, where little might be looked for in the way of the fruit under notice without means of securing the wood in right condition when the leaves fall in autumn. Again this season Mr. Dawes has as fine a crop of Peaches and Nectarines as could be desired, and, in addition, a greatly improved condition of the trees. In this locality it is often found necessary to resort to artificial warmth by the end of August, keeping on with it more or less according to the weather, until the leaves are about ready to fall. One great advantage with flued walls is that with little in the way of protecting material an attentive eye kept on the appearance of the weather so as to put on the fire early enough in the afternoons when there is likelihood of sharp frost when the trees are in bloom there is little danger of losing a crop. The comparatively little additional cost of putting in flues when a wall is being built, with the light additional expense in fuel and attention as compared with the continual cost in paint and the perishable nature of the woodwork in glass structures renders the abandonment of the old-fashioned flued walls anything but an unmixed gain in Peach cultivation; as with their assistance, where the trees receive the requisite attention by keeping the shoots thin enough, the foliage free from insects, and the roots sufficiently supplied with water, regular crops may be relied on. A word in favour of the old-fashioned flues may be voted behind the times in these days of cheap glass, but there is no disguising the fact that there are plenty of places where regular crops of Peaches were got by the help of the flues, where, since they have dropped out of use, little in the shape of fruit has been forthcoming. *T. B.*

Strawberry Aberdeen Favourite.

In the autumn of 1883, Connon & Reid, seedsmen, Aberdeen, advertised a very late Strawberry under the above name. Not wishing to be behind in anything in the fruit way, I ordered it, and, to give this said new sort a fair trial, planted it on a north border, well mulching every spring; and now I write to call attention to this really valuable kind. It is a very strong grower, free bearer, and producing fruit later than any other kind, for we gathered our last dish on August 12, really good sized fruit, of a bright colour, and not a bad flavour. This has been a most trying season for Strawberries—a cloudless sky, a tropical heat, and a deficiency of rain, and yet we have gathered Strawberries from the open exactly two months, the Black Prince, or Black Seedling from a south border first, and the Favourite on a north aspect. With several mid-season varieties between, it is rather singular that both kinds (the earliest and latest) should hail from the Granite City, but if Laxton's two new kinds should prove what they are represented, we shall from them get Strawberries from the open a week before Black Prince. Your northern readers will bear in mind that south of London, Strawberries are seldom gathered in any quantity in August, hence the report of the variety with which I head this article. *J. Rust, Eridge Castle.*

Peach Dr. Burkard.

Fruit large, globose, orange-yellow, deep red on the sunny side, flesh yellow, detached from the stone. It is a hardy variety, and bears well in or out-of-doors. It is said to reproduce itself from seed—a very unusual occurrence. A coloured representation is given in the July number of the *Bulletin d'Arboriculture.*

Reinette Hermans.

Fruit large, globose-conic, with a large open eye, clear red on the sunny side, yellow on the shaded side; flesh delicate, somewhat acid. It keeps well, and retains its freshness and crispness for many months. It is a good cropper, and the fruits are not easily detached from the branches. *Bulletin d'Arboriculture.*



## The Rosery.

ROSES IN POTS.

I am constrained to make a few remarks on Roses in pots at this season, because they are more likely to be neglected now, while they ought, as a matter of the first importance, to be in preparation for next season's bloom. The insect pests which are most injurious to the Rose are red-spider and greenfly, while that insidious pest, mildew, is sure to appear at this season on the plants standing out-of-doors. Besides these three I was horrified one season to find in addition beautiful examples of the orange fungus appearing on some plants recently purchased. We very speedily stamped that pest out by cutting off the affected parts and burning them. The plants were then dipped in a mixture of soft-soapy water, to which was added a small quantity of tobacco liquor, and a handful of flowers of sulphur to each pailful of the liquid. This mixture destroys all the insects and parasites I have alluded to. With good management none of these pests of the Rose grower ought to gain any headway. The red-spider would not appear if the plants were syringed well under the leaves in hot weather every evening, using, if possible, rain-water or water that had stood out in the sun all day. The position in which the plants are placed is of some importance. I have seen them arranged in front of a south wall, as this position was thought to mature the growths better than any other; but I fear the excessive heat from a brick wall is not sufficiently considered during very hot weather. I was at work close to a brick wall facing west on the 14th of this month, and felt uncomfortably warm at 4 P.M. I went into one of the houses and brought out a thermometer which was placed in a pot half full of sand on the temporary potting bench, and it at once rose to 105° Fahr. A temperature anything like this continued for several days would check growth, and red-spider would make a good fight for the mastery. The right place for the plants in summer is an open quarter in the kitchen garden, where they can be exposed to the sun and air all day long, but not to artificial or reflected heat. There could be no harm in placing the plants on a border well exposed to the sun after the middle of September, as the wood ought to be well ripened by that time, and a warmer position would complete the perfect formation of the buds.

Potting is one of the primary operations, and should be carefully done. Indeed, I attribute much of my success as an exhibitor to the care with which all the plants are potted. Perhaps the young gardeners associated with me in the garden could pot plants as well as I can, but I never trust to anybody, and pot all my exhibition plants, Orchids, Amaryllises, Hyacinths, Auriculas, Carnations, &c., myself. It is impossible to get good results if the roots are not in the best condition to take up the food with which they are supplied. All pot plants require perfect drainage, to begin with, and the potting of the plants must be done in such a way that the drainage does not become choked afterwards. We repot our Roses any time this month, and the first operation is the preparation of the soil. Good clayey loam, with plenty of decayed fibre from grass roots, should be mixed with a fourth part of decayed stable manure, as much leaf-mould, some charcoal broken up, and an 8-inch potful of crushed or powdered bones to each large barrowload of the loam. Do not use the dust from factories where articles are made from so-called vegetable ivory, as this is injurious. The pots, if they have been used once, must be washed clean; if new, they should be soaked in clean water a few hours before using them. The crocks ought also to be clean, and carefully placed in the pots. Place some tough fibre over them to prevent the compost from filtering down and choking the drainage. The plants soon become established at this season, if the shoots are well clothed with foliage.

Tea Roses ought always to be kept under glass. They are more truly perpetual than many of the so-called hybrid perpetuals, and when kept in good health the quantity of flowers produced by them is truly astonishing. Tea Roses may be repotted at the same time as the others, and in the same way, but the compost for them may be made lighter by adding to it a fourth part of light fibrous peat. If they are kept in a greenhouse all the ventilators and doors must be open night and day during fine weather. Syringe them well every evening. They must have plenty of light as well as air, and do not succeed huddled up among other flowering plants, and shaded, as greenhouses usually are; better place them out-of-doors than treat them in that way. *J. Douglas.*

## DAVID LOCKHART.

In consequence of the early records relating to men entering the service of the Royal Gardens having been destroyed the date of Lockhart's entry, as of many others, cannot now be ascertained. In 1816 he was appointed assistant to Christian Smith, the botanist attached to Captain Tuckey's expedition for surveying the river Congo, in West Tropical Africa; this expedition proved unfortunate, as the captain and a great part of the crew were struck down with fever. Lockhart and a few others escaped, but not with impunity, for on the ship arriving at Bahia he and others were placed in the hospital. On becoming convalescent he returned to England.

In 1818 he received the appointment of Superintendent of the Colonial Gardens, Trinidad, which, under the patronage of Sir Ralph Woodford, he greatly improved by making excursions to many parts of the island, and finding many new plants. He also visited Venezuela, on the Spanish Main. He found Humboldt's Cow tree, Galactodendron utile, also the famous Zamang of the Spaniards, Pithecolobium Saman. These, with many other plants, especially Orchids, were introduced by him to Trinidad. The Zamangs have become large trees; its pods, like the Carob tree of Europe, being found to be good cattle food, has led to its becoming cultivated in many warm countries. He took much interest in endeavouring to promote the cultivation of the Clove and Nutmeg, and wrote a treatise on the subject. He from time to time forwarded new plants to Kew, many being Orchids—the most remarkable of that time being Stanhopea insignis, Catasetum tridentatum, and the Butterfly Orchid, Oncidium Papilio; also the curious floating aquatic, Pontederia crassipes. In 1825-6 he formed large collections of trees and shrubs, of which may be mentioned the curious epiphytes, Nolrantea coccinea, Carolina princeps, Lecythis olarea, and Pandanus candelabrum.

In 1844 he visited his native country and spent some time at Kew, making lists of such plants as he considered suitable to the Trinidad garden; he appeared then in good health, but shortly after his return to Trinidad he was taken ill, and died at Trinidad in 1845.

A small but curious Orchid was named Lockhartia (L. elegans) by Sir Wm. Hooker, but it was afterwards found to have been already named, by Ruiz and Pavon, Fernandezia; and at the present time no other plant has been honoured with the name of Lockhart. *J. Smith, ex-Curator, Royal Gardens, Kew.*

## TREES AND SHRUBS.

Douglas Fir.—For some time past I had intended sending a note to the *Gardeners' Chronicle* for whether we regard its hardiness or its economical properties, I take it that although it is equal to any of the Pine tribe, one would not recommend a stately tree of this growth for exposed situations, but in planting there are always valleys and mountain brows where it will be quite at home, while the more exposed places can be devoted to the Scots and Austrian Pines. I ought to mention that at the same time and place we planted a quantity of the Wellingtonias, but they are only about half the height, viz., 30 feet. The time of planting will soon be here, and that is my reason for calling attention to the tree which bears the name of this distinguished and amiable collector, a statue of whom ought to adorn the city of Perth. *J. Rust, Eridge Castle.*



Fig. 50.—Raspberry Lord Beaconsfield.

## RASPBERRY LORD BEACONSFIELD.

This Raspberry (fig. 50), which was sent to us by Mr. Faulknor, is a chance seedling, produced in his garden at Inkpen, near Hungerford, in 1876. Being of vigorous growth, even in a poor soil of a sandy nature, and also a heavy cropper, it was brought before the Fruit Committee of the Royal Horticultural Society, and obtained a First-class Certificate in 1883. A large plant of this Raspberry was also exhibited at South Kensington this year, which was remarkable for its vigour and prolific habit. It would be an excellent variety for preserving on that account.

The following is a description of the plant by Mr. T. Moore, Chelsea, as given in the *Florist and Pomologist*, January, 1884:—"The canes of this Raspberry are stout, with a clear smooth nut-brown skin, and reach to the height of 9 feet or more in the sandy soil of Mr. Faulknor's garden. The leaflets are large and pointed, and of a silvery hue beneath. The fruit is produced freely in the axils of the leaves on the summer branches, and is large, roundish, or slightly conical, and of a deep crimson colour. The variety is a summer bearer, continuing to produce and ripen its fruit for a considerable period in succession."

on this tree, and your interesting woodcut of David Douglas in a recent issue brought it fresh to my mind. Twenty years ago this very autumn we were planting some choice Coniferæ, and amongst the rest a good many Douglas Firs, and curiosity led me to have a good look at them lately, and although the situation is anything but sheltered and nothing very wonderful in the soil—a light loam, still the trees have done exceedingly well. The tallest is 57 feet high, and supposing it to have been 3 feet high when planted it has thus grown 54 feet in twenty years. It is now full of cones; and seeing that the seed ripens perfectly in this country and as far north as Perth, and farther for aught I know, there is no reason why the tree should not soon become as cheap and plentiful as any other forest tree with which it may now fairly be classed;

## GREENHOUSE PLANTS: THEIR CULTURE AND MANAGEMENT.

Monochætums.—Amongst the various useful plants cultivated under glass that attain only a comparatively small size may be included the different varieties of Monochætum; they are easily grown and possess the advantage of blooming through the dull winter months; they are most profuse flowerers, for when well managed every bit of the preceding season's growth is thickly studded with flowers. They do not occupy much space, and by growing a considerable number their flowering may be prolonged over a lengthened period. When M. ensiferum, the first species introduced, came into the country, it was more generally seen than at present—why, it would be difficult to say, for as a manageable subject quite distinct in character from the general run of plants, it has merits not possessed by many things to be met with in almost every collection: and what holds good of this plant may be said respecting the others. When first cultivated in this country it was thought that they would require stove heat—a supposition not unnatural from the parts of the world in which they were found indigenous; and in their case, as in that of many other plants, sufficient data as to the elevation and other local conditions under which they flower naturally being wanting, strengthened this view. It may be well here to observe that, although the temperature of a stove is so far too high for them that it induces a soft delicate condition in the foliage, with a more straggling, loose growth, and a correspondingly shorter duration o flowering during the winter, they succeed much better if kept in a night temperature of from 44° to 48° than in a cooler greenhouse. In a house where they can be so treated, there are few plants that possess a more bright lively appearance through the dull season, when profusely studded with their rosy-purple tinted flowers, when introduced in sufficient quantity on the stage of a greenhouse, or in a similar position in the conservatory—where, as is usual, a suitable temperature is kept up—they are amongst the most effective plants that flower at this time. They are particularly adapted for cultivation by the immense number of people who at the present day possess a few small houses, and are desirous of introducing as much variety as they can into what they cultivate; a desideratum that is often completely defeated by attempting to grow in such houses plants that naturally occupy a large space, and which, if kept restricted to such limits as to prevent their too far encroaching upon others, generally results, as might be expected, in their never developing their true character in a satisfactory manner. The plants deserving of cultivation are anything but few in number; there is a wide field to select from, and those who have small houses will find it much better to choose plants that do not attain a size to render them unsuitable for the places they have to occupy. If small plants in 4 or 5-inch pots are obtained through the autumn or winter and kept in a temperature such as already indicated, by the middle of March root-growth will be sufficiently active to admit of their being moved on into larger pots; they root freely, yet there is no necessity for a large shift; 2 inches additional room will be sufficient, as it will be found better to move them again later on than to give a larger shift at once. They will succeed in either peat or loam, or a mixture of both, but in common with most plants of a somewhat soft nature, I have always found good loam to impart more strength to the wood and leaves than peat, although in the latter description of soil the leaves are usually larger, and of a deeper green colour. The more fibre the loam contains the better, and as much sand should be added to it as will insure its porosity, as during the growing

season they will require a considerable amount of water; for this reason the pots must also be well drained. Do not disturb the roots more than can be avoided, simply removing the old drainage from the bottom of the ball, press the new soil sufficiently to make it quite firm, keep the plants a little closer for a week or two, at the same time using a little shade if the weather is bright. They are naturally of a fairly bushy habit, yet nevertheless it is necessary at this time to keep them tied out, drawing the stronger branches to the outside, keeping them well down so as to insure the base of the specimens being properly furnished with leaves. A position on the front stage of a greenhouse or in a light pit will now be suitable for them, giving air proportionate to the state of the weather. The nearer they are kept to the glass the better, slightly damping them overhead in the afternoons when the weather has become warm. Any shoots that evince a disposition to outgrow the others must be shortened well back, pinching the points out of the others about the beginning of May. The roots will by this time be fast laying hold of the new soil, and they will require more water at this season than many things that grow to similar dimensions.

By the end of June it will be well to move the whole into pots a couple of inches larger, using soil of a similar description to that previously advised, giving less side-air for a few days, with sufficient shade to keep the temperature from rising too high, and keeping the surface on which they stand moistened. They should now again be gone over, tying them into shape, using neat sticks to support the shoots in their places, without carrying this so far as to give them a stiff, formal appearance. After this there should be no more stopping further than pinching out the points of any shoots that are too much outgrowing the rest. Syringe them freely every afternoon, and do not allow them to stand so closely as to induce a weak condition of the lower branches; they require little or no shade except in the very brightest weather. Continue to treat in this way until the beginning of September, when cease syringing overhead; after this time also less water at the roots will be required. Do not allow them through the autumn to remain where it is too cold in the nights, for if subject to a low temperature the foliage sometimes suffers through an attack of mildew, in which case the leaves quickly fall off to such an extent as not only to disfigure the appearance of the plants, but to injure their flowering capabilities as well. By this time they will be nice little pyramidal or bush-shaped specimens according as they have been trained, from 12 to 14 inches through. If a portion of them are wanted to flower earlier than they will come in the temperature already advised, this can easily be effected by placing them in a few degrees warmer quarters.

After blooming the plants should be moderately cut-in, reducing them to about two-thirds their size, and the atmosphere kept a little closer, damping them slightly overhead. As soon as they have fairly broken into growth turn them out of the pots, remove the drainage, and work out as much of the soil from the surface of the ball as can be done without mutilating the roots. Place them in pots 2 or 3 inches larger, using soil such as already recommended, and treat as during the previous year, except that another shift will not be necessary, as any further sustenance they may require can be given by the application of manure-water, which they much enjoy if not used too strong. It is necessary to be careful on this latter point, as I have seen the roots so far injured by manure-water being applied so strong, as to cause considerable quatities of the leaves to fall off. Through the autumn and winter treat as in the preceding year. It is seldom advisable to keep the plants more than two years, consequently it is well to start a few young ones every spring to supply the place of such as are discarded. The following are well worth a place:—

*M. ensiferum.*—Bright rosy-purple flowers, compact habit of growth; from Oaxaca.

*M. Humboldtianum.*—Bright rose: introduced from Caraccas.

*M. sericeum multiflorum.*—Flowers rose colour; a garden variety, probably the best of the family.

*Insects.*—Monochætums are little troubled with insects, though liable to the attacks of red-spider if enough attention be not paid to syringing, or if in the operation the water does not sufficiently reach the under-surface of the leaves. Should aphides make their appearance, fumigate. If any of the worst description of insects, such as scale or mealy-bug, affect them, it is better to discard the plants, as from their quick and easy growth this is preferable to the loss of time in cleaning, as the leaves of plants will not bear the application of any insecticide that will affect their total extermination. *T. Baines.*

# FORESTRY.

FORESTRY, while in theory it may properly be divided into two classes, namely, ornamental and useful, is in practice very difficult to define. The line of distinction, though it truly exists, is not easily drawn—like the blending of colours it is no easy matter to say where the one ends and the other begins. Ornamental forestry is often as useful as it is ornamental, and useful forestry cannot well be other than ornamental. There is not, however, so great difficulty in showing wherein they agree as in showing wherein they differ.

In carrying out extensive improvements on the Seafield estates, in Banffshire, during the last twenty years or thereby, amongst other departments planting of various kinds was extensively undertaken, and there, as on all well managed estates, very strict accounts were kept of each separate department, so that at a glance might be seen the gain or loss in any of them.

In the management of 5000 acres of plantation there was necessarily a large overturn of money, both in what was laid out and what was brought in, and in order that nothing might be charged against the woods and plantations beyond what was actually done for profit, or to ensure a profitable return in due course, a line of distinction was drawn between those plantations formed for profit and others formed for shelter and beautifying the estates generally. The one class was termed useful, and the other shelter and ornamental. The ornamental class of plantations differed principally from those termed useful in the former being small and the latter large. There were, also, other distinguishing features between them, but, as will subsequently be seen, that which led to this line of distinction being drawn was the difference in cost of fencing between that of a large and small plantation, acre for acre. The actual cost of planting an acre, whether in a 5 acre or a 50 acre plantation, ought to be very nearly the same, but the difference in cost in fencing, acre for acre, in the one compared with the other, will surprise those who have not done it, and it was this item of expense of fencing alone that indicated what was and what was not the size of the plantation that would pay, or should be classed with the useful or ornamental.

To enclose a square piece of ground of 5 acres it requires 622 lineal yards of fence to go round it, which, if a wire fence, at 8*d.* per yard, would cost £20 14*s.* 8*d.*, equal to £4 2*s.* 11*d.* per acre. To enclose 10 acres in the same way, and at the same price per yard, it takes 880 yards of fence = £29 6*s.* 8*d.*, = £2 18*s.* 8*d.* per acre. To enclose 20 acres in the same way it takes 1244 yards of fence to go round it, equal to £41 9*s.* 4*d.* = £2 1*s.* 5½*d.* per acre. Again, to enclose 50 acres of a square-sided piece it takes a fence 1968 yards in length = £65 12*s.* = £1 6*s.* 2¾*d.* per acre. To enclose 100 acres the fence required is 2784 yards in length = £92 16*s.* = 18*s.* 6¾*d.* per acre; and to enclose 1000 acres in the same manner described, it takes 8800 yards of fence = £293 6*s.* 8*d.* = 5*s.* 1½*d.* per acre. To enclose a circle of a given area rather less fencing is required than for a square, but the cost of erecting a circular fence, and its future maintenance, being considerably greater than for that of a square straight-sided enclosure, the latter is fully as cheap as the former. For the sake of comparison, however, and guidance to those requiring it, the annexed table is given:—

| Square Acres. | Length of Fence | Circular Acres. | Length of Fence. |
|---|---|---|---|
| | Yards. | | Yards. |
| 5 | 622 | 5 | 551½ |
| 10 | 880 | 10 | 779¼ |
| 20 | 1244 | 20 | 1102½ |
| 50 | 1968 | 50 | 1744 |
| 100 | 2784 | 100 | 2466 |
| 150 | 3408 | 150 | 3021 |
| 500 | 6224 | 500 | 5515 |
| 1000 | 8800 | 1000 | 7798 |

From the foregoing statements it is shown that to enclose a 5 acre plantation at 8*d.* per yard, it costs £4 2*s.* 11*d.* per acre, which would not pay, while to enclose 1000 acres at the same rate per yard, it costs only 5*s.* 1½*d.* per acre, which would pay; and if interest is charged equally upon both during, the growth of the plantation (seventy years) it will at once be seen why large and small plantations yield such very different returns, or why the one class pays and the other does not. Therefore it was that in the cases exampled the two were kept separate and distinct. *C. Y. Michie, Cullen House, Aug.* 18.

## CHERRIES IN POTS.

"A. F. B.'s" picture of Mr. Rivers' Cherry-house is enough to make ones mouth water, and having regard to the superb quality of the samples of fruit which that eminent grower has exhibited at South Kensington, it is not at all difficult to understand how tempting must have been the appearance of the crop. But Mr. Rivers sent to South Kensington last week with some Plums in pots, three Cherries, one old and rather large black kind, and two smaller plants of Bigarreau Gros Coeuret, the fruit on each very fine. These were in 10-inch pots, and were of varying ages. The larger tree had at the most a crop of 2½ lb. of fruit, and the other two about 2 lb. between them, or 4½ lb. in all. That was probably the outside quantity. Whilst looking at them I heard a gardener remark that such fruit would cost about half a crown a pound to produce in that way, and as my attention was arrested by such a statement, I asked him to demonstrate how such could be the case. He first priced the three trees at 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* 6*d.* each respectively, or 11*s.* 6*d.* in all. Then he said the cost of housing them, attending, and otherwise cultivating these trees all the year round, would be quite as much more, or a total of 23*s.* That would really make the prime cost of the fruit to be 5*s.* per pound; but of course something must be allowed for the fact that the trees might continue to thrive and fruit in pots for three or four years at least. Still in his estimation it seemed difficult to understand how house grown fruit from plants in pots could be obtained for less per pound than his original estimate. Well it must be admitted that beautiful, nay tempting, as must be a houseful of Cherries, the question must be answered at what cost are they obtained? Perhaps some gardeners—Mr. Miles for instance, or Mr. Hudson, both of whom produce grand samples of fruits under glass—would tell your readers how theirs are produced, and whether they think the cost is greater or less than the above estimate. It is certain that methods of culture under glass have been favoured in past years that have proved not only illusive in results, but also far too costly even if otherwise successful. Orchard-houses were at one time to have revolutionised fruit culture, and eloquent panegyrics upon them were liberally penned. Orchard-houses for Peaches, Plums, Apples, and Pears, have had their day, and a short one it was. The question, therefore, is this—Is there in Cherries any distinctive feature, which removes them as fruit from the ordinary category, and fits them far more for house cultivation in pots than other kinds? We ought to grow plenty of grand Cherries in our climate outdoors but for two reasons—first, the destructive spring frosts; and second, if the frost spare the bloom, the hardly less destructive birds. Such being the difficulties which Cherry growers have to encounter, the point for consideration is, whether the ordinary market price at which Cherries are sold is a fair test, and whether such grand samples of Cherries as are obtained by Mr. Rivers are really dear at even 2*s.* 6*d.* per pound. Of course his position differs very much from that of a private grower, because, even if the fruit cost him double that amount per pound, still they might pay well as means of advertising the kinds he has in stock. Gentlemen would perhaps take a more matter-of-fact view of the subject, and the cost to them would have no other compensating advantages than are to be found in the consumption of the produce of the trees, be it large or small. Trade growers can have no desire to mislead the public in this matter, because such course would only result in eventual loss; therefore, when fruits of such grandly tempting aspect are presented for public inspection, and gentlemen who may desire to grow their own ask what is the probable cost of the fruit per pound, they are but seeking for information, which is to them of primary importance. Some doubt was thrown on

the *bona fides* of Mr. Rivers' pot-grown trees because the pots in which they were growing were so new and clean that it was very hard indeed to realise that the plants had been grown in them all the season. Some of the plants, too, showed decided evidences of flagging later in the day, and whilst that fact naturally provoked attention it was explained that the plants had been stood on or partly plunged in the soil floor of the house, and the roots emitted from the bottom of the pots had been severed; hence the check to the plants. No doubt on that head Mr. Rivers will be only too ready to afford full information, but when the culture of Cherries in pots under glass is advised of course we want to know all about it even to the most trifling matters, as one year's failure only would sadly discount the hopes of those who built upon making the practice profitable. "A. F. B." very pertinently asks "Why not a Cherry-house as well as a Peach-house?" and the only rejoinder that I can offer is "Why not?" But then Peach-houses to prove profitable are planted with just a few trees, the primary cost of which is small, perhaps half-a-dozen at 3*s.* 6*d.* each, and being of diverse kinds their season of fruiting may in this one house be made to extend over several weeks. Then Peach trees are certain bearers, and continue to thrive well for many years. They are usually trellis trained just under the glass, as Vines are, indeed a couple of trees will often occupy a house which would hold thirty Cherry trees in pots. But if Peaches may be thus grown trellis trained why not Cherries, and upon that point we should like to have a practical answer. We do not want Morellos under glass—they do so well outdoors, but sweet Cherries, especially of the finest kinds, are most certain under glass, therefore why not plant and train them as Peaches are? If that method be both feasible and profitable then Cherry-houses for ever. *Cerasus.*

## THE GENUS ODONTOGLOSSUM.

(*Continued from p.* 200.)

THE Pescatorea section of Odontoglossum is a very lovely one, and a great favourite with all Orchid growers, on account of its easy culture in a cold-house, and the freeness with which it produces its flowers. Variable though it is, it does not produce varieties to which a distinctive name can be reasonably put in such quantity as the O. crispum, but where a really distinct form does appear there is nothing uncertain about it, and the work of naming and fixing the features by which it may be recognised is not difficult. The typical O. Pescatorei, with its white flowers sometimes tinted with pink, and the yellow blotch and the crimson marking on the lip, is well known, and proved so constant that anything very distinct was despaired of, when, at last, came—

O. P. VEITCHIANUM, that wonderful introduction of Messrs. Veitch's, which once seen is ever remembered, its clear white petals, so heavily marked with mauve blotches, constituting it not only a grand form of O. Pescatorei, but one of the very finest of all Odontoglossums.

O. P. SCHRŒDERIANUM, which flowered among Messrs. F. Sander & Co.'s importations in 1883, runs Veitchianum pretty closely for honours on account of showiness, it being like the last-named variety, but differs in having the blotches purplish-mauve, and in their not reaching so near the tips of the segments. Messrs. Protheroe & Morris obtained 70 guineas for it, and hence it may be inferred that it is good.

O. P. THOMSONIANUM, exhibited by Messrs. W. Thomson & Son, of Tweed Vineyards, Clovenfords, at the Orchid Conference, is of the same strain as the two previously named. It is a grand thing, with finely formed flowers, with some large and many small mauve blotches, and a delicate tinge of pink over the whole flower. The two, if not the three, of these lovely things are in the noted collection of Baron Schrœder, which has its doors always open for the best things, but for them only.

O. P. LOWIANUM is another finely marked variety, with flowers coloured like those of O. P. fastuosum.

O. EXCELLENS.—This supposed hybrid between O. Pescatorei and O. triumphans, or O. tripudians—a glance at whose likenesses at pp. 205 and 212 may assist the reader in tracing the resemblances—is in the possession of Sir Trevor Lawrence alone, and to him we are indebted for the grand inflorescence here illustrated (fig. 51, p. 241). It is one of the handsomest of Odontoglossums. The sepals and petals are bright yellow on a white ground; lip white, with yellow centre; the blotches on it and the rest of the flower being brownish-red. It was introduced by Messrs. Hugh Low & Co.

O. STELLIMICANS.—This is also a grand form, introduced by Messrs. F. Sander & Co., of St. Alban's, and having the same supposed parentage as O. excellens, as it has also the same general characteristics. Sepals and petals yellow, mauve-tinted outside, and sparely blotched with brownish-crimson inside; lip white, changing to lemon-yellow, and having a few crimson blotches. *J. O'Brien.*

# The Flower Garden.

RAIN is badly wanted for this part of the country as lawns are parched and newly planted trees and shrubs are suffering greatly. Where water can be had it should be supplied in abundance, and also to the flower garden, which should now be at its best, though in some instances this will not be the case, by reason of the parching the beds have had. Calceolarias and Violas suffered most, but even these are good where they are well watered with manure-water. The most effective arrangements are the carpet and succulent beds—this style of planting is equally well adapted for hot and dry seasons as for wet and cold ones—nothing can be better than they are at this period.

Propagation of summer bedding plants should now be proceeded with as early as possible, so as to get well-rooted plants before the autumn frosts, and Pelargoniums, especially the most approved kinds. The following are the most effective this season:—The golden variegated section—Mrs. Pollock, Star of India, Lady Cullum, and Crystal Palace Gem; silver-leaved section—May Queen, Happy Thought, Bijou, Queen of Queens, and Flower of Spring; bright scarlet—the best are Vesuvius and Clipper; crimson—Henry Jacoby; pink—Master Christine, Mrs. Halliburton and Amaranth, and many other names might be mentioned equally good; the semi-doubles, Wonderful, scarlet, and the double kinds do well this season, and flower freely. I have a mixed bed of them, all the best kinds, and they flower spendidly, and make effective beds.

In propagating Pelargoniums and other easy rooting plants they do not require at this season the usual protection of pits, as they will succeed far better if placed in the most sunny position in the open garden, and sprinkled with clean water every morning during the hot dry weather; if thus treated they strike roots quickly, and make good plants. I like 5-inch pots best for cuttings, as they are much more convenient, and do not damp off so much in winter, nor do the plants get so much drawn up, although they strike fairly well in boxes, and are used by many gardeners for economy. One important point should not be overlooked—the pots should be so arranged as to prevent worms from entering the pots, otherwise the drainage soon becomes clogged, and the advantage of pots is lost. It is best to place the pots on slates or on fresh coal ashes; the pots should not be placed too close together, so as to prevent the air passing through between them. The best mould is any light sandy soil, or loam and leaf mould and sharp sand in equal parts, well mixed and sifted, and pots or boxes well drained. As a rule it is not necessary to propagate a great quantity, but a few stock-pots only of such plants as Coleus, Iresine, Alternantheras, Verbenas, Heliotropes, Petunias, and Lobelias, &c.; all such are best struck in spring, but it is quite necessary to ensure safe wintering that they should be got in as early as possible. They will strike quickly in light sandy soil if placed under a frame or pit with slight bottom-heat. Sow seeds of annuals for spring flowering, either where they are intended to be grown, or for transplanting to other positions. Mixed borders may be made very gay by sowing a few patches of Silene pendula, Limnanthes Douglasi, Collinsia bicolor, and Candytuft; the new kinds are first-class; dwarf hybrid, carmine and white (new), all of which stand the winter well.

Gladioli are now throwing up their flower-spikes, and will require support, as the wind will injure them if not staked. The beds should be well mulched and watered; also tie and stake, as growth progresses, Dahlias, Hollyhocks, and herbaceous Phloxes, Chrysanthemums, &c.

Every effort should now be made to keep the gardens gay and effective. This can only be accomplished by a good supply of liquid manure three times a week during the hot, dry weather. The only thing to lead to success is to keep the water-pots in constant use, if not, most plants will perish under the trying season. We have no mowing to do here; the grass is completely burnt up. Let all dead flowers be kept picked off, and all kept neat and in the best possible order. *Wm. Smythe, The Gardens, Basing Park, Alton, Hants.*

# Plants and their Culture.

## CAMELLIAS.

THE next few weeks will be an excellent time wherein to give the stock of these winter and early spring blooming plants a general overhauling as to their condition at the roots. With plants in pots and tubs some fresh shifts may be found requisite. I do not advise frequent repotting with this genus any more than with the Azaleas commented upon in my last Calendar. With proper attention to their wants and the use of good sound lasting soil to grow them in, they will remain in the best of health for several seasons after having attained large dimensions. In the case of vigorous growing young stock a shift every other season may be necessary, it being a mistake to allow a young Camellia to become stunted and severely pot-bound in its earlier stages of existence. Close attention to watering at all times is most essential; any haphazard mode of performing this routine work is strongly to be condemned; this is particularly the case when the plants, after having filled their pots with roots, are very susceptible to any omission in keeping them well supplied with water. Again, discretion must be exercised when having to deal with freshly potted plants so as not to sodden the soil at the start. When the plants to be repotted are suspected of being dry in the centre of the ball it will be a good plan to stand them in a tub of water for a time to thoroughly soak the old ball. After doing this a pointed stick may be used with good effect in easing the roots at the sides where closely matted together. Allow room in the pot for a good drainage, also if possible secure a moderate covering of new soil on the top of the ball, as well as some rougher pieces next the crocks. Pot firmly as in the case of Indian Azaleas, keeping the soil thereby in a better condition for a greater length of time. Opinions vary as to the kind of soil to be recommended for the Camellia: some advise peat alone, others prefer loam; in my experience I have had uniform good success by selecting good sound lasting peat and turfy fibrous loam in about equal proportions, adding thereto a little quantity of small-sized crushed bones, and a liberal amount of sand or road scrapings. We have them in this mixture now, and in vigorous health too, intending, however, to pot afresh this season, some which have not had that attention paid them for four or five years past. Any of the stock that hardly requires a shift may be benefited by the removal of some of the surface soil and a fresh top-dressing to carry them over to another season. Plants and large bushes that are growing in the open border will also at times need transplanting into fresh soil; no better season can be chosen for this work than the present, the growth for the present year being made and sufficiently hardened so as not to suffer by the severance of some of their roots. In lifting such plants examine the drainage, and renew where necessary, afterwards placing some of the roughest pieces next the same. Comparatively speaking, the soil for such can be used much rougher and with better effect than when dealing with pot plants; press down the border firmly, however, and give one good watering as soon as completed, and frequent dampings during the afternoon, when the weather is bright and warm. Plants in pots, that have become somewhat unhealthy, may be brought round in a shorter space of time by having some portion of their old balls removed, and then planted into an open border. *James Hudson, Gunnersbury House Gardens, Acton, W.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| MONDAY, | Aug 24 | Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms, Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Cottagers' Show, from 1 to 6 P.M. |
| TUESDAY, | Aug 25 | Sale of Flowering Imported, and Established Orchids, at Protheroe & Morris' Rooms. |
| WEDNESDAY, | Aug. 26 | Harpenden Horticultural: Seventh Annual Show |
| THURSDAY, | Aug 27 | Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Aug. 28 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Aug 29 | Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE INTERNATIONAL FORESTRY EXHIBITION at Edinburgh was well timed. Public attention had been aroused, and people who usually take but a languid interest in such matters began to feel that something must be done. It is worth while inquiring for a moment what it was that stimulated the public. Was it the teaching of the class journals? Was it the warning of botanists? Was it the zeal, the enterprise, the unflagging industry of the Indian pioneers? No—it was none of these. More than forty years ago the state of British forestry was laid bare in these columns, and from that time to this the subject has never been lost sight of. Since that time other journals, and some specially devoted to the subject, have unceasingly "pegged away," but to little purpose. So far as India is concerned—that is too far off; the climate and all the conditions are so different from anything that exists in the home country that it is not surprising that the British public, always slow to take in first principles, and slower still to act on new ideas, paid little heed to the splendid services, and still less to the warnings, of that band of botanists from ROXBURGH to BRANDIS, not to mention those now in harness, who constitute one of the glories of our empire in the East.

The class journals might have gone on preaching, the botanists and foresters of our Asiatic empire might have gone on protesting and working to the top of their opportunities, but all would have been of no avail, or if that be too strong an expression, action would have been indefinitely postponed but for the writings of an American diplomatist and man of letters, a man of good observation and keen judgment, who occupied his leisure in writing of matters of which he had probably no more than the acquaintance of a *dilettante*. His book, *The Earth as Modified by Human Action*, aroused general attention, and is constantly cited now even by professional writers.

Be the cause what it may, however, it is certain that public attention is at last aroused to the importance of forestry, and as a consequence the attention of our Legislature has been turned in the same direction. Responsive to such stimulus the Edinburgh Forestry Exhibition was planned and carried to a successful issue, as recorded in our columns at the time. But exhibitions have but a transient effect, unless associated with some permanent record, and such record we have now before us in the shape of a selection of the prize essays written on the occasion in question.*

The introduction to the volume is taken up by historical details relating to the origin and organisation of the Exhibition. Then follow no fewer than twenty-one essays on subjects whose variety may be judged from the following brief summary. Two of the essays are devoted to the formation and management of tree nurseries, two to the formation and management of plantations in various localities, two to the consideration of Teak, four to the manufacture of pulp for paper. Besides these, there are papers on the Afforesting of Waste Land; the Culture of Trees on the Margins of Streams; on Pine Planting; on Cinchona Planting; on the Vegetation of Western Australia; the Formation and Management of Eucalyptus Plantations; the Timber Supplies of Great Britain; the Ravages of Timber-destroying Insects; Charcoal Manufacture (previously published in these columns); Utilisation of Coppice, and the Preparation of Lacquer, the latter by a Japanese gentleman. To attempt a critical analysis in one article of so many papers, of such varied interest, would obviously be futile. We confine ourselves, therefore, now to generalities, and may take further occasion to discuss details. In the work of so many hands we may naturally expect to find diversities of treatment and differences of opinion, and as things go it is desirable it should be so in order that matters may be looked at from different points of view, but this diversity of treatment does not, in our opinion, absolve the editors from securing something like uniformity of method if not of matter. It is, for instance, of little practical consequence whether a particular tree be assigned to the genus Abies or to the genus Picea. There is plenty of evidence in favour of either, but it is puzzling and vexatious to find when the editors had the choice of either that they should have adopted both. Again we are told that Abies canadensis is a "native of North America," and A. Douglasii is also a native of "North America." As North America extends from the arctic regions to the Gulf of Mexico, and from the Atlantic to the Pacific, it must be admitted that the statement made is somewhat vague. This is not a matter of minor moment when the influence of climate and the methods of cultivation are considered. Misprints of botanical names and information taken from second-hand sources, when original information was or might have been at hand, are matters which may be condoned; but when the same tree is treated of under two different names the matter is of more consequence. In fact, much of the matter of some of the essays, such as those on the management of forest tree nurseries, might very advantageously have been suppressed, and the discussion strictly confined to practical matters within the experience of the writers. A simple reference to the works where authentic information on the botany of the subject will be found would have sufficed. As it is, however, the essays furnish incontrovertible proof of the great necessity that exists for the establishment of forest schools.

As usual in such publications, the practical portion of the essays is in advance of that devoted to first principles, but even in the more strictly practical portions we find evidence of the want of that strict comparative and orderly method, and of that accurate keeping of records which constitute the essence of modern forestry. Maps and surveys, and the block system of management, are recommended, as if for occasional purposes, and not, as they should be, for universal employ. For those who look to forestry as a means of relieving agricultural depression, and obtaining a better income from the land, we commend the statements of Mr. DAVID CANNON. "Taking into account (Mr. CANNON is writing of Pine planting in sandy wastes) all delays and disappointment encountered during the work, and the difficulty in the remote and poor districts where Pines are mostly grown of disposing to any advantage of the first small thinnings, it is improbable that, on the average, any proceeds worth mentioning can be got before twenty years after the time when the land was reserved for afforesting. Compound interest on that period amounts, at 3 per cent. per annum, to 80.5 per cent., and at 4 per cent. per annum to 119 per cent. on the market value of the land. To these figures must be added the yearly taxes on the land, and the expenses of keeping up the plantations until their first remunerative yield with compound interest from the successive dates at which this expenditure is incurred. These items form the heaviest part of the cost, and as they are invariable, it must be borne in mind that they are the same for a bad plantation as for a good one, and such is the case with fencing, where that is required. The mere work of planting hardy Pines can of itself be carried out at a comparatively very small cost. From these considerations we may draw two important lessons:—First, that it is highly imprudent to buy land or to sacrifice rent on what one already possesses, with the purpose of planting and keeping it, without being certain of being able to sustain such a large loss of income without inconvenience; second, that it is the falsest economy to buy defective plants, to supply defective methods of planting, or to put down species of trees not perfectly suited to the soil, on the pretext of cheapness. The heaviest charges on planting, as in agriculture, being invariable, the only way of making our cultivation pay is to obtain the maximum of crop, which can only be got on land regularly covered with vigorous trees of the sorts best adapted to the nature of the soil. In afforestation work, therefore, though strict economy should be exercised and all useless expenditure carefully avoided, nothing should be spared that is really and practically required for the success of the enterprise." The whole of Mr. CANNON'S article is eminently worth reading from a practical point of view, though we may say that the test by fire that he relies on to determine the quality of seed certainly does not apply to all cases, while Pinus insignis cannot be recommended, in this country, as resisting spring frosts unless under special circumstances. The article on the Lacquer-tree of Japan by Mr. HIKOROKURO YOSHIDA is very interesting, and contains much information of a novel and heretofore not readily accessible kind. The author *inter alia* recommends the introduction of Lacquer-trees (Rhus vernicifera) into Scotland, where the climate and soil are well fitted for its cultivation. With this we conclude for the present our notice of a volume which on the whole is of very great interest and value.

* *Forestry and Forest Products*, &c. Edited by John Rattray, M.A., B.Sc., and Hugh Robert Mill, B.Sc., &c. Edinburgh: David Douglas.

—— PROPOSED EXHIBITION OF PLUMS.—It has been suggested that, as a great variety of Plums are fruiting this season, it would prove extremely interesting as well as instructive if examples of as many sorts as possible could be sent to the meetings of the Fruit Committee on the 25th of the present month, and on the 8th of September next. An excellent opportunity would thus be afforded of comparing the merits of the varieties of Plums in cultivation, and also in the correction of their nomenclature. It is felt that many inferior varieties of Plums are grown throughout the country, whilst many new and greatly improved sorts are comparatively unknown. Intending exhibitors who cannot be present should address their packages to the Secretary of the Fruit Committee, Royal Horticultural Society, South Kensington, taking care that their packages arrive in time. The carriage of the same will be paid by the Society. It is very desirable that young shoots with foliage should accompany the fruit, so as to facilitate identification.

—— BULBS IN THE PARKS.—We understand that the Metropolitan Board of Works have this year accepted the tender of Mr. B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, to supply their London parks with Hyacinths, Tulips, Narcissi, &c.

—— THE "INVENTORIES."—We learn that Messrs. FOSTER & PEARSON'S exhibit of plant-house, frame, boiler, &c., at the Inventions has received a Silver Medal, no Gold Medal having been given in this section.

—— SPANISH BOTANY.—With the tenth part the first volume of Professor WILKOMM'S *Illustrationes Floræ Hispanicæ* is completed. The text is written in Spanish and in French, the technical descriptions in Latin. The coloured plates are remarkable for their strict fidelity to Nature. The work may be had from Messrs. WILLIAMS & NORGATE.



—— FLORA OF FRANCE.—M. BAILLON, whose power of work seems to exceed that of most mortals, is now issuing a series of small coloured plates representing the wild flowers of France, and of Paris especially. The plates are intended for popular use apparently, but are better, both in execution and letterpress, than anything we have of the same kind. The work is published in packets, each containing ten cards, the descriptive letterpress being at the back. An index and analytical key will be given later on. Messrs. WILLIAMS & NORGATE are the English agents.

—— ROWE ORPHAN FUND.—We have received the following amounts, collected by Mr. C. ORCHARD, The Leigh, Coombe Warren, Kingston-on-Thames:—C. Orchard, 5*s.*; A Friend, 2*s.* 6*d.*; G. Woodgate, 2*s.* 6*d.*; J. Puttock, 1*s.*; W. Brown, 1*s.*; Quelch, 1*s.*; W. Howard, 2*s.* 6*d.*; Jas. Foster, 2*s.* 6*d.*; — Kent, 2*s.* 6*d.*; Geo. Proffit, 2*s.* 6*d.*; Wm. Rosier, 2*s.*; Geo. Sheppard, 2*s.*; Wm. Lane, 2*s.* 6*d.*; H. Pinnock, 1*s.*; E. S., 1*s.*; total, £1 11*s.* 6*d.* From E. Williams, 2*s.* 6*d.* A third collection, by Mr. GEORGE, Putney, is as follows:—Mr. Windsor, Roehampton, 10*s.*; Mr. Morrison, Roehampton, 2*s.* 6*d.*; Mr. Wright, Wimbledon Park, 2*s.*; Mr. Grant, Argyle Lodge, Wimbledon Common, 2*s.* 6*d.* Total, 17*s.*

—— COVENT GARDEN MARKET *v.* ASIATIC CHOLERA.—The following letter has been sent us for publication:—

"A rumour having spread in London, assisted no doubt by a statement made in Parliament, and the cartoon in *Punch* of the 12th inst., alleging that Covent Garden Market is in a dirty state, and likely to promote an outbreak of this dreadful epidemic, I beg to say that both statement and cartoon are incorrect, as the market is swept clear of all refuse each day, and during the summer season twice daily, the refuse being at once carted from the market, loaded in barges, and freighted as manure; in fact the refuse of fruit and vegetables is cleared from the market quite as soon as the consumer gets the sound goods from his fruiterer. Taking into consideration that the supply is now ten times as much as it was ten years since, it seems a wonder how this large quantity of goods can be placed on the market, sold and removed without causing serious inconvenience to the neighbourhood. The market is no larger now than it was fifty years ago, and if it were not for the admirable management of the Duke of BEDFORD'S agents, it would be impossible for the goods to be delivered, sold, and removed, as they now are, in many instances, in a few hours. In the year 1832 a rumour was started in London warning people against eating fruit and vegetables, alleging it to be the means of inducing and spreading Asiatic cholera. The result of this rumour was ruin to several fruit and vegetable growers, and the matter became so serious that the Market Gardeners, Nurserymen, and Farmers' Association were compelled, in defence of the trade, to obtain and circulate through London the opinions of forty-two of the leading medical men of that date, who were unanimously of opinion that fruit and vegetable diet would not in any way promote the spread of cholera, but by keeping the blood pure it would do much to prevent the spread of the epidemic.

"As this matter is of vital importance to the fruit and vegetable growers, I have felt it my duty to contradict the unfounded rumour, and the statement as made in the House last week, and I shall be pleased to allow any of your readers to inspect the copies of the forty-two medical opinions as given in 1832. *Richard James Steel, Secretary to the Market Gardeners, Nurserymen, and Farmers' Association*, 30, *Wellington Street, Covent Garden, W.C.*"

We willingly insert our correspondent's letter, and we are in a position to say that something is really done to keep the market and the adjoining streets clean, but that the measures taken are generally quite inadequate. Occasionally, for a week or two, an access of Dutch cleanliness leads to the streets being washed by a hose daily, to the great improvement of the streets and the comfort of inhabitants and passers-by. This we believe is done by the Local Board of Works, and we most earnestly hope that they will pursue the plan daily throughout the year. The slush in wet weather, and the dust and decaying refuse in dry weather, are alike adapted for the propagation and dissemination of germs, but it does not follow that those germs are always poisonous; if it were so, the staff of this journal would be but short-lived. If fever or cholera germs were present, as they may be any day, the matter would become more serious. The arrangements for the spread of the germs of the Potato fungus when it is present are, as we have often pointed out, admirably adapted for the purpose. As to the moderate use of ripe, wholesome fruit, it is no more likely to cause cholera than so much dry bread. Common sense, prudence as to clothing and diet—especially drink—and strict cleanliness, are the best preventatives that individuals can adopt.

—— DROUGHT.—Our friends on the other side of the Atlantic have had a dry time like ourselves. At Philadelphia, where the usual rainfall for June amounts to from 3 to 5 inches, less than one inch fell, and the early part of July added nothing to the store.

—— CYANANTHUS LOBATUS.—Since its first introduction in 1845 this charming little Campanulad has probably been many times reintroduced, as it has proved very troublesome to preserve in gardens generally. There is a beautiful patch of it in the new rockery at Kew, in a sheltered peat bed. It is thoroughly exposed, but gets direct sunshine only for the first part of the day, and seems perfectly at home, judging from the number of flowers in all stages of development. There is a figure of the species in the *Botanical Register*, 1847, 6, and the older botanists included it in the Polemonium family, from which it differs, however, in the usually greater number of cells to the ovary, and the numerous seeds. The superior ovary is rather abnormal in the order to which it belongs. The calyx is densely clothed with black hairs, and the comparatively large corolla is a pleasing pale blue, with a broad nearly white band round the orifice, heavily bearded with long hairs, forcibly reminding one of Menyanthes trifoliata. There are half a dozen known species inhabiting the Himalayas, some of which are annual, the rest perennial, including C. incanus, an extremely pretty alpine, but rarer than C. lobatus.

—— FRUIT CROPS IN BORDEAUX.—In a report on the trade and commerce of Bordeaux for the year 1884 it is stated that the crop of French, or, as they are generally called, Imperial Plums, was a good one, both in quantity and quality, but the demand was smaller than usual, especially from America, and the consequence was that prices were very low—lower, indeed, than they have been for years. The Plums, which are exported to England in glass bottles or tins, are cured and packed almost exclusively at Bordeaux itself by several English firms of long standing. For exportation to America they are usually packed in wooden boxes. The crop of Prunes was also a good one, and as the old stock of the preceding year was not exhausted when the former appeared, the supply exceeded the demand, and prices were accordingly low. In former times very large quantities of Prunes used to be shipped from Bordeaux to the North of England, to Northern Europe, and to Canada. Of late, however, the competition of Bosnian Plums has caused a gradual diminution in the exportation of French Prunes. Of Walnuts the quality of last year's crop is said to have been very superior, though the quantity was below the average. The chief market for French Walnuts was, as usual, Germany, the demand from England and America being smaller than usual. Regarding forest produce it seems that a new branch of industry has arisen which has attained to considerable importance. The Pine trees (Pinus Pinaster), as is well known, are tapped for the purpose of collecting the turpentine, and from this a new lighting material called Pine oil is made, which is cheaper than refined petroleum, while it burns more brightly, and is stated to be entirely free from explosive properties. When the trees are tapped carefully the wood is not injured for general use, but, on the contrary, is found to be even better fitted for certain purposes, such as for paper making, and for the preparation of pyroligneous acids.

—— SEED ADULTERATION.—The Act that was passed a few years ago does not, it appears, suffice to entirely prevent the evil practices of seed-doctors, or probably the fault lies with those who should avail themselves of its provisions and do not. We have before us samples of very old Trifolium seed and other samples of the same seed sulphured and repolished, and intended presumably for mixing with genuine seed. We are informed that as it is requisite to wet the old seed to enable it to take up the sulphur there is an increase of weight of about 20 per cent., which more than pays all the expense of the operation. The value of the old seed, we are informed, is about 4*s.* the cwt., while the doctored seed sells for 20*s.* or thereabouts the cwt. We do not know where or by whom this bit of meanness is perpetrated, but are astonished that farmers do not if not taste at least try before they buy. The much derided flower-pot experiments are sufficient to reveal the state of the case, for on trial we find about 23 per cent. of failures in the old seed as against 90 per cent. of failures in the doctored seed.

—— UTRICULARIA ENDRESII.—Few species of this large, extremely variable, and most interesting genus of plants are cultivated in gardens. This is the more remarkable, seeing how easily they yield to cultivation, judging from those few species introduced. Apart altogether from the interest attached to them as carnivorous plants, and their wonderful mode of action, the flowers of some species are curious and beautiful, resembling in a measure some of the Orchids. In habit the species under notice is a close ally to U. montana, and has linear spathulate leaves, bearing its comparatively large flowers on a leafless scape; the two-lipped calyx is green, fading to white or pink, and the pale violet-blue corolla fades to a lavender colour with a conspicuous yellow blotch on the palate. It is a native of Brazil, and forms an excellent subject for a pot or basket, preferably the latter, hung up against the glass. It associates well with Orchids, and a specimen has been flowering for some time in the Orchid-house at Kew. This species forms the subject of the plate 6564 of the *Botanical Magazine*.

—— CLOVE CARNATION, CHISWICK RED.—Many good things have originated at Chiswick, but one of the most useful is Clove Carnation, Chiswick Red. It is remarkable for its brilliant red colour and fine rounded petals, its freedom of bloom, and capital habit of growth. It has the good qualities the florist requires, and its habit and freedom of flowering especially suits it for cultivation by those who, caring nothing for what the florist requires, wants plenty of pretty bright-coloured flowers. Chiswick Red is in all probability a seedling from Coroner, a pretty rosy-crimson coloured Clove, raised also at Chiswick; also of good petal, a free grower, and profuse of bloom. Close by these Mr. BARRON has several beds of named varieties of Carnations and Picotees. These plants have done so well considering the dryness of the season, that they serve to correct a prevalent impression that the fine named varieties of Carnations and Picotees are too delicate to succeed well in open ground. This is a great mistake. Only plant them in suitable soil, and give them proper attention, and the fine bizarre and flaked Carnations and edged Picotees will be found to be admirable border flowers. But to have them up to the mark of those flowers shading, and the intervention of the dresser is necessary.

—— CASTILLEJA INDIVISA.—It is a matter of regret that this curious and showy plant is not sufficiently hardy to withstand the severity of our winters unprotected, for a more attractive or engaging rock-plant is seldom seen. It belongs to an order where we should little expect to find highly-coloured and showy bracts. The flowers themselves are small, greenish-yellow, inconspicuous and almost concealed in the deep carmine-red bracts of the inflorescence. The nearest allies of this plant amongst the British flora are Euphrasia and Bartsia, where, however, we have no showy floral leaves; but the inconstancy of this character, even within the limits of the same genus, is sufficiently demonstrative of its little value from a classificatory point of view. For mere decorative purposes it might be used in various ways, and a dry sheltered position on the rockwork would meet most of its requirements. It is furthermore sufficiently showy to warrant its being raised annually from seed. A fine clump of it may be seen in the new rockery at Kew, and the species is figured in the *Botanical Magazine*, t. 6376.

—— GERMAN CARNATIONS.—A small group of these, originated by M. ERNEST BENARY, of Erfurt, Germany, is now flowering at Chiswick; and it can be said of the strain that the plants are of a singularly vigorous growth, somewhat dwarf and compact, and decidedly free flowering. The leading varieties are, Anna Benary, white, with bright rosy-pink stripes, large, full, and very fine flowers, free growth; Queen Victoria, crimson, flaked with maroon, good habit, bold, and very showy; and Emperor William,

rosy-carmine, margined with white, very distinct and pretty. This variety has also sported to a very pretty, bright, pinkish-rose self, that is very attractive. M. Benary terms the foregoing his Victoria Strain of Carnations. They are quite distinct from any of our ordinary English Carnations, and they are well deserving of being grown in pots for conservatory and house decoration. The stout, but short and compact habit of growth fits them for this purpose; and there need be no difficulty in increasing special varieties, for all the varieties make a free growth of grass suitable for layers and pipings. Now that Carnations are being so much grown for border and cutting purposes, a notice of this fine German strain will not be out of place.

—— Summary of Agricultural Returns of Great Britain for 1885.—We have received from the Agricultural Department, Privy Council Office, August 14, the following statistics, which are of cardinal interest to the cultivator. The returns were collected on June 5, in the year 1883, and on June 4, in the years 1884 and 1885:—

Acreage of Land in Great Britain under

| | | Wheat. | Barley. | Oats. | Potatos. | Hops. |
|---|---|---|---|---|---|---|
| 1883 | | 2,613,162 | 2,291,991 | 2,075,381 | 543,455 | 68,016 |
| 1884 | | 2,677,038 | 2,168,820 | 2,015,363 | 565,048 | 69,258 |
| 1885 | | 2,478,318 | 2,257,346 | 2,040,680 | 548,731 | 71,314 |
| 1885 compared with 1884 | Increase | .... or — per cent. | 88,526 or 4.1 per cent. | 25,317 or 0.9 per cent. | .... or — per cent. | 2,056 or 3 per cent |
| | Decrease | 198,720 or 7.4 per cent. | .... or — per cent. | .... or — per cent. | 16,317 or 2.9 per cent. | .... or — per cent |
| 1885 compared with 1883 | Increase | .... or — per cent. | .... or — per cent. | .... or — per cent. | 5,276 or 1 per cent. | 3,298 or 4.8 per cent. |
| | Decrease | 134,844 or 5.2 per cent. | 34,645 or 1.5 per cent. | 34,701 or 1.2 per cent. | .... or — per cent. | .... or — per cent. |

Total Number of Live Stock in Great Britain.

| | | Cattle. | Sheep and Lambs. | | | Pigs. |
|---|---|---|---|---|---|---|
| | | | Sheep. | Lambs. | Total. | |
| 1883 | | 5,962,779 | 15,948,667 | 9,119,604 | 25,068,271 | 2,617,757 |
| 1884 | | 6,269,141 | 16,184,863 | 9,683,491 | 25,868,354 | 2,584,391 |
| 1885 | | 6,507,814 | 16,537,607 | 9,667,028 | 26,334,635 | 2,403,380 |
| 1885 compared with 1884 | Increase | 328,673 or 5.2 per cent. | 352,744 or 0.9 per cent. | 312,537 or 3.2 per cent. | 466,281 or 1.8 per cent. | .... or — per cent. |
| | Decrease | .... or — per cent. | .... or — per cent. | .... or — per cent. | .... or — per cent. | 181,011 or 7 per cent. |
| 1885 compared with 1883 | Increase | 635,035 or 10.7 per cent. | 588,940 or 3.7 per cent. | 877,424 or 9.6 per cent. | 1,466,364 or 5.8 per cent | .. or — per cent. |
| | Decrease | .... or — per cent. | .... or — per cent. | .... or — per cent | .... or — per cent. | 214,377 or 8.2 per cent. |

—— Tuberous-rooted Begonias at Reading.—Recently Messrs. Sutton & Sons erected on their Portland Nurseries, at Reading, two span-roofed houses, each 73 by 12 feet, in order to provide accommodation for the increased number of plants of their very fine strain of Begonias. These two houses are now quite full of plants just in the very height of their beauty, and they make up a floral display of such great attractiveness that it is worth a long journey to see them. Many of them are the finest selected seedlings of last year, and these are in 16 and 24-sized pots, large specimens, as finely grown as they are flowered; perfect in habit and heads of bloom. A considerable number are seedlings of this year, obtained from carefully recorded crosses, and flowering for the first time. What strikes one on entering these houses is the close, short-jointed, compact, yet free habit of these plants, resulting, no doubt, in great measure, from the use of B. Pearcei in the earlier crosses—Messrs. Sutton & Sons having from the commencement made habit a first consideration. Then as to the flowers, it is impossible to praise their high quality too highly. They are not only of large size, stout and finely formed, but they display such a great variety of colours, from the purest white to the richest and deepest crimson. Particularly striking are the shades of cream, primrose, yellow, buff, orange and apricot. Many deserve to be named, but once this commenced it would be difficult to stop. Messrs Sutton & Sons are content with a fine strain with which to supply their customers; and it is only in the case of some special results that they venture upon a name. Is a blue-coloured Begonia possible? In looking through the Reading collection, magenta-coloured flowers taking on shades of violet are distinctly noticeable; and may not these become the progenitors or types that shall eventually result in purely blue and purple flowers? As variety has become of the utmost importance, Messrs. Sutton & Sons are making special crosses, not only with a view of deepening the shades of violet, but also of securing other combinations. Already flaked and Picotee-edged flowers have been produced: some of the latter are very beautiful—such as sulphur edged with red, and white deeply edged with pink; pink and flesh-coloured flowers are distinctly striped and flaked with rose. In fact, who shall attempt to limit the capacity for developing colours found in the tuberous-rooted Begonia?

—— Satyrium coriifolium.—Notwithstanding the many terrestrial Orchids that were introduced many years ago, comparatively few of this type are cultivated at the present day. The species of Satyrium resemble the Disas in habit, or our native Ophrys. They are numerous, and vary with yellow, orange, white, pink, green and purple flowers, and are remarkable for the two-spurred or two-saccate labellum. The species under notice has medium sized uniformly yellow flowers, produced in a numerous flowered spike, terminating stout stems about a foot high. A few small bract-like leaves clothe the very base of the stem, above which are crowded a few large ovate leathery ones, spotted or maculated at the base with purple, after the manner of some species of Hæmanthus or Eucomis. The rest pass gradually into the bracts of the inflorescence. It has undivided tuberous roots, and succeeds with the same treatment given to Disa. There is a figure of the species in the *Botanical Register*, 703. Although introduced as early as 1820, a few other species were cultivated nearly a hundred years ago. A pan of S. coriifolium has been flowering for some time in the Cape-house at Kew.

—— Nova Scotia Fruit Crop.—"In our principal orchard districts," writes Dr. Lawson, "the weather that has prevailed since my last writing has been favourable for the maturing of the fruit. The temperature has been high, rising, on warm days, to 80°, 85°, and, on one occasion, to 88° Fahr. in the shade. But we have had a good deal of wet weather also, during which the thermometer has run down to the 60's. The rain came on St. Swithin's Day, and since then (in accordance with the popular omen connected with the name of the good old Winchester bishop) we have had frequent and heavy rains, alternating with bright sunshiny days, local showers, and coast fogs. The reports received from the orchards are less favourable than those previously communicated to you, and the weather is not sufficient to account for the difference. I presume that as the fruit swells, and is being more narrowly watched, it is now seen that we are to have a poorer crop than was anticipated some weeks ago. Mr. W. V. Vroom writes from Clement's Port that in Western Annapolis the orchard crops are almost a failure, Nonpareils, Baldwins, and Bishop Pippins (Yellow Belle-fleur), the most staple kinds, promising a very small yield, although some of the early kinds are better; but the crop, on the whole, will be much below average in that district. Pears and Plums (only partially grown) give better promise. Mr. A. B. Parker, South Farmington, also in Annapolis County, reports in similar terms that the orchard prospects are not in general promising by any means—below average, even for a short year. From King's County, however, where the orchards are very extensive, more encouraging reports are being received."

—— Edward von Regel.—The 71st birthday of Dr. Regel, the Director of the Imperial Botanic Garden at St. Petersburg, was celebrated on August 13. As a mark of esteem and recognition of his long and eminent services to botany and horticulture, several of his friends availed themselves of the opportunity of presenting Dr. Regel with a silver dinner-service for twenty-four persons, and an illuminated address from the pen of Dr. Bolle of Berlin. Dr. von Regel is one of the few who, beginning as a garden apprentice, has raised himself by his energy and merit to the dignity of "Excellency," and the title of "von," though his modesty often forbids his making use of the nobiliary particle. Our readers are familiar with the services rendered by Edward von Regel and his son Dr. Albert von Regel, and they will heartily sympathise with the spirit of the demonstration in honour of the Director of the Imperial Botanic Garden.

—— Cryptogamic Society of Scotland.—The eleventh annual conference of this Society will be held on the island of Arran on September 29 and 30, and October 1 next. Circumstances have prevented the meeting taking place at Inverness, as proposed, and as it is contemplated the Society should meet at Aberdeen in 1886 the Council have determined that the Conference should be held at Arran this year. Further particulars may be learned on application to the Secretary, the Rev. John Stevenson, Glamis, Forfarshire.

—— Map of London.—Messrs. Letts & Co. have published an excursionist's map of London, which will be very useful to the visitor to the metropolis. The principal feature of the map is that all unimportant detail is omitted, and only that which a visitor wants to know is given—viz., the places of amusement, public buildings, &c., with the principal streets and railways leading thereto.

—— Prosopis juliflora, known in Jamaica as Cashau, is (says Mr. Morris) an admirable tree (often attaining a height of 40 to 60 feet) to grow in dry gravelly soil, and in situations where rain does not fall for months together. It is fast-growing; the timber is excessively hard and remarkably durable. It is used for making knees of boats and all work requiring strength and tenacity. Posts of Cashau in wire fences last longer than any others, and are in great request for that purpose. Kingston is supplied annually with hundreds of tons of Cashau, which is the only firewood immediately accessible. The pods are of a sweetish succulent character, eagerly sought for by cattle; indeed, in some parts of the island during droughts they subsist largely on them. For horses and mules the pods are also admirable food, but it is very undesirable to allow them to feed upon the pods immediately after they have been exposed to rain, as ill-effects have been known to arise from the partially germinated seed being taken into the stomach, causing great pain and not unfrequent death.

—— Gardening Appointments.—W. J. Milchison, late Foreman at Kilkea Castle, Mageney, as Gardener to Mr. Smith, Clonard, Dundrum, Co. Dublin.—Mr. William Byron, Foreman to Mr. John M. Thomson, Gardener to his Grace the Duke of Grafton, K.G., Wakefield, Stony Stratford, Bucks, has been appointed Gardener to Thomas Eyre, Esq., Thorplee, Egham, Surrey.

## WREST PARK, BEDFORDSHIRE.

HAVING heard of this fine place, and being lately in the neighbourhood, I determined to avail myself of the chance of a personal inspection, which, through the courtesy of Mr. Ford I was enabled to obtain, and derived great pleasure from my visit. The mansion, which was built in 1836 by Earl de Grey, uncle to the present Earl Cowper, is approached from the village of Silsoe through a magnificent avenue of Elms and Chestnuts in four rows, the former occupying the two central rows, and the latter the outside. Being planted a good distance apart, the limbs of the Elms do not interlace for a considerable height, and this is done in such easy and regular curves that looking up at it gives one the idea of looking at the rafters and beams of a huge church. Several other avenues occur in the grounds, but this is certainly the finest, although another one of Limes, about a mile in length, planted in the reign and in honour of William III., is very fine. In close proximity to the mansion are two flower gardens, one laid out in the Italian style, with Box outlines, the centres of the numerous beds being planted with ordinary dwarf bedding stuff, presenting, on the whole, a rather unusual, though very pleasing appearance; the other is of more simple design, the beds being large, and consequently have a more massive appearance; both, however, are planted with great taste. The view from the front of the mansion is very fine, embracing the Italian flower garden, spacious lawns, dotted with specimen trees, mostly of a deciduous character, interspersed with ornamental fountain and lakes, with a large pagoda in the distance. The fountain, we may mention, is, when playing, fed from the top of the mansion, where the water is pumped from a tank fed by a "ram" by an engine.

Various objects of interest are to be found in the pleasure grounds, which are 120 acres in extent, and are beautifully kept, but a description of all would occupy too much space, so a short notice of them must suffice. A great many monuments and memorial slabs are erected to the memory of various celebrities who have planned and taken an interest in the grounds, also several statues, which are not arranged with the usual geometrical precision, but are discovered in most unexpected nooks and crannies. Besides the objects above-named are several "altars," with suitable inscriptions, one with ancient Greek and Arabic inscriptions. In a sheltered nook one comes unexpectedly on a burial ground, set apart as the last resting-place of the favourite dogs that have ended their days in the service of the owners of the beautiful grounds, where they now lie; each one is "honoured" with a stone, giving its name and other details. The wooded part of the grounds is intersected with walks, which, however, are seen but "one at a time," owing to the luxuriant under-growth and grand Box and Yew trees with which they are edged. These walks are so arranged that at almost every turn a new scene strikes the eye, the arrangements of foliage and water being particularly noticeable; at one time a still lake, surrounded with sombre Yews, &c. suggests to the mind visions of Eugene Aram which are quickly dispelled by a sparkling stream, rustling Willows, &c., made lively by the movements of numerous waterfowl, and also by the presence of that most lovely of English birds, the kingfisher, which here seems less shy and retiring than is usually the case. Another interesting feature in the pleasure ground is a rustic cottage, built by Earl de Grey for his grandchildren, in 1856, which is fitted up with kitchen, scullery, sitting-rooms, &c., and also a workshop; also a most complicated and novel sundial, for ascertaining the time in numerous parts of the world and other matters. On one of the large lawns, which originally was the site of the old mansion, a curious result of the recent drought is observable, the foundations being distinctly marked by the brown dried grass. An American garden is another pleasing feature in its proper season. One of the most delightful spots to my mind was a wild fernery, in a dense part of the wood, and where the Osmunda regalis, various forms of Athyrium Filix-fœmina and A. Filix mas, and large masses of several varieties of Scolopendrium vulgare and Polypodium vulgare were luxuriating around a miniature lake. Various trees thrive remarkably well, particularly the Yew, of which there are numerous ancient specimens, some being cut into various grotesque shapes, and others forming a massive hedge over 20 feet high, which has been planted over 300 years; a good specimen of the Silver Fir about 100 feet high; also some Cedars of Lebanon, and a magnificent Beech, 11 feet in circumference at 4 feet from the ground, and having a beautiful clean stem of great length.

The largest glass structure is an orangery 105 × 36 feet, which was built by Earl de Grey for the reception of Orange trees bought at the sale of the last King of France, most of which are Sevilles, and are carrying a nice even crop. Next to it, in point of size, is the conservatory, built against the mansion, which contains some fine climbers of various varieties of Habrothamnus, Tacsonia, Clematis, &c. We were not fortunate enough to see this house at its best, as the family was from home; but, judging from the fine lot of decorative stuff in preparation for it, it must present a fine appearance when staged properly. The other houses are mostly small, though in good repair, and filled with highly creditable examples, the vineries, Peach-houses, Fig-houses, &c., all being well cropped with excellent fruit and very clean; the other houses are mostly used for decorative stuff. The kitchen garden was in excellent order, and consists, together with the fruit garden, of 5 acres. The fruit trees, on the whole, were carrying good crops, though somewhat blighted with the drought. We must not forget to mention the excellent fruit-room, where we saw Apples of 1883, but these were decidedly "past their best;" not so, however, was a Ribston Pippin of 1884, which we greatly enjoyed.

## PROLIFEROUS FERN.

APPENDED I send you a sketch (fig. 52) of a variety of the Lady Fern which has produced two little plants

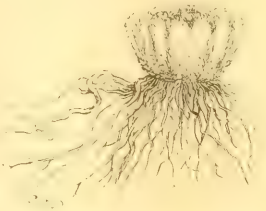


FIG. 52.—ADVENTITIOUS BUD ON ROOT OF FERN.

from true root-buds at some distance from the caudex, which for some, to me, inexplicable reason, all conditions being apparently favourable, has remained dormant until now. As far as I know, Athyrium Filix-fœmina is not recorded as productive of buds of this description, and it would be interesting to know whether other instances have come under the notice of the readers of the *Gardeners' Chronicle*. The buds, in my belief, constitute another new form of reproduction of A. F.-f., which can thus be multiplied:—1, By spores; 2, by apospory (A. F.-f. clarissima); 3, by buds on the upper surface on the axil of the pinnæ (A. F.-f. uncum cristatum); 4, by buds on the under-surface of the pinnæ occupying the place of sori (A. F.-f. plumosum divaricatum); 5, by buds which develope upon cuttings of the bases of dead fronds in the same manner as is recorded of Scolopendrium vulgare (A. F.-f. corymbiferum, Jumes); 6, by buds developed upon the root-fibres, which link the Athyrium with the stoloniferous Ferns (A. F.-f. Frizelliæ ramosum nanum). The plant itself I cannot send, as I wish to raise the progeny. Mr. T. Moore has, however, seen it. *Chas. Druery, F.L.S.*

## ALSTROMERIAS.

DRY and trying as the weather has been for most plants Alströmerias seem unaffected by the heat and absence of rain, and appear rather to have liked it, as I have never seen them better, for they have been full of flower, and have made a grand show; but though they are so good and useful in beds or borders or for cutting to dress in vases, they are seldom seen in gardens, and yet there are few things to equal them when they do well. To have them in this desirable condition it is necessary to sow or plant them in a warm sheltered spot, a border facing south under a wall or house being the best situation for them, and there the soil should be light and loose with free drainage or the tubers will die by rotting off in the winter. The way to start with them is to trench the ground deep and work in some sand and leaf-mould, after which the seed may be sown in it or the plants raised in pots and then planted out just as they are in the spring, the latter being perhaps the better plan, as then there is no fear of losing them through frost, which is apt to kill them before they have time to get down, but with a few months start they are able to take care of themselves. As we shall have a quantity of seed soon ripe that will be wasted I shall have pleasure in sending any one some who will forward stamped and addressed envelope to me by the end of this month. *J. Sheppard, Woolverstone, Ipswich.*

## NATURE IN GARDENS.

As one of those who think artificiality might with advantage be excluded from gardens perhaps you will allow me space for a few remarks. The mistake made by all who attempt to defend artificial arrangements in gardens on the ground that they are artistic is imagining that true Art can ever be in any way antagonistic to Nature. So far as Art deals with forms and colours it is high and true Art when it represents and expresses the highest things in Nature truthfully; it is mediocre and commonplace Art when it represents only those things which the untrained mind and eye can see; it is low and bad Art when it substitutes for the truths of Nature, falsehoods and vulgar human inventions. As Art can never be anything else but a representation of Nature, in presence of Nature it has no place. Art therefore can only come into gardens as a humble handmaid to help Nature to be herself. What is antagonistic to Nature in gardens is artificiality, which is the antipodes of Art. Art is and always has been the expression of man's delight in and reverence for the beauty of Nature: artificiality in dealing with the beauty of Nature is always the expression of blindness or indifference to that beauty. Our gardens are of necessity artificial because we grow in them plants from all available regions, and the only Art that is properly and legitimately admissible in them is just what will hide that artificiality and enable us to preserve every line and form and habit of the plants in a state of Nature, so that we may preserve and enjoy every atom of their beauty. The present, or rather the past style of gardening came in just when public taste in this country had reached a depth of degradation never existing even amongst the least intelligent savages, even the South Sea Islanders tattooing and the carving of their war implements being beauty and good taste compared with the domestic furniture and ornaments in vogue between 1850 and 1860.

The Art education which has been going on since then has created a revolution in taste which only those conversant with the matter would believe, so that what would have been considered good taste when many of our gardens were laid out is seen to be utter absurdity now.

Where our garden designers have gone so absurdly wrong for the last thirty years is in laying-out gardens without the slightest regard to the requirements of the plants which were to grow in them, and arranging the flower beds solidly and permanently to suit what should have been seen to be a mere passing fashion. Take the part of Hyde Park round the Albert Memorial, for instance. The soil is dry, and all flower-beds should have been level, so that they could have been flooded without trouble. Now a series of literal cinder heaps has been made in which everything starves. Gravel walks are artificial necessities, but there is no beauty in them; therefore they should be strictly confined to what are necessary.

Then on what principle of either Nature or Art can geometric bedding be defended? Nature has nothing to do with it, because she is contradicted at every attempt to develope the native beauty of the plants. Art abhors it, because it places a hideous disfigurement in just those prominent places of a garden where all the choicest and most beautiful flowers should be. Good taste condemns it because the colouring is a disgrace to civilised beings; common sense condemns it because the plants used for it require to be kept under glass all winter, and are only available during a few months in summer; reason and intelligence condemn it because it substitutes a few exotics, mostly pinched and clipped out

of all recognition for the multitudes of beautiful plants which will live with us the year round and give us a continual succession of grace, beauty, and variety —from Iris stylosa in January to the Christmas Rose in December.

What possible argument having even a grain of plausibility in it can be used for any style of garden decoration which tells us we must have no Pansies, Hepaticas, Anemones, Irises, Columbines, Phloxes, Hollyhocks, Lilies, Pinks, Pentstemons, Stocks, Carnations, Primulas, Polyanthuses, Daffodils, Pyrethrums, florists' and Parrot Tulips, Scillas, Ranunculuses, Globe Flowers, Poppies, Delphiniums, Tigridias, Hellebores, Campanulas, and all the hundreds of other beautiful things, but only a few continuous blooming plants; which vetos bush Roses and climbers in arches and arbours; which tells us we must have nothing near the house but pinched and clipped geometry, and just about as much of plant beauty as could easily be matched by filling the beds with tinsel paper and coloured rags. What is wanted in gardens is great beds of hardy plants arranged so as to give a long succession of flowers, and grouped as an artist would group them. Such groupings are of the easiest possible attainment, all that is required is that professional gardeners shall learn to grow hardy flowering plants at least as well as an average gardening amateur. Half hardy and tender plants need not be excluded, but should be used as auxiliaries. Close to the house may nestle Primroses and Primulas. Christmas Roses and other flowers which gladden the winter and early spring days, so that they may be seen from the windows of the house, while the flowers of late spring and summer may be placed further away. Then what beauty there might be in shrubberies if deciduous trees and shrubs were planted sparsely and in clumps, and, no single fallen leaf ever disturbed, a deep bed of leaf-mould would in a few years accumulate, in which the American Wood Lily and May Flower, the beautiful Cypripediums, nearly all the Lilies, the Anemones, the hardy Primulas, our pretty native Orchids, and many other beautiful things would live and thrive year after year with no trouble except hand-weeding.

The one way in gardening—is follow Nature, avoid everything artificial, strive to produce variety; follow Nature in the cultivation of the plants grown, and every year's experience will open up fresh possibilities of beauty, until our gardens will become what we have at present but little conception of. Every one who has tried it knows that hardy flowering plants are capable of producing such a fairyland of floral beauty that those who are satisfied with bedding are ever afterwards regarded as we regard Bunyan's man with the muck-rake in the *Pilgrim's Progress*. *J. D. D.*

## CORN MILDEW.

Puccinia graminis, Pers.—The accompanying illustration (fig. 53), engraved from Nature, and enlarged 400 diameters, shows the resting-spores of the fungus of Corn Mildew, Puccinia graminis, Pers., growing within the membranes of the fruit or grain of Oats. Four resting-spores are shown, each furnished with the characteristic joint across the shorter diameter and supported upon their stalks or peduncles, which arise from an involved mass of mycelium, or spawn, entirely within the substance of the grain. The fungus is growing in company with the fungus of "Smut" of corn, Ustilago carbo, Tulasne, and the small circular bodies towards the top of the illustration near E are "Smut" spores.

The squarish cells at A belong to the outer membrane of the grain in the Oat; at B the basal part of a hair is shown springing from one of these cells. The long flat cells at C belong to the inner membrane. The seven deeply shaded cells at D (above C), are the gluten cells containing the flesh forming material of corn, the curved lines at the top of the illustration, at E, belong to the bases of the starch cells, the contents of which produce heat and fat in animals. It will be seen that both fungi are growing between the gluten and starch-containing cells, and these cells they have pushed apart.

The illustration now given has been engraved for more than a year, it was taken from material I was working with in June, 1884, and the block was too late for insertion in my little book on the *Diseases of Field and Garden Crops*. At that time I was examining corn in an attempt to trace the very earliest stages of growth of the "Smut" fungus in corn stems. On cutting slices of the grains of young Oats the Puccinia came to light growing in company with the young Smut or Ustilago. I took pains to assure myself that neither fungi had grown from the outside inwards, but that both entirely belonged to the inside of the grain. The Ustilago always grows entirely within the host plant, till it at length bursts through the membranes of the grain. No Puccinia was growing on the Oats, but early "Rust," or Uredo pustules, were present on the leaves. The mycelium of the mildew had grown in one involved mass with the mycelium of the Smut, and both had fruited together within the membranes of the grain.

The example shows that not only the spawn-threads but the resting-spores of Corn Mildew can be, and sometimes do exist within the grains of corn when the corn is planted, that the fungus-spores germinate at the same time as the grain, and that the disease can

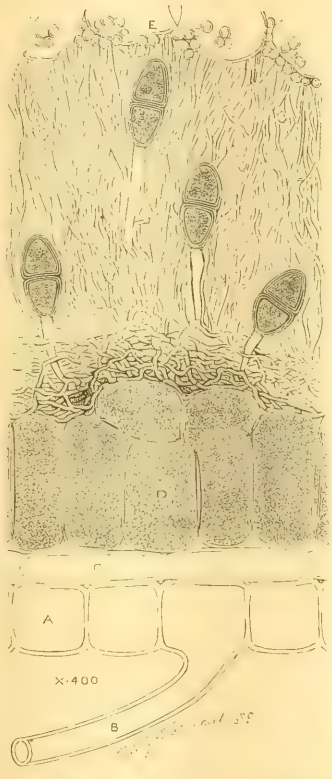



Fig. 53.—Puccinia graminis, Pers., growing in company with Ustilago carbo, Tul., within the membranes of the fruit or grain of oats.

be, and potentially is, hereditary. It also shows that the intervention of a Barberry bush is unnecessary; in fact, in this district there are no Barberry bushes, and if there were it would not tell in favour of a connection between Barberry blight and corn mildew, for there is always an abundance of Uredo on the corn before Barberry bushes ever come into leaf. Professor Farlow has indicated that a similar discrepancy occurs in America with certain species of fungi allied to Corn Mildew, which have been suppositiously connected with other species of fungi allied to the fungus of Barberry blight.

In the district where I write—Dunstable—mildew-infested straw is always on the fields: it is thrown on with the dung at all seasons, either for corn, Clover, Turnips, or other crops. The heaps of mildewed straw and dung are always by the hedge-sides, and it is from these places by the hedge-sides, where the dung has lain, that mildew on the corn is always seen at its worst. It does not extend here "like the tail of a comet" from a Barberry bush, but from the dung heaps adjoining bushes of all sorts except the Barberry. We have no Barberries.

It would appear that the Rev. J. E. Vize, of Forden, Welshpool, was the first person to see, but not recognise, Puccinia graminis, Pers., growing within the membranes of the grain in corn, for one of Mr. Vize's preparations sent to me before my engraving or observations were made, shows this growth. Mr. Vize, however, had labelled his slide "Diplodia,"—he thought the brown septate spores within the grain belonged to this genus. As fungi belonging to "Diplodia" are found everywhere, and are, moreover, perhaps, the most contemptible of all so-called "species" of fungi, I placed the slide aside unheeded with other species of "Diplodia." It was not till lately that I recognised the true nature of the growth seen by Mr. Vize, and on writing to that gentleman informing him of the fact of his "Diplodia" being really Puccinia graminis; he replied that my information was new to him, and that he had overlooked the value of his own materials.

The publication of the illustration has been in part delayed from hesitation, and from my uncertainty as to the correct number and nature of the membranes in the grain of corn. I have, in fact, been unable to trust my own eyes. The Rev. George Henslow has published an elaborate engraving of the grain, in which five membranes or skins are illustrated and described; whilst Professor A. H. Church, in his "Science Handbook" for the Food Collection now at Bethnal Green Museum, says there are six, and adds (p. 61), "the outermost coat of the above-named six coats is the least valuable." Four of the others, I fear, are almost valueless, for up to the present time I have only been able to distinctly see two coats, and with much trepidation I have so illustrated the structure in fig. 53, at A and B. It is no light matter to differ from three famous Professors all at once—with Professor De Bary and his Barberry bushes, and the two genial Professors, Henslow and Church, and their five and six "skins." Besides, the ladies of the Bread Reform League go in strongly for the "five skins" (they ignore the sixth), which they say go to form bones and teeth, and nourish the brain and nerves." The "five skins" seem to be at the very foundation of the "Bread League" department of the "Ladies' Sanitary Association." It is hard to be unwillingly compelled to deprive these good-meaning ladies of three of their valuable "skins," and my position with the esteemed ladies over this matter is likely to be worse than with the Professors, for converts to any dubious belief always stick more tenaciously to possible errors than do the original teachers. I acknowledge that I may be wrong in my estimate of the potency of Barberry bushes, as well as wrong over the matter of the five (or six) skins of the grain in corn, but the above notes reflect my thoughts. *W. G. Smith, Dunstable.*

## THE POTATO.

It is the universal custom about here amongst cottagers when they dig up their Potatos to divide them into three parts, according to their quality. The best they eat, the second-best they give to the pigs, and the worst they save for seed. Suicidal policy indeed. Mr. Terry, the author of the *A B C of Potato Culture*, and one who has spent the greater part of his life in the business, walks over his 26 acres while the men are digging, and selects the very best at once for seed, and so he is always improving the stock.

The next thing I would mention is about banking-up. Now, this custom is, I think, all but universal in England. Most people think that it is necessary to a crop, but the reason does not clearly appear. If it is thought that the Potatos will grow out of the ground, then plant them a little deeper, taking care that the soil is well prepared before planting. There are many advantages to be gained by letting the ground remain level (or nearly so), especially during a dry season like that we have had lately. It is well known to gardeners that when the weather is dry it is a very good plan to water with the hoe—*i.e.*, continually stir the surface, and the sun will then draw the moisture upwards to the roots of the plants. Mr. Terry has experimented on the same soil for years and years, and he always gets the best crop from the level surface. There is also considerable judgment

required in our changeable climate as to the time when to plant late Potatos. "To secure the largest yield Potatos demand moisture and coolness during the last month of their growth;" therefore do not plant too soon. I was accidentally hindered this summer from planting my late Potatos about a month; the result is that my Potatos are looking green and flourishing, whilst my neighbours' are as dry as hay.

Now for a little more about the seed. I suppose most people are pleased to see a dish of Potatos served up mealy and about one size. This can be done by careful selection of the seed, and cutting the pieces to one eye. When you get to the top and find several eyes close together, remove all the eyes save one. Take care to cut nice fleshy pieces to each eye, and let each eye have as long a piece of flesh as is possible, and let each piece be about the same size. *Agnes.*

## Florists' Flowers.

### SEASONABLE NOTES.

THE PELARGONIUM.—How are the Pelargoniums doing this year? was a question I put to one of the growers for Covent Garden Market at midsummer. His answer was, "We are growing very few now, and think of giving them up altogether." Why? "Because I sent up a quantity of as good plants as ever were grown, and they brought me in 9*s.* per dozen, while Paris Daisies, that cost considerably less to grow, were sold for 18*s.* per dozen." That is a grower's experience of Covent Garden Market. No doubt the Paris Daisies last much longer as window plants in London. Pelargoniums do not stand well; and Fuchsia flowers drop off in a few days, owing to the change of treatment. The Pelargonium will always be valued as a greenhouse plant for decorative purposes; but like other flowers it has to pass through different degrees of popularity. Our earliest flowering plants are now ready to be shaken out of their pots and to be repotted in sizes smaller. The best time to repot is when the buds have fairly started to grow. The later flowering plants have just been cut down, and will be repotted later; the one lot is a month in advance of the other. If any increase of stock is required, cuttings will root freely if planted in sandy soil, and the pots are placed on a shelf near the glass in a greenhouse. They die off in a hotbed. The instant green-fly appears fumigate with tobacco smoke to destroy them.

### THE CHRYSANTHEMUM.

Those who want large handsome exhibition blooms must now give their plants daily attention. The blooms must be "set," to use the term of those who grow for exhibition. During the month of August, if the points of the shoots are examined, the tiny flower-buds will be seen with shoots starting from the leaves close to the buds. These incipient shoots must be carefully removed with the finger and thumb; if they are not removed, the buds will not increase in size, and will ultimately die out. Remove the shoots as soon as they can be broken over with one finger, and the buds will grow up to produce those beautiful blooms seen at exhibitions. Leave the shoots alone, and three of them will take the lead, producing each a bloom, though inferior in size to the single specimen. Greenfly have been troublesome as usual, clustering round the points of the young shoots, and checking the development of leaf and bud. They are easily destroyed by dusting with tobacco-powder. We find a penny tin pepper-box the most useful article wherewith to apply the powder. As soon as the buds are set, give regular supplies of weak liquid manure, and be careful not to let any of the plants suffer for lack of water. They must not be crowded together, but should have plenty of space to develope themselves. Specimen plants ought now to be placed where they can get all the light and air possible. As time can be spared, the growths must be tied out, and regulated to form good specimens. Exhibitors do not need to be told that the plants must be trained to one stem, and they must also be of large size—the larger the better, if the shoots are well furnished with healthy green leaves and the flowers are of large size. In training the growths avoid all twisting and twining of them to get the specimens dwarf. If a large flowered or pompon specimen is trained down to an unnaturally dwarf habit, even if it is moderately healthy, it is not a beautiful object, but the reverse. Mildew has not yet appeared, but it will do so; at least I have had to fight against its insidious advances every year for twenty-five years, and do not expect any exceptions now. Dust with flowers of sulphur as soon as it is observed.

### THE CINERARIA.

The plants, whether propagated from offsets or raised from seeds, are now growing freely, and also require attention. They do very well in cold frames up to the end of September, but after that time it is better to place them in a heated pit or greenhouse. They must not be crowded closely together, as this treatment has the effect of crippling the plants, checking their development, and promoting the growth of undersized blooms and trusses. It is better to see one good large well-trained specimen than a dozen badly grown small ones. During the present hot and dry weather they have been kept free from thrips and green fly by frequent fumigations of tobacco-smoke. Mildew has not yet appeared, but it may do so; there is nothing better than dry flowers of sulphur for its destruction. The powder should be puffed under the leaves with a sulphurator. As the plants make very vigorous growth at this season, they should be repotted before the roots become too much matted together. I have before stated how the potting soil ought to be prepared; but as this is the season for repotting most of the soft-wooded green house plants, such as Pelargoniums, Calceolarias, &c., I may again state that the same compost may be used for the whole of them, viz. good loam, a fourth part leaf-mould, as much decayed manure, some crushed bones, and a small portion of sand and charcoal broken into small pieces, but not powdered. Avoid the use of "vegetable ivory" as a substitute for bone-meal or crushed bones. The plants cannot have too much air, indeed the lights may be removed entirely if possible when there is no wind; high winds are injurious to the plants, and they ought not to be exposed to them during any period of their growth.

### CALCEOLARIAS.

These require very much the same treatment as the Cineraria. Most people purchase a packet of seeds, and from that their stock of plants for the season is raised. By this time the plants will be well up, and in most cases they have been pricked off into pans or pots. At this season they succeed best in frames facing to the north. Even in a small state, before they are potted off, greenfly gets on to the under-sides of the leaves, and cripples them sadly if it is not removed. Any exceptionally good varieties must be propagated by cuttings. They can be taken off frequently with a small portion of roots attached, and be potted in small pots singly. They will soon form fresh roots if they are placed in close hand-lights behind a north wall. If no roots are attached to them when taken off, they will still form roots though not so quickly as those with small portions attached. Sandy soil ought to be used for potting them in. When fairly rooted, they ought to be repotted in larger pots in the ordinary compost used for seedlings. *J. Douglas.*

## Home Correspondence.

**Phormium tenax, or New Zealand Flax.**—It is satisfactory to learn that this useful plant and its varieties prove to be hardy in the Royal Gardens at Kew, and also in other parts of England. I have a small plantation of it 60 feet long by 10 feet wide, upon which there are 166 spikes of bloom, and seed-pods from 7 to 10 feet high. It is a remarkable plant, and its practical utility induces me to state that no garden should be without it if sufficient room can be spared to grow it. It does not seem to be difficult as to soil, but it produces the largest leaves where it gets more moisture. The leaves being broad, flat, and long, all elements of quantity, are easily stripped into bands which are most useful for tying purposes. The quantity of resin they contain makes them stronger and more lasting than matting, raffia, Cuba bast, or any of those materials generally used. The plant is becoming very common and plentiful, so that it is easily obtained, and once planted may remain in the same place for years. Those who can recollect the first grand International Exhibition of 1851, may also call to mind the specimens of manufacture from its fibre exhibited there. My object is simply to point out to the gardeners of England how useful it might be to them. *C. B. S., Jersey.*

**Diseases of Potatos and Vines.**—Sometimes we have printed extracts from newspapers to show the lamentable want of knowledge which exists on the part of some writers who take upon themselves to instruct others. One is inclined to deal leniently with ordinary press writers, for they cannot be expected to possess special agricultural or horticultural knowledge. When, however, ignorant and misleading statements are published in papers whose specialty is supposed to be the teaching of things correctly the case is very different. The following two extracts are taken from recent issues of agricultural and horticultural papers:—

"*Potato Disease.*—It is well known that the disease consists of animalcula (*sic*), which first attacks the leaves, and then, as they multiply in myriads, they fall, and find their way to the tubers, where they settle (!), and destroy the Potatos. But how they come is yet a mystery, and how they can be destroyed is yet to be discovered."

"*Disease of Vines.*—The black specks in the leaves are the result of the decay of the fungus, which, when in growth, is a bright orange colour; it is quite invisible to the naked eye, and even through a small pocket magnifier, but is painfully apparent through a powerful microscope."

The accomplished teacher above quoted, wisely abstains from mentioning the name of the "invisible" "bright orange" fungus (probably a few grains of flowers of sulphur) found by him to be "painfully apparent" on Vines with the aid of his "powerful microscope." *X.*

**Peculiarities of the Orobanche.**—It seems almost incredible that a tiny rootlet of the Gorse, $\frac{3}{10}$ths of an inch in diameter, would be sufficient to provide nourishment for a parasite of over 6 lb. weight. This is, nevertheless, true, as I this season counted no less than twelve plants of Orobanche major, each fully ½ lb. weight, growing on a single root of our common Gorse rather less than $\frac{3}{10}$ths of an inch in diameter. The questions that naturally suggest themselves are these:—How does the Orobanche subsist? and is the Gorse plant exhausted by its parasitic friends? To the latter question I would answer No; at least, an examination of many specimens did not reveal any exhaustion of the plants, nor did the foliage appear in the least sickly. The former question I can only answer as follows:—As the Orobanche never appears above-ground until of a flowering age—which is never less than three years, but usually more—the amount of nourishment taken annually from the Gorse, and concentrated in the tuber of the Orobanche, will not be nearly so much as was all drawn in one season, and consequent on which may, no doubt, be attributed the perfectly healthy appearance of the Gorse. The Gorse root is usually swollen at the point of juncture with the Orobanche, but outwards from that point it dies off—no doubt from the circulation of the sap being arrested by the parasitic attachment. As the Orobanche is seldom found growing on the Gorse root at a less depth than 5 inches, the question may be asked, How do the seeds get down to this depth in the ground? Well, my explanation is this, that as the seeds are very minute (resembling those of the Poppy) and hard, and as the soil in which I have always found the Orobanche is rather rough gravel, it must be that a few of the very numerously produced seeds are washed down to that depth through the loose stony soil by heavy rains: otherwise I cannot explain it. The peculiarly constructed flowers, which contain a great quantity of sweet nectar, similar in taste and smell to that of the Clover, are visited by at least one insect, as I saw the red-tailed humble-bee visit many of the flowers on several plants in succession, and without fertilising them. The bee did not in any case visit the flowers directly in front, but crept along either of the two side channels of the lip, and in this way it was hardly possible for them to come in contact with either the stigma or stamens. I believe the flowers are fertilised in the bud state, as in specimens which had been prevented from sending up their stems by coming in contact with large flat stones I noticed that many of the ovaries had swollen, and contained what appeared to be good seed. To test the matter still further, I transferred specimens to the house before any of the flowers had opened; and, although I will not positively state that house-flies did not visit the flowers, still I never saw any, and certainly do not

think they did, and for all this seed-bearing capsules were produced. Cross-fertilisation may, however, take place, as in not a few plants the stigma protrudes beyond the calyx previous to the flower expanding, and as the flowering period extends, in good seasons, over a period of four weeks, it is not at all unlikely that small insects may deposit the pollen from open flowers on the stigma of such as are still closed. *A. D. Webster.*

**Muscat Grapes.**—The Grapes at Rangemore are certainly very good all round this year, but language fails me entirely to describe a long span-roof house full of Muscat of Alexandria to be seen there. I have seen a good many houses of Muscats during these last twenty years, but this is the most remarkble I have ever looked on—the even crop, the magnificent bunches, and the large berries, all go to show that the fine touch from the hand of a master of the art has been there. They are just now fast putting on the lovely amber colour, and any of our friends going that way would do well, if they have a little time at their disposal, to go and see them. For my own part, I would not mind a pilgrimage of twenty miles on foot to see such a handsome house of Muscats. *X.*

**"Exhibition Peas."**—I forward you a small hamper containing a few pods of the leading sorts of Peas, including Duke of Albany, a kind not mentioned by "R. D." in the *Gardiners' Chronicle* of last week, where a list of exhibition Peas is given. Duke of Albany being of a deeper green than Telephone, may be fairly called the better Pea; in other respects they are much alike; if any difference, I consider The Duke to yield a somewhat larger crop. John Ball and Robert Fenn are also A1 kinds. *W. C. H.* [The samples of the Peas sent are excellent, and are a very good selection of the leading varieties. The Duke of Albany, which is a green wrinkled selection from Telegraph, may be considered superior to Telephone, which is a white selection from the same; but there is really little distinction between the three. ED.]

**Bedding Viola.**—I send you some flowers of my General Gordon Viola, will you be kind enough to give your opinion of it through your paper? For working in lines or masses, and free bloomer and habit, and blooming through the whole summer, I consider it excellent. The plants are covered with flowers, from ten to twenty blooms each, or forty-eight to the square foot, over the bed. The bed was planted last September, and received no water until last Monday. It will make a fine row of white flowers behind the blue Lobelia, it being so dwarf. Height of plants 3 to 4 inches, acrosss 8 to 10 inches. *W. Jones.* [From the specimens sent, this appears to be a very good variety, with large flowers of good substance, clear white, fragrant, and one which, if it possess good habit and constitution, may be highly recommended. ED.]

**The Broad-leaved Helleborine (Epipactis latifolia).**—In not a few of our woods and downs may now be found in flower the above stately though rather inconspicuous flowered representative of the Orchid family—a plant which, both as regards distribution and peculiarity of appearing in quantity in certain localities where it was not before known, is well worthy of more than a passing note. That the seed of this plant may lie dormant in the soil for at least upwards of a dozen years, or until circumstances favour its germinating, I am now almost convinced; but although, on several previous occasions, similar cases to the one below recorded had come under my notice, I refrained from mentioning them, having no direct proof that such really was the case. Some days ago, however, I was not a little pleasantly surprised to find in one of our woods, that had been thinned four years ago, numerous specimens of the above Orchid in full flower, as for a number of years previous to thinning of the wood I had occasion to visit it frequently, and would certainly have noticed this particular plant had it been present. The seeds must in this case have lain dormant for at least a dozen years, as the wood, previous to being thinned, was so thick that all under-vegetation was killed outright; and as no specimens of the plant occur in the neighbouring woods, their appearance could hardly be attributed to the dissemination of seeds the same space in which the wood was thinned. (It may be here noted that the Epipactis requires at least four years to arrive at a flowering stage from the time the seeds are sown.) A similar instance, but more conclusive, I have noted in another native Orchid—Habenaria bifolia—in which both seeds and tuber may lie dormant for several years under certain conditions—a fact which I believe has been noted by several others, including Gilbert White. Another peculiarity of Epipactis latifolia is its singular distribution, for, unlike the generality of our native Orchids, it is by no means equally spread over a wood, but occurs in patches here and there, a fence or ditch often marking its boundary. It is also frequent in one wood, whereas in the adjoining, although only divided by a road, and similar both as regards soil and situation, not a specimen is to be found. From observations made for some time past I am convinced either that this Epipactis can, under certain conditions, increase underground until it becomes of a flowering age, or that the root-stock is in some cases creeping, and new eyes formed at the extremity of particular rootlets, as is the case in the Bird's-nest Orchid (Neottia nidus-avis). The latter is, however, I may remark, quite different from all my observations, but for all this it may be true in particular cases. Three distinct forms of this plant are to be seen in the woods of Carnarvonshire, the handsomest of which is pure white or similar in colour to the Butterfly Habenaria (H. bifolia). This I have found on several occasions, but never plentifully. Another has the interior of the lip quite black or dark brown; and the third is of a pinky-green throughout. Some specimens have the leaves lanceolate, others oval. They are, however, but forms, as gradations passing from the one to the other are, where the plants are growing in quantity, not uncommon. *A. D. Webster.*

**An Extraordinary Cereus.**—In times when, as now, the cultivation of greenhouse plants is confined almost exclusively to such as are of the easiest cultivation, it seems strange that the summer-flowering kinds of Cactus, Cereus, are all but wholly neglected. In addition to their being the easiest of all plants to keep in a healthy condition with little attention, their flowers are amongst the most gorgeous of all cultivated plants. A specimen of E. speciosissimus, or some nearly allied sort, recently in flower in the conservatory at Temple Newsome, acted as a reminder of the mistake that is made in discarding these grand old inhabitants of the greenhouse. The plant in question is planted out in the central bed immediately under the ridge of the house, which is some 25 feet high. Its thick stem, trained up one of the pillars that support the roof, denotes its being old, and having long occupied its present position. The stem is quite bare nearly up to the roof, where it branches out so as to form a dense massive head of drooping shoots, that hang down some 7 or 8 feet, by nearly half as much in diameter, and were half hidden by their gorgeous flowers, scores of which, as large as tea-saucers, presented a combination of intense crimson and violet colour such as few, if any, other class of plants afford. Although the flowers, as well known, are short-lived, still, where the plants are large, they keep on giving a succession for several weeks. *X.*

**Venus' Fly-trap.**—I believe Dionæa Muscipula is not considered hardy in this country. A well-known botanist, when going over our experimental garden, said that, considering the climate it came from, he was surprised that it had stood several winters. I first planted it in a shady part of our wood; it lived there, but did not thrive, so in the spring of 1882 I moved it to the side of a pond in the sun, and put sphagnum round it; the leaves have now come up stronger, and seem quite healthy. *George F. Wilson, Heatherbank, Weybridge Heath.*

**The Wholesale Destruction of Caterpillars.**—I hoped that I had made my meaning clear to readers of the *Gardeners' Chronicle*, and that all who read my note would understand that it was the wholesale destruction of those caterpillars which infest our gardens, destroying fruits, vegetables, and flowers I advocated, but I find from "Jussieuensis'" note in the *Gardeners' Chronicle* of August 15 that this was not the case, and I hasten to say that I would by no means advise any one to scrape the trunks of their Oak trees in order to remove the eggs of the lovely Purple Emperor, or to wash their Nettles, unless they intended (like the old Scotch gardener) to make them do service as spring greens: I simply intended to advocate (as I do still) the destruction of all grubs and insects which infest our cultivated gardens. I believe that, as a rule, insects deposit their eggs on those plants and trees whose leaves and produce are most likely to afford the right food for their brood, so that when we destroy garden pests, we are doing good, and need not entertain the least alarm that we should injure harmless members of the insect world, for the latter species do not affect our cultivated grounds, and if your Uckfield correspondent had seen as I did two summers ago the wholesale destruction of fruit and roots by various grubs in some Hampshire gardens, he would join in the cry of Kill, and no mercy, at once. *Helen Watney, Wimbledon.*

**The Refractory Freesia.**—Many and various have been the complaints of failures to grow this lovely and unique Cape bulb. Having personally experienced partial failures I could not restrain a start and exclamation of surprise on seeing a bed one mass of flower in the open air in the gardens of Tresco Abbey. The bulbs, which are now flowering so freely, were planted on April 18 last; they were simply inserted in a raised bed in the natural soil of the garden, assisted by some cow manure and leaf soil. Other similar beds have been formed, and, wind and weather permitting, there ought to be a gay show at Christmas-tide. What is possible in Scilly in the open air ought to be possible on the mainland in frames. The beds at Tresco are so formed that frames can be put over them, if need be. *C. A. M. Carmichael, August 15.*

**The Fertilisation of Figs: Stones in Trees.**—It is a fact well known to most readers of the *Gardeners' Chronicle* and other horticultural papers that trees of the Orange, Mango, and Fig ripen heavy crops of excellent fruit annually in Malta, but it is not so well known that in order to secure a good set of Figs—even in the warm climate of Malta—the natives with that end in view grow the male or wild Fig among trees of the edible variety, asserting that if they did not do so the trees would not yield much more than half a crop of fruit. Then there is a tree—a species of the Orange, I think—which the Maltese call the Zinzilli, or stone fruit tree, the latter name resulting from the fact—which is a very interesting one botanically, and concerning which information is sought—that unless stones, say, the size of brickbats, are placed among the branches in spring it will not bear fruit. The correctness of this statement is vouched for by Colonel Crichton Maitland, who had resided in Malta for several years, and who, while visiting at the Castle last spring, kindly wrote to a military friend of long residence in that island asking him to send me specimens of the trees indicated above, and this gentleman, in generously complying with Colonel Crichton Maitland's request, communicated (February 26) the following interesting information respecting the male Fig and Zinzilli tree. Having said that he would send me a few rooted suckers which, owing to the very inclement season which they had had, and the beautiful weather which they were then experiencing would soon begin to bud, he proceeds:—"The fruit of the male Fig when rotten or decayed produces or attracts small black flies, which impregnate the female or edible Fig, and this accounts for the large crops we have. The male Fig, of course, should not be detached until ripe, and then it should be hung between the branches of the edible Fig tree. Now about the Zinzilli having fruit by the aid of stones inserted between the branches; all I can tell you is—it is a fact! but why or wherefore no expert or botanical scientist has ever, I believe, been able to say. A very clever Italian botanist brought over by Hoar some years since, told me that he did not believe it had ever been discovered, and that Colonel Murray's theory might possibly be the one sought for—viz., that certain insects in this climate (Malta) or region sheltered under the stones, and did the necessary process of impregnating the fruit blossoms at night; but who can tell? I have searched under the stones and found—nothing!" The fact that no insects have been found under the stones tends to weaken Colonel Murray's theory, otherwise one might suppose the fact of stones being conservators of moisture, as in some way attracting the insects, which in their passage to and from the stones impregnated the flowers. Then, am I right, in assuming that an atmospheric influence exists between the individual stones as inserted in the branches of the Zinzilli?—and if so, has the current thus produced anything to do in the process of fructification

by rendering the blossom and pollen more fructiferous, and afterwards disseminating the latter? I herewith enclose a small branch of the Zinzilli, which, with several others, has sprung from a sucker about an inch in diameter, and which, I trust, will enable you to name it botanically [apparently the common Jujube, Zizyphus Jujuba]; and also, if you would kindly say in what way the placing of the stones amongst the branches of the Zinzilli tree is instrumental in securing a crop of fruit, you would greatly oblige many of your readers, particularly those who either reside, or have resided, in Malta. In conclusion, I may remark that our plants are growing in 6-inch pots, consequently the specimens sent of leaf and branch are much below their ordinary size. The plants flowered in June last, and by the aid of a camel's-hair brush I set a few, which, however, after attaining to the size of a full-grown Solanum berry, ovate-obtuse in shape, ceased to swell, and ultimately dropped off. *H. W. Ward, Longford Castle.*

**The Fragrant Orchid (Orchis or Gymnadenia conopsea).**—Ireland would seem to be the headquarters of this beautiful and deliciously fragrant Orchid, for some specimens sent me last week by Mr. Ramsbottom from his estate (Moorrock, King's Co.) there are certainly by far the finest I have yet seen. One plant had a dense cylindrical flower-spike 1⅜ inch in length, and on which I counted no less than 142 flowers; another, rather smaller, bore 92 flowers. Accompanying these was a remarkable specimen of the rare and beautiful white-flowered form of this Orchid with a spike fully 6 inches in length of sweetly scented paper-white flowers. Considering how readily this Orchid is cultivated, and how pretty and fragrant the flowers are, one can only wonder that it is so seldom seen gracing a rather dry shady nook in our alpine gardens. *A. D. Webster.*

**Rhinanthus major.**—In some cultivated cornfields in this district—Dunstable—Rhinanthus major is an exhaustive parasite of corn, chiefly, as far as my observation goes, of Wheat. It grows as a greatly branched plant, 2 feet or more high. I have a plant before me bearing 107 capsules, although many have now fallen off. I am inclined to agree with the botanists who consider this plant to be a large and robust growing variety of R. Crista-galli. *W. G. S.*

**Bedding-out Cinerarias.**—When, some weeks ago, I tried to explain to your readers the beauty of the beds of Cinerarias in the Portuguese capital, I thought I was writing of a floral device untried in England. But no such luck; perhaps "There is nothing new under the sun" was trite before the golden days of King Solomon. At least we have never seen an age since when silver "was nothing accounted." The veterans of your legion of readers will remember a Cineraria, called The King, which was much cultivated when a novelty. Mr. Vallance, the experienced overseer of the Tresco Abbey Gardens, tells me that he bedded out this Cineraria in 1842 in the flower garden of Stackpole Court, in Pembrokeshire, and that for six weeks it was a thing admired of all. What can be done at Stackpole can *a fortissimo* be done at Mount Edgcumbe, Tregothnan, and other Cornish homes: indeed, perchance has been done. *C. A. M. C.*

**Cattleya crispa.**—In looking over the *Gardeners' Chronicle* of Saturday, August 15, page 214, I met with some remarks respecting Cattleya crispa, or Lælia crispa, from the pen of Professor Reichenbach, in which I feel somewhat interrested, more especially as I have a very fine specimen of the above-mentioned Cattleya bearing seven splendid flower-spikes, carrying buds respectively—

| | | | |
|---|---|---|---|
| 2 | spikes and | 4 | buds |
| 1 | spike and | 7 | ,, |
| 3 | spikes and | 6 | ,, |
| 1 | spike and | 5 | ,, |
| Total | .. | .. | |

At the same time it is pushing upwards of twenty new growths. *John Hawksly.*

**Nuts.**—Having lately made considerable journeys through the beautiful lanes of Hants and parts of Surrey and Sussex, I have been struck with the extraordinary growth of Hazel nuts in the hedges, and a larger harvest I never remember since the summer of 1826, which was an exceptionally hot one. The spring of this year was an unusually mild one. I merely conjecture that owing to this the catkims escaped from frost, and hence produced such a marvellous quantity of fruit. Filbert trees appeared to be equally full. The Filbert has a bad reputation as a promoter of indigestion, but very often it is the adjunct in the bad port or sherry which causes this, not the nut, although I admit the latter is oily and requires care. Of course if people eat such things like so many Currants they deserve to get dyspepsia, but in moderation and with good wine, also in moderation, no harm will follow. *John Colebrooke.*

**Dodder.**—There are two large fields close by here, purporting to be fields of Clover, they are only separated by a grass-grown narrow farmer's road, and they were both sown at the same time, early in April. One field is full of well grown Clover, and has for a long time been supporting a large flock of sheep. The other field, instead of being green, is red. It is a field of Dodder, with a very few patches indeed of dwindled and starved Clover. In places where the Clover and its parasite have alike perished sow-thistles and other weeds are growing. No sheep have been, or could be, supported on the Dodder infested Clover and weeds. Although the bad field is actually red all over with the Dodder I have been unable to detect a single plant of Dodder in the adjoining good field. The seeds were, of course, bought by different farmers of different dealers. One would think the bad sample must have had as much Dodder as Clover in it—perhaps more. *W. G. S., Dunstable.*

# Reports of Societies.

## EASTBOURNE: August 12.

THE annual exhibition of this Society was held in the beautiful grounds of Compton Place, the spot chosen being the vicinity of the mansion and pleasure-grounds, the latter being thrown open to all visitors to the show. The liberality and kind consideration of Mr. and Lady F. Howard, in thus furthering the aims and objects of the Society cannot be too freely acknowledged. It might here be stated that this is a typical flower show; no exterior means are resorted to whereby to draw a larger company than can be got together by floriculture and horticulture alone. This commends itself to all real lovers of such, and we think that the committee of this Society, under the guidance of Mr. Thomas Larkin, whose practical experience is of great value, are to be congratulated in having thus far been able to hold their ground without extraneous aid in any way. The exhibition on this occasion well maintained its former high standard of excellence, all departments being well represented throughout the show.

In the class for eight stove and greenhouse plants, Mr. Gilbert, nurseryman, Hastings, was well 1st with excellent examples of cultivation, his best plants being a grand specimen of Erica æmula, Statice Gilbertii, Dipladenia amabilis, Stephanotis floribunda, and Allamanda nobilis, being equally fine; a finely coloured Kalosanthes coccinea superba was also in this collection. Exhibitors of flowering plants would do well to imitate Mr. Gilbert's system of cultivation, and not aim so much at immense specimens as at finely-flowered and healthy plants. Mr. Henry James, of Norwood, was 2d in this class, having good plants of Statice imbricata and Rondeletia speciosa; Mr. Tudgey, of Waltham Cross, followed, with capital examples of Ixora Williamsii and Allamanda nobilis.

In the class for six flowering specimens the competition lay between gentlemen's gardeners only. Mr. Portnell, gr. to Sir A. Lamb, Beaufort Park, near Hastings, was 1st, with finely cultivated and floriferous plants, among others, of Erica cerinthoides coronata, Allamanda grandiflora, Bougainvillea glabra, and Statice Gilbertii; Mr. Jupp, gr. to G. Boulton, Esq., Torfield, Eastbourne, being 2d, with a good Bougainvillea, and the same of Stephanotis, and the comparatively new Ixora Westii; an excellent 3d lot came from Mr. Gore, gr. to Captain Taylor, Glenleigh, Hastings.

For eight exotic Ferns, Mr. C. Rann, gr. to J. Warren, Esq., Handcross Park, Crawley, won premier honours, having grand examples of Gleichenia rupestris, Davallia Mooreana, and Dicksonia antarctica, with a 10 feet stem; Mr. Gilbert being 2d—Adiantum farleyense in his collection being a fine plant; Mr. James 3d.

For six exotic Ferns, Mr. Jupp was placed 1st; and Mr. Clements, gr. to Mrs. Usill, Fulbourne Lodge, 2d.

In the class for ornamental foliage plants Mr. Rann was again 1st, with immense bushes of Croton interruptus and C. Warreni, both grand in colour; Cycas revoluta and Gleichenia Mendelii were also fine specimens. Mr. Tudgey followed, with Cycas revoluta and C. circinalis, and a fine plant of Pritchardia pacifica.

For six ornamental foliage plants Mr. Portnell was placed 1st, with a clean well grown lot of plants, prominent among which were Croton interruptus and C. Queen Victoria, with a good Cycas revoluta. Mr. Jupp followed with an excellent six.

The class for six Ericas brought good competition, Mr. Gilbert being 1st, with a fresh and healthy set of plants; Mr. Portnell and Mr. Tudgey followed.

A class devoted to groups of plants arranged for effect brought out a capital competition, evidently being looked upon with favour, and that rightly too, by the exhibitors. Mr. H. James, who is always hard to beat, was placed 1st; a young grower and fresh exhibitor in the person of Mr. Fuller, gr. to J. White, Esq., St. Leonard's Road, being 2d, with a fresh well grown lot of suitable subjects; Mr. Martin, gr. to J. G. Langham, Esq., West Down, was awarded 3d; extra prizes being allotted to Mr. J. Gore and Mr. Jupp.

For six Fuchsias Mr. Portnell was awarded the 1st prize, with a good lot of plants; Mr. Wise, gr. to Major G. C. Holroyd, The Links, Meads, being 2d; and Mr. Liggs 3d.

Fuchsias are always well shown along the South Coast, and this was no exception to the rule. Zonal Pelargoniums are likewise exceedingly well done, as may be imagined when good growers like Mr. Gilbert can only secure a 3d prize. Mr. Portnell was placed 1st, and Mr. Wise 2d in this class.

Begonias were well represented by two collections from Mr. Costick, gr. to R. Himsoll, Esq., Old Orchard; and Mr. Tugwell, gr. to J. Swift, Esq., Southfields.

In the class for six Coleus Mr. Fuller and Mr. E. Hemsley, gr. to A. Doré, Esq., Arundel Terrace, were such close competitors that the judges awarded them each equal 1st prizes.

Specimens of flowering and foliage plants were also good, Mr. Rann securing 1st honours with a fine Croton in the latter class.

Decorations for the dinner-table (flowers and fruit combined) produced excellent competition, and were a source of great attraction throughout the afternoon. The taste displayed in the winning arrangements evinced considerable skill and forethought on the part of the ladies by whom they were set up To Miss Sutton, of South Street, was awarded the 1st prize for a very light and elegant arrangement; Miss A. M. Skinner taking 2d; and Mrs. G. H. Cork taking 3d honours. Taking into consideration the long period of drought, all the various classes for hardy cut flowers were exceedingly well represented throughout.

For thirty-six cut Roses, Messrs. F. Woollard & Son, The Cooksbridge Nurseries, was placed 1st; Mr. G. W. Piper, of Uckfield and Piltdown Nurseries, being 2d; and Mr. Slaughter (an amateur), of Steyning, taking 3d place. This was a good class. For twenty-four cut Roses Mr. Simmonds, gr. to Rev. R. C. Hales, secured the 1st position; Mr. Slaughter in this case being 2d. A good display of cut Roses (not for competition) were staged by Mr. Knight, of Hailsham.

Dahlias were well represented in the three winning collections of twelve each, Mr. Simmonds taking 1st, and Mr. W. Gower the 2d prize

Collections of annuals, Phlox Drummondi, and herbaceous cut flowers were in each respective class shown in good condition.

Only one competitor entered the lists for British wild flowers, his productions and correct nomenclature are so well known, both locally and in London, he having won premier honours at the Regent's Park shows and elsewhere. Mr. M. K. Dixon, gr. to Sir S. M. Wilson, Serles, Uckfield, again on this occasion produced such examples of wild flowers indigenous to this country as to reflect great credit on his perseverance in their collection.

Exotic cut flowers were shown of excellent quality by Mr. Portnell, who was 1st; and also by Mr. J. Blake, gr. to F. C. S. Roper, Esq., Polgate, and Mr. Jupp, who were 2d and 3d respectively.

FRUIT.—The classes provided for fruit were well represented throughout with but one or two exceptions, and the quality first-rate, as is the invariable rule at this and other Sussex exhibitions during the season. Mr. J. Gore was the only exhibitor in the class specially provided for a collection of ten varieties, the number of dishes required being no doubt more than many growers could produce in a satisfactory manner, The same exhibitor ook 1st in the class for nine kinds, also being followed tn this case by Mr. J. Blake.

A capital representative collection of fruit and vegetables was staged (not for competition) by Mr. F. D. Dann, of Pevensey.

For Pine-apples the 1st prize was awarded to Mr. J. Hopkins, gr. to R. Thornton, Esq., High Cross, Framfield, he being again in the premier position with three bunches of black Grapes; Mr. A. McBean, gr. to G. P. Wragg, Esq., Upperton, following in this case.

For white Grapes, Mr. Foxley of Witham Cottage, was 1st; Mr. Chatfield, gr. to T. Holman, Esq, East Hoathly, was 2d.

The classes provided for cottagers produced a large competition, both fruits, vegetables, plants, and cut flowers being of a high order of merit. *J. H.*

## TAUNTON DEAN HORTICULTURAL: August 13.

THE show in the Vivery Park on this occasion was of a similar character to those that have preceded it in recent years, so far as the excellence of the productions went; but in one or two of the leading departments, including stove and greenhouse, flowering and fine-leaved plants, it was thinner than heretofore.

STOVE AND GREENHOUSE PLANTS.

In the open class of twelve, in bloom, Mr. Lock,

gr. to P. W. Cleaver, Esq., Crediton, was easily 1st with a grand dozen, large and finely flowered; they consisted of Lapagerias alba and rosea, covered with their showy flowers; Ixora Prince of Orange and I. Duffii, each some 4½ feet through, and full of bloom; Dipladenia amabilis, in excellent order; Stephanotis floribunda, Eucharis amazonica, Allamanda Hendersoni, and several Heaths; 2d, Mr. Cypher, with a smaller set of plants than we have usually seen him exhibit at Taunton. With six stove and greenhouse plants the order was reversed, Mr. Cypher taking 1st and Mr. Lock 2d, the winning collection were amongst the best examples of skilful cultivation we have seen for some time; they comprised Phœnocoma prolifera Barnesii, at least 5½ feet through, and covered with its bright rosy flowers; Ixora Pilgrimi, a splendid specimen, with the flowers unusually fine in colour; Statice profusa, Erica Thompsoni, E. Irbyana, and Allamanda nobilis, equally well done; 2d, Mr. Lock, with a nice group.

FINE-FOLIAGE PLANTS.

Mr. Lock was the only exhibitor in the open class for eight, taking 1st with a large and well grown collection, which contained Croton Weismanni, C. Williamsi, and C. Warneri, all in beautiful order; an immense example of Latania borbonica, and several other Palms, with Cycas revoluta, large, and in fine condition.

FERNS.

Of eight exotic varieties, Mr. Lock was the only exhibitor, being 1st with, amongst others, beautiful specimens of Cyathea medullaris, C. dealbata, Gleichenia speluncæ. Davallia Mooreana, and the charming D. fijiensis, with Marattia Cooperi, a fine and distinct Fern.

TUBEROUS BEGONIAS

were very well shown, the plants collectively being large, well-flowered, and stout in growth. With eight varieties Mr. H. Godding took 1st; Mr. S. Tottle 2d.

ORCHIDS.

Mr. Cypher was the only exhibitor of four, taking 1st honours with well-bloomed plants, including Saccolabium Blumei major, bearing three good spikes; Cattleya superbiens, Dendrobium Dearei, and Lælia purpurata.

FUCHSIAS

were well represented, most of the plants staged being medium in size, fresh and profusely bloomed. Mr. H. Godding and Mr. Henley, gr. to F. Woodland, Esq., were 1st and 2d, with six, in the order of their names.

ZONAL PELARGONIUMS

are better shown at Taunton than in many places, the plants individually not so large as sometimes met with, but well-flowered and less formally trained. For eight Mr. H. Godding was 1st, with a meritorious collection; 2d, Mr. S. Tottie. Eight nosegays.—1st, Mr. H. Godding. Eight variegated varieties, four gold and four silver tricolors.—1st, Mr. H. Godding. Double zonals were also well shown, Mr. H. Godding and Mr. Henley being bracketted equal 1st.

DIVISION II.—AMATEURS.

Stove and greenhouse plants.—With twelve, Mr. Lock again scored 1st honours, staging a nicely bloomed set of plants, the best of which were Ixora Prince of Orange, the white flowered I. Colei, Erica ampullacea Barnesii, and Phœnocoma prolifera; 2d, J. Paine, Esq.

Six stove and greenhouse plants.—1st, Mr. Thomas, gr. to W. G. Marshall, Esq., with a well managed half-dozen, the best of which were Ixora Williamsi, Erica tricolor Wilsoni, and Bougainvillea glabra.

FINE-FOLIAGE PLANTS.

Here also Mr. Lock had 1st, again staging a beautiful lot, including Croton Prince Prince of Wales, one of the best of the long narrow-leaved sorts, and Kentia Fosteriana.

FERNS.

In the class for six exotic kinds, the 1st prize went to Mr. Lock, who had well managed examples of Davallia Tyermanii, Gleichenia Mendelii, G. rupestris glaucescens, and Adiantum concinnum latum; 2d, Mr. Henly, who likewise had a pretty set of plants. Mr. Lock was to the fore with hardy Ferns, having a very fine collection; 2d, Mr. Huxtable, gr. to F. W. Newton, Esq.

COLEUS.

These were present in fine condition.—With six Mr. Thomas had 1st, his plants being well grown and highly coloured; 2d, Mr. Bradbeer, gr. to W. B. Hellard, Esq.

Four Achimenes.—1st, Mr. Thomas, with nicely flowered examples.

GLOXINIAS

in nice condition came from Mr. Bradbeer, who was 1st with four.

CUT FLOWERS.

Roses were much better represented than the advanced season and the exceedingly dry state of the weather would have led us to expect. With forty-eight single blooms, distinct varieties, open, Messrs. Keynes & Co, Salisbury, took the lead, having a very good lot of flowers; Messrs. R. Mack & Sons, Catterick Bridge, Yorkshire, a good 2d. For twenty-four varieties, three blooms of each, open, Messrs. Keynes were again 1st, here also staging fine blooms; equal 2d, Mr. Campbell, gr. to S. P. Budd, Esq., Bath, and Messrs. Mack, both showing well.

In the amateurs' classes, Roses were also well shown. Mr. Campbell was 1st with twenty-four, staging a meritorious set of blooms; 2d, Mr. W. Davis. Twelve Roses (amateurs).—1st, Mr. Campbell; 2d, Mr. W. Davis. Twelve Tea Roses (amateurs).—1st, Mr. Campbell; 2d, Mr. W. Davis. Twelve bunches of cut flowers.—1st, Mr. Lock with a fine collection, which, amongst others, contained Dipladenias, Ixoras, Allamandas, Heaths, &c.; 2d, Mr. J. Paine. Twenty-four Gladiolus.—Of these Mr. Dobree was the only exhibitor, taking a well-merited 1st with a magnificent lot of spikes. Hollyhocks.—With twenty-four, and also with twelve, Mr. W. Smith had 1st; Mr. W. Davis being 2d in the class for twelve. Phloxes were very good, Mr. W. Smith taking the lead with twelve spikes, Mr. H. Godding 2d.

Dahlias were as well represented as often seen later in the season, the 1st prize for twenty-four going to Messrs. Keynes, who had a beautiful stand of full-sized flowers; 2d, Mr. J. Nation, Staplegrove. Twelve Dahlias.—1st, Messrs. Keynes, here again staging fine blooms; 2d, Mr. Nation. Twelve fancy Dahlias.—With these Messrs. Keynes were also 1st, Mr. Nation 2d. Twelve single Dahlias.—1st, Mr. Nation; 2d, Messrs. J. Cooling & Son, Bath.

TABLE DECORATIONS.

Miss Cypher was the only exhibitor in the class for a table laid out in the usual way, with flowers and fruit, taking 1st with a tasteful arrangement. Single stand of flowers.—1st, Miss Cypher; 2d, Mrs. E. Blake.

For a hand bouquet Miss Cypher was 1st, with one of the best examples we have ever seen her exhibit, alike noteworthy for the arrangement of the flowers as for the good combination of colour. Bouquets of wild flowers were numerous and very well arranged, Mrs. S. Reed being 1st, Mr. T. H. Bennett 2d.

FRUIT

is generally well represented here, and on the present occasion was better than usual. In the class for ten dishes, Mr. Iggulden, gr. to the Earl of Cork, Marston, Frome, stood prominently in front with a very good collection, containing Black Hamburgh and Muscat of Alexandria Grapes, a good Smooth Cayenne Pine, Grosse Mignonne Peaches, Lord Napier Nectarines, Hemskirk Apricots, Brown Turkey Figs, Eastnor Castle Melon, and Jargonelle Pears, all good. The three bunches of Black Hamburgh Grapes in this collection were as near perfect as they are ever likely to be met with, medium-sized, beautifully-shaped bunches of large, even berries, in every way up to the mark in condition. 2d, Mr. Crossman, gr. to J. Brutton, Esq., also showing a nice collection.

Eight dishes.—With these Mr. Crossman took the lead with a creditable lot of fruit, the best being Black Hamburgh and Muscat of Alexandria Grapes, Pitmaston Orange Nectarines, Early York Peaches, and Victory of Bath Melon; 2d, Mr. Reed, gr. to F. J. C. Parsons, Esq.

Four dishes.—1st, Mr. Iggulden, here also staging excellent fruit, consisting of Black Hamburgh Grapes, Crimson Galande Peaches, beautifully coloured; fine Apple Nectarine and Hero of Lockinge Melon; 2d, Mr. Dafurn, gr. to Mrs. Walker.

Three bunches of Black Hamburgh Grapes.—1st, Mr. Iggulden, who here again staged faultless examples of this fine old sort; 2d, Mr. Cooper, gr. to C. L. Collard, Esq.

Three bunches of any other black Grape.—Here Mr. Cooper was placed 1st, Mr. Dafurn 2d, and Mr. Crossman 3d; the last-named exhibitor having the most meritorious exhibit in the class—Madresfield Court, beautifully finished.

Three bunches of Muscat of Alexandria.—With these Mr. Lloyd, gr. to V. Stuckey, Esq., took the lead, having good bunches, nicely coloured; 2d, Mr. W. C. Rafarel.

Three bunches of white Grapes, Muscats excluded.—1st, Mr. W. C. Rafarel, showing Duke of Buccleuch, in good condition; 2d, Mr. Clarke, gr. to C. E. J. Esdaile, Esq., with Buckland Sweetwater, very well done.

Dish of Peaches.—1st, Mr. Iggulden, who had a good dish of Royal George, full-sized fruit, nicely coloured; 2d, Mr. Lloyd, with Bellegarde.

Dish of Nectarines.—1st, Mr. Dafurn, with Newington, handsome fruit, highly coloured; 2d, Mr. Crossman.

Single Melon, any colour.—1st, Mr. T. Paul, with Hero of Lockinge; 2d, Mr. G. Ricks, showing Blenheim Orange.

VEGETABLES

were wonderfully well shown, considering the dryness of the season. With ten dishes Mr. T. Frost had 1st. Six dishes.—In this class also 1st honours went to Mr. Frost, Mr. H. Moore being 2d. Collection of Potatos.—1st, Mr. W. Greedy; 2d, Mr. H. Moore.

Messrs. Lucombe, Pince & Co., Exeter, and Messrs. R. Veitch & Son, Exeter, both contributed fine collections of miscellaneous plants and cut flowers, not for competition. From Messrs. Kelway, Langport, came a fine lot of Gladiolus and Gaillardia flowers.

Mr. T. S. Ware, Tottenham, had a beautiful colection of cut flowers; Mr. Dobree, Wellington, an extensive display of Gladiolus, fine varieties in fine condition; and Mr. E. J. Jarman, Chard, Gloxinias, Begonias, and Roses.

## GRANTHAM HORTICULTURAL.

THE fourteenth exhibition of the above Society was held August 13, and was a great success. The entries were far in excess of the previous one. The weather was very fine, and the company very large. The show was well arranged, and the arduous duties of the secretary were well performed, ably assisted by the committee. We trust they will have a financial success, as the Society is worthy of being established upon a firm basis. Every inducement is offered to the cottagers. The Society annually distributes gratuitously seeds and plants to those willing to compete. This liberal offer is taken advantage of. The products of those in the cottagers' class were highly meritorious. The principal feature of the show was the groups of plants arranged for effect, the 1st prize of £6 going to Mr. Thacker, of Nottingham, for a very fine artistic arrangement; 2d, Mr. Lyon, gr. to Lady Ossington, Newark, who had a good group of fine-coloured, well-grown plants, a little too crowded; 3d, Sir J. H. Thorold, Syston Park; gr., Mr. Ashley.

For six stove and greenhouse plants in or out of flower.—1st, Mr. Thacker; closely 2d, Mr. Lyon.

For six Ferns the 1st prize was easily taken by Mr. Lyon for a well-grown half-dozen; 2d, J. R. Boyall, Esq. (gr., Mr. Melville).

Table plants were good, and competition strong 1st prize for six, a pretty even lot from Mr. German, gr. to J. Cutts, Esq., Nottingham; 2d, Mr. Lyon, who also had a nice light graceful half dozen. Coleus were good. Begonias and Gloxinias poor, except those awarded 1st prize.

CUT FLOWERS.

Roses were fairly shown, the principal prizes going to Mr. House, nurseryman, Peterborough, and Messrs. J. & W. Brown, Stamford. Dahlias, both single and double, were good, the 1st prize going to Mr. House. Bouquet, button-hole, and epergne.—These were well to the fore. Bouquets good, both those composed of wild flowers as well as the bridal and ball bouquets. Epergnes were also good. Wild grasses and flowers were likewise well shown, one stand alone having over 150 varieties properly named.

FRUIT

was good. Fine collections were staged by Mr. Lyon, who was 1st, closely followed by Mr. Melville, gr. to Mrs. Hornsby, Grantham. Grapes were good, fine bunches, well coloured, good berries. 1st prize for whites.—Good examples of Muscats were shown by Mr. Edmunds, gr. to His Grace the Duke of St. Alban's; Mr. Gilbert, Burghley, 2d. Black Grapes.—Mr. Melville, gr. to J. K. Boye, Esq., was 1st; Mr. Gilbert 2d—both showed fine examples. Longest and heaviest bunch.—1st prize, Mr. Edmund, Bestwood; 2d, Mr. Melville, Grantham. Peaches, Nectarines, Apples, Plums, &c., were well shown, likewise Melons.

Cottagers came to the fore well; good examples of vegetables and fruit were shown extensively, likewise flowering plants.

The Blacksmith Potato, raised by the late Mr. Don, attracted attention.

A splendid new yellow Tomato, of fine flavour—many fruit weighing over 13 oz.—was exhibited by Mr. Fish, Curator, Botanical Garden, Churchtown, which was Highly Commended by the judges, whose decisions seemed to give every satisfaction in the various departments. *A. O.*

## ATHERSTONE FLORAL AND HORTICULTURAL.

THE sixth annual exhibition of the above flourishing Society was held on August 3 in the beautiful grounds of Merevale Park, which was kindly placed at the disposal of the committee by Mrs. Dugdale. The show, despite the dry weather, was superior to any of its predecessors, the lowest estimate of visitors being 14,000, the sum of £251 being taken at the gates, exclusive of tickets to the value of £25 sold in the town previous. The productions of the professional gardeners occupied four large tents. The first contained a collection of specimen stove and greenhouse plants; the second collections of plants arranged in groups for conservatory decoration, of which there were four fine lots well set up, also a strong competition in single specimens of Palms, Orchids, Ferns, &c. The third was filled with fruit and cut flowers, generally very good, the Grapes especially being in quantity and fine. Plants for table decoration were also in this tent, and a large group of useful flowering and foliage plants from the nurseries of Mr. Woodford, Atherstone (not for competition). A fourth contained the vegetables, very good indeed, especially when the dry weather is taken into consideration. A very large tent was well filled by the cottagers, many of whose productions would have held their own in competition with the professionals. Here the competition was exceedingly keen, and taxed the judges' patience and skill to the utmost. A sixth tent contained the productions of amateurs, also honey and dairy produce from the neighbouring farmers—a very fine lot indeed.

## NATIONAL GOOSEBERRY SHOW: August 3.

THIS meeting was held at the Royal Botanical Gardens, Old Trafford, Manchester.

DISHES OF TWELVE BERRIES

| *Exhibitor.* | *Name of Berry.* |
|---|---|
| James Salsbury .. Red .. | Lord Derby. |
| Bradley Bradley .. .. .. | Blucher |
| James Hervey .. .. .. | Speedwell. |
| Thomas Burrows .. .. .. | Bobby. |
| William Riley .. .. .. | Clayton. |
| Edmond Salsbury .. Yellow .. | Ringer. |
| James Bower .. .. .. | Leveller. |
| Benjamin Cheadle .. .. .. | Lady Daughton. |
| Daniel Bower .. .. .. | High Sheriff. |
| James Walton .. .. .. | Hero of the Nile |
| James Salsbury .. Green .. | Stockwell. |
| Edmond Salsbury .. .. .. | Shiner. |
| John Tarkington .. .. .. | Surprise. |
| James Walton .. .. .. | Plunder. |
| Alfred Tomkinson .. .. .. | British Oak |
| James Salsbury .. White .. | Transparent. |
| James Hervey .. .. .. | Careless |
| James Warburton .. .. .. | Fascination. |
| Alfred Tomkinson .. .. .. | King of Trumps. |
| William Robinson .. .. .. | Faithful. |

TWINS.

| | | | Dwt. | Gr. |
|---|---|---|---|---|
| James Warburton.. | Red.. | Lord Derby .. .. | 33 | 20 |
| James Salsbury .. | Yellow.. | Ringer .. .. | 39 | 20 |
| John Torkington .. | Green .. | Surprise .. .. | 29 | 5 |
| James Bower .. | White .. | Fascination .. .. | 36 | 0 |

PREMIER PRIZES.

| | | | | |
|---|---|---|---|---|
| James Salsbury .. | Red .. | Maccaroni .. .. | 20 | 0 |
| Edmond Salsbury .. | Yellow .. | Ringer .. .. | 22 | 11 |
| Benjamin Cheadle.. | Green .. | Surprise .. .. | 20 | 13 |
| John Knowls .. | White .. | Transparent .. .. | 20 | 12 |
| James Harvey .. | Red .. | Companion .. .. | 20 | 8 |
| James Threlfall .. | Yellow .. | Leveller .. .. | 19 | 13 |
| John Clark .. .. | Green .. | Diadem .. .. | 18 | 21 |
| Samuel Burchenall | White .. | Princess Royal .. | 20 | 0 |
| John Boot .. .. | Red .. | Lord Derby .. .. | 20 | 4 |
| John Torkington .. | Yellow .. | Thatcher .. .. | 19 | 12 |
| Hamlet Foden .. | Green .. | Plunder .. .. | 18 | 15 |
| Alfred Tomkinson.. | White .. | King of Trumps .. | 18 | 10 |
| Bradley Bradley .. | Red .. | Blucher .. .. | 19 | 18 |
| Robert Downs .. | Yellow .. | Catherina .. .. | 18 | 17 |
| Daniel Bower .. | Green .. | Usher .. .. | 18 | 7 |
| James Bower .. | White .. | Peto .. .. | 17 | 3 |
| Frank Cliff .. .. | ,, .. | Bobby .. .. .. | 19 | 6 |
| Robert Whitehurst | ,, .. | Garibaldi .. .. | 18 | 0 |
| William Riley .. | ,, .. | Stockwell .. .. | 18 | 4 |
| Samuel Dennerley | ,, .. | Careless .. .. | 16 | 21 |

CLASS PRIZES:—RED.

| | | | | |
|---|---|---|---|---|
| James Salsbury.. .. | .. | Bobby .. .. | 21 | 14 |
| Edmond Salsbury .. | .. | Falstaff .. .. | 21 | 16 |
| Edmond Salsbury .. | .. | London .. .. | 20 | 14 |
| James Salsbury.. .. | .. | Governor .. .. | 20 | 16 |
| John Knowls .. .. | .. | Lord Derby .. .. | 20 | 9 |
| Bradley Bradley .. | .. | Blucher .. .. | 20 | 14 |
| James Hervey .. .. | .. | Companion .. .. | 19 | 1 |
| Robert Whitehurst | .. | Clayton .. .. | 19 | 2 |
| James Bower .. .. | .. | Stockwell .. .. | 19 | 0 |
| Robert Downs .. .. | .. | Reveling Furlough | 18 | 5 |
| Alfred Tomkinson .. | .. | Ploughboy .. .. | 17 | 7 |
| James Hervey .. .. | .. | Lion's Provider .. | 17 | 17 |

YELLOW.

| | | | | |
|---|---|---|---|---|
| James Salsbury.. .. | .. | Thatcher .. .. | 22 | 20 |
| James Salsbury.. .. | .. | Mount Pleasant .. | 22 | 16 |
| James Hervey .. .. | .. | Garibaldi .. .. | 20 | 17 |
| John Knowls .. .. | .. | Leveller .. .. | 19 | 18 |
| Edmond Salsbury .. | .. | Ringer .. .. | 21 | 1 |
| Alfred Tomkinson .. | .. | Drill .. .. .. | 18 | 15 |
| James Hervey .. .. | .. | Wakeful .. .. | 18 | 14 |
| Benjamin Cheadle .. | .. | Lady Haughton .. | 19 | 0 |
| James Threlfall .. | .. | High Sheriff .. | 18 | 8 |
| Robert Downs .. .. | .. | Catherina .. .. | 17 | 21 |
| John Torkington .. | .. | Favonius .. .. | 17 | 4 |
| William Riley .. .. | .. | Oldham .. .. | 16 | 6 |

GREEN.

| | | | | |
|---|---|---|---|---|
| James Salsbury .. | .. | Stockwell .. .. | 21 | 22 |
| James Salsbury .. | .. | Surprise .. .. | 21 | 8 |
| Edmond Salsbury .. | .. | Hospool .. .. | 20 | 15 |
| Edmond Salsbury .. | .. | Shiner .. .. | 20 | 1 |
| James Threlfall .. | .. | Diadem .. .. | 18 | 18 |
| William Riley .. .. | .. | Thunder .. .. | 17 | 15 |
| Robert Downs .. .. | .. | British Oake .. | 17 | 14 |
| William Riley .. .. | .. | Telegraph .. .. | 16 | 13 |
| Robert Whitehurst | .. | Sir George Brown .. | 15 | 17 |
| John Knowls .. .. | .. | Matchless .. .. | 17 | 14 |
| John Boot .. .. | .. | Seedling .. .. | 16 | 2 |
| Benjamin Cheadle .. | .. | Cheerful .. .. | 14 | 4 |

WHITE.

| | | | | |
|---|---|---|---|---|
| Edmond Salsbury .. | .. | Princess Royal .. | 23 | 1 |
| James Salsbury.. .. | .. | Transparent .. .. | 21 | 15 |
| James Salsbury.. .. | .. | Careless .. .. | 21 | 10 |
| John Knowls .. .. | .. | Antagonist .. .. | 18 | 22 |
| Edmond Salsbury .. | .. | Succeed .. .. | 17 | 20 |
| John Torkington .. | .. | Fascination .. .. | 17 | 21 |
| Benjamin Cheadle .. | .. | Overseer .. .. | 15 | 13 |
| Robert Downs .. .. | .. | Hit or Miss .. .. | 16 | 20 |
| Alfred Tomkinson .. | .. | King of Trumps .. | 15 | 13 |
| William Riley .. .. | .. | Freedom .. .. | 16 | 1 |
| John Boot .. .. | .. | Snowdrop .. .. | 15 | 10 |
| William Riley .. .. | .. | Postman .. .. | 15 | 1 |

*Charles Leicester, Secretary, Nurseryman, Crompton Road, Macclesfield.*

## SIR CHARLES BUNBURY'S ARBORETUM.

THERE are several residences near Bury St. Edmund's notable for environments of coniferous and forest trees. Hardwick, Mr. Milner Gibson's beautiful home, over which the presiding genius is D. T. Fish, has the lawn, grounds, and park studded with fine trees. A Copper Beech planted on a mound, *à la* Dropmore, is a perfect specimen, and near it is a gaunt-limbed Cedar of Lebanon, that might well have been brought to England by a Crusader! But a few strides apart is a Medlar, never more than 12 feet high, but which takes fifty-seven good paces to circumambulate. No need to form a clump of dwarfed Laurels or other shrubs when the same effect can be produced by one tree, and that useful to boot. In the grounds are some noble Araucarias and Pines, including a Pinus excelsa that would be hard to surpass here in England. Within a mile is Nowton Court, where there grows a Wellingtonia that will also challenge comparison. Six miles to the south-east is Drinkstone Park, where the Hemlocks murmur over the highway, and where the plantations exhibit an absolutely flawless prosperity. But I have chosen Sir Charles Bunbury's arboretum at Barton, because in every sense it justifies the term, and may be taken as an example of natural arrangement. We have got so used to trim lawns dotted at regular intervals with living sugar cones, and to observe trees seriatim, that the view of an artless imitation of Nature affects our consciousness of beauty in the same way as an undreamt-of pleasure flushes the *blasé* man of the world. The mind feels full of it, nor is it any transient enthusiasm.

This arboretum is the exact mean between being too far from and too near the mansion. The approach is by a shrubbery path, and you come upon the object of your quest without any sure conviction that you have reached your destinatination. This is owing to the admirable admixture of deciduous trees, which now overhang the path, now leave a gap of lawn, disclosing an aspiring Conifer. When there is open space everything is not cut away for a particular tree; the upper half perhaps is visible, but you must get to the other side of a spreading Magnolia acuminata to see its proportions. Again, the branches of the trees very often interlace at the foot. One tree is not removed because it is within reach of another. And who will say that the two together, whether fluttering at the behest of the winds or peacefully absorbing the sunlight, are not as pretty as one statuesque tree, looking as conscious of deportment as a sculptured figure of Hermes on one leg? This clear reach of 60 feet of channelled particoloured bark with the stumps of whilom branches, looking like fangs, still remaining, who will say that it is one whit less impressive than yonder Thuia gigantea as regular in shape as if it were a witch's hat? There is nothing formal about the planting of the trees at Barton, and yet within a small space are contained a very large and varied collection of foreign trees that will endure our winters.

Taking the deciduous trees first, the most superficial observer could hardly help feasting on the beauty of Juglans nigra. The large striking foliage, brightly coloured, makes it one of the best lawn trees possible. It is very effective when planted by the side of smaller-leaved trees. There is a fine wide-spread specimen of Gleditschia triacanthos. This is the Honey Locust tree of North America. G. horrida, from China, is also well represented. This is a dwarfer tree, and very suitable for mixed masses of foliage. A very ornamental tree in a full grown state is Gymnocladus canadensis. The leaves, which are made up of pairs of secondary leaflets, are long, and dull green in colour. The flowers are white, and are produced in racemes from the axils of the leaves. The timber is durable, and is made considerable use of in the United States of America, where the first settlers are said to have used its seeds as a substitute for Coffee; hence its *soubriquet* of Coffee tree. The meaning of the botanical name can easily be realised by the appearance of the branches when denuded of their leaves. Another prominent tree in this collection is the American Nettle tree (Celtis occidentalis). The German name, "Lotusbaum," immediately awakes a chord of interest, for people are apt to forget that C. australis probably furnished the oftentimes envied food of the "Lotophagi." Certainly the American variety forms a good tree for a lawn, and one under which a mortal, if so minded, could well sit of a summer's day, and wish it was "always afternoon." Other noticeable trees are Fagus asplenifolia, Pyrus spectabilis (Chinese Apple), Crataegus orientalis, Sugar Maple, and Acer creticum, Æsculus indica and flava, Ornus striata, and Carya amara (the Bitter Hickory). A pretty group consists of a Cladrastis (Virgilia) lutea by the side of a Judas tree, which it resembles in habit, though quite different in the hue of the foliage: both contrast with an overhanging Cryptomeria japonica and an adjoining Thuia filiformis. A large Catalpa now in flower affords a still greater contrast to an arrowy Pinus monticola, which seems to rear itself from the midst of the lighter coloured foliage.

The Conifers are not a large collection, but the greater part are exceedingly well grown. The Pinus monticola mentioned just now is a remarkably fine specimen, and there are likewise good examples of P. excelsa and Lambertiana. There is no better coloured Pine than the last-mentioned, and it was a pleasure to observe it in so thriving a condition. The subsoil is calcareous. A tall specimen of Cedrus atlantica has the ground beneath the branches covered with ground Ivy, from which protrude in many places healthy and vigorous Fern fronds. The *tout ensemble* of the glaucous foliage, the dark and bright greenery of the Ivy and the Fern, was very beautiful. All over the lawn, wherever practicable, on tree stumps, or in shaded angles of the bounding wall, the same carpeting of any bare ground was used. A specimen of the Douglas Fir is almost a rival of the famous one at Dropmore, and there are few, if any, better examples of Menziesi than the two tallest at Barton. Picea Morinda succeeds well; one tree, not so healthy as the others, is loaded with cones. This is also the case with Sequoia sempervirens, the tallest trees of which are leaderless. It is seldom also a Cupressus Goveniana can be seen without a heavy crop of cones. In South Portugal, where it is an extremely common tree, the beautiful foliage is much marred by the numbers of brown cones still clinging to the shoots. The same was the case with the Barton specimen. One of the gems of the collection is a grand specimen of Taxodium distichum. A free use is made of this Taxodium to brighten up any more sombre foliage, such as that of the Yews. In the distance it quite belies its name of Yew-like. An extremely useful variety, but much dwarfer, and exactly adapted for a shrubbery, or for planting among flowering plants, is the Chinese Taxodium (Glyptostrobus heterophyllus). The foliage has the same bright effective hue as T. distichum, and although rather tender, would succeed well enough in sheltered positions in most parts of the country. *C. A. M. C.*

## The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, AUGUST 19, 1885.

| MONTH AND DAY. | BAROMETER: Mean Reading Reduced to 32° Fahr | BAROMETER: Departure from Average of 18 years | TEMPERATURE OF THE AIR: Highest. | TEMPERATURE OF THE AIR: Lowest. | TEMPERATURE OF THE AIR: Range. | TEMPERATURE OF THE AIR: Mean for the Day | TEMPERATURE OF THE AIR: Departure of Mean from Average of 6 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point. | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity. Sat = 100 | WIND: Average Direction. | RAINFALL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug. | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 13 | 29.89 | +0.01 | 67.5 | 49.5 | 18.0 | 57.2 | — 5.0 | 42.6 | 58 | W.NW. | 0.60 |
| 14 | 30.14 | +0.37 | 66.5 | 43.0 | 23.5 | 54.7 | — 7.3 | 42.5 | 63 | N.W. | 0.00 |
| 15 | 30.12 | +0.35 | 73.5 | 45.0 | 28.5 | 58.9 | — 2.8 | 44.2 | 58 | N.W. | 0.00 |
| 16 | 30.06 | +0.28 | 77.0 | 50.8 | 26.2 | 63.0 | + 1.6 | 43.2 | 71 | N.W. | 0.00 |
| 17 | 29.91 | +0.13 | 77.5 | 50.8 | 26.7 | 63.1 | + 1.6 | 43.0 | 63 | N.W. | 0.00 |
| 18 | 29.94 | +0.15 | 65.5 | 55.5 | 10.0 | 58.8 | — 2.5 | 50.6 | 77 | N.W.; W.NW. | 0.00 |
| 19 | 29.91 | +0.12 | 63.2 | 47.0 | 16.2 | 53.6 | — 7.6 | 47.2 | 78 | N.W.; W.NW. | 0.00 |
| Mean | 30.00 | +0.22 | 70.1 | 48.8 | 23.3 | 58.5 | — 3.6 | 47.4 | 67 | N.W. | 0.03 |

Aug. 13.—Fine day, dull, very windy.
" 14.—Fine bright day.
" 15.—Very fine day.
" 16.—Fine bright day and night.
" 17.—Fine day and night.
" 18.—Dull day, fine, clear night.
" 19.—Dull throughout.

LONDON: *Atmospheric Pressure.*—During the week ending August 15, the reading of the barometer at the level of the sea increased from 29.96 inches at the beginning of the week to 29.98 inches by 9 A.M. on the 9th, decreased to 29.67 inches by 5 P.M. on the 10th, increased to 29.85 inches by 9 A.M., decreased to 29.72 inches by 5 P.M. on the 12th, increased to 30.36 inches by 9 A.M., decreased to 30.29 inches by 5 P.M. on the 14th, increased to 30.34 inches by 9 A.M on the 15th, and was 30.26 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.99 inches, being 0.04 inch higher than last week, and 0.04 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 73°.5, on the 10th and 15th; on the 14th the highest was 66°.5. The mean of the seven high day temperatures was 70°.7.

The lowest temperature was 43°, on the 14th; on the 10th the lowest temperature was 57°. The mean of the seven low night temperatures was 50°.7.

The greatest range of temperature in one day was 28°.5, on the 15th; the smallest was 16°.5 on the 10th. The mean of the seven daily ranges was 20°.

The mean temperatures were—on the 9th, 61°.4; on the 10th, 60°.7; on the 11th, 61°.4; on the 12th, 60°.2; on the 13th, 57°.2; on the 14th, 54°.7; on the 15th, 58°.9; and these were all below their

averages by 0°.7, 1°.4, 0°.8, 2°, 5°, 7°.3, and 2°.8 respectively.

The mean temperature of the week was 59°.2, being the same as last week, and 2°.9 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 133°, on the 11th. The mean of the seven readings was 120°.1.

The lowest reading of a thermometer placed on grass was 30°.4, on the 14th. The mean of the seven readings was 40°.9.

*Rain.*—Rain fell on two days to the amount of 0.07 inch.

ENGLAND: *Temperature.*—During the week ending August 15, the highest temperatures were 77°.8 at Cambridge, 73°.5 at Blackheath, 73° at Sheffield; the highest at Preston was 67°, at Bolton 67°.4, at Wolverhampton 67°.5. The general mean was 70°.4.

The lowest temperatures were 37° at Wolverhampton, 38° at Sheffield and Hull; the lowest temperatures at Plymouth 47°, at Brighton 46°.3, at Liverpool 45°.3. The general mean was 41°.5.

The greatest ranges were 38°.7 at Cambride, 35° at Sheffield, 34° at Hull; the least ranges were 21° at Plymouth, 22°.7 at Liverpool, 25° at Preston. The general mean was 28°.9.

The mean of the seven high day temperatures was highest at Cambridge, 72°.5, at Blackheath 70°.7, at Brighton 68°.2; and was lowest at Bolton, 61°.4, at Preston 61°.6, at Bradford 62°.3. The general mean was 65°.5.

The mean of the seven low night temperatures was highest at Brighton, 53°.5, at Plymouth 53°.1, at Liverpool 51°.1; and was lowest at Wolverhampton, 46°, at Bolton 46°.6, at Sheffield 47°.3. The general mean was 49°.6.

The mean daily range was greatest at Cambridge, 24°.4, at Blackheath 20°, at Sheffield 19°.4; and was least at Preston 11°, at Liverpool 11°.9, at Plymouth 12°.4. The general mean was 15°.9.

The mean temperature was highest at Brighton and Blackheath 59°.2, at Cambridge 58°.6; and was lowest at Bolton 52°.3, at Wolverhampton 53°.2, at Bradford 54°.2. The general mean was 55°.9.

*Rain.*—The largest falls were 1.48 inch at Bolton, 15.2 inch at Preston, 0.64 inch at Liverpool; the smallest falls were 0.07 inch at Blackheath, 0.08 inch at Cambridge. No rain fell at Brighton. The general mean fall was 0.45 inch.

SCOTLAND: *Temperature.*—During the week ending August 15, the highest temperature was 68.°4, at Dundee; at Greenock the highest temperature was 62°. The general mean was 40°.

The lowest temperature in the week was 36.°9, at Dundee; at Leith the lowest temperature was 43°.9. The general mean was 40°.

The mean temperature was highest at Leith, 55°.6; and lowest at Dundee and Perth, 53°.2. The general mean was 54°.

*Rain.*—The largest fall was 2.47 inch, at Greenock, the smallest fall was 0.86 inch, at Leith. The general mean fall was 1.45 inch.

JAMES GLAISHER F.R.S.

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SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Aug 17, 1885; issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* was rough and unsettled during the earlier days of the period, with very heavy rain in some parts of Scotland and the north-west of England, and a few showers over Ireland and the south and east of England. As the week progressed, however, the sky cleared, and fine, dry weather became general.

The *temperature* has been below the mean in all districts, the deficit varying from 1° in the "Channel Islands," and 2° in "England, S.," to 3°, 4°, or 5° elsewhere. The highest of the maxima were registered either on the 16th or 17th, when they varied from 83° in "England, S.," and between 73° and 78° in most other districts, to 63° in "Scotland, N." The minima, which were generally recorded during the early morning of the 15th, were as low as 32° in "Scotland, N.," 33° in "Ireland, N.," and 34° in "England, S.W.," whilst elsewhere they varied from 35° in the southern and north-western parts of England, and in the south of Ireland, to 39° in "England, N.E.," and to 51° in the "Channel Islands." On the grass the readings were much lower, and frost being experienced over the inland parts of the country.

The *rainfall* has been more than the mean in "Scotland, E.," but less in all other districts.

*Bright sunshine* shows a decided increase in all districts, the percentages of the possible amount of duration ranging from 36 in "Ireland N.," and 37 in "Scotland N.," to between 60 and 65 over S.W., S., and S.E. England, and 78 in the "Channel Islands."

*Depressions observed.*—During the earlier parts of this period the distribution of pressure continued similar to that of the close of last week, the barometer being highest over France, while depressions travelled in an eastern or north-easteern direction over the northern parts of the kingdom. Strong winds from between S. and W. prevailed on all our coasts; gales were experienced in many places, and in some parts of Scotland the force of a strong or whole gale was attained. By the 14th, however, these depressions were disappearing, and from this time to the close of the period the conditions were anticyclonic, and the winds light and variable on all our coasts.

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## Answers to Correspondents.

VINE INSECTS: *J. Short.* The caterpillar is that of a moth described and figured in our columns previously, and here reproduced. The caterpillars eat the fruit

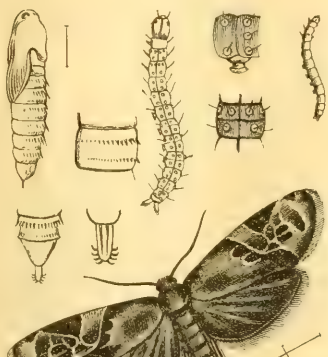


FIG. 54.—TORTRIX ANGUSTIORANA: A VINE MOTH.

and fasten the berries together by a silky web. You can do nothing but endeavour to catch the marauder.

ADDRESS: *Agnes.* We cannot give you the address you want.

BOOKS: *A Young Beginner.* There is no separate book on the subject that would suit you. Burbidge's *Cultivated Plants*, &c. (Blackwood) would be very useful to you. The *Fruit Manual* is published at 171, Fleet Street, price about 15s.—*W. H. B.* Bentham's *Handbook of the British Flora* (Lovell Keeve & Co.).

CARNATION: *J. B.* Your spot from the white Clove is curious. The petals are fringed in the ordinary way, but each tooth is marked by a tiny purplish spot as in a Picotee. It should be useful as a border flower.

CELOSIAS: *W. Tonks.* The disease, whatever it be, is not caused by fungus or insect, at least, no traces of them can be found. Has the soil been analysed?

CROTONS: *T. S. T.* The condition is the result of some check to growth. Perhaps you have been using too strong a dose of liquid manure.

DOUBLE BEGONIAS: *B.* The history of these and the story of their extraordinary transformations was given in the *Gardeners' Chronicle*, August 26, 1882, p. 261, with illustrations. The subject has also been thoroughly discussed in France by M. Tournier.—*R. O.* A good flower, resembling Maréchal Niel in colour and arrangement of the petals. If all the flowers are as good as the one you send, we should think highly of the variety. The petals are curious botanically, in bearing ovules at their base.

ERRATA.—In the article on "The Genus Odontoglossum," p. 200, col. *a*, line 15, for "forms of construction," read "forms of constrictum."—In the report of the Carmarthen Horticultural Show, p. 185, col. *c*, for "cut flowers, &c., from Llinelly Gardens," read "from 'Loadstone,' the Lady Florist, Loadstone Gardens, Llanelly."—At p. 219, col. *b*, in obituary notice, instead of "The Gardens, Wildernesse, Sevenoaks," read "The Vine Nurseries, Sevenoaks."—In article "Notes from a Buckinghamshire Garden," at p. 201, col. *b*, line 16, for "gardener" read "garden;" at col. *c*, line 9, for "Clematis" read "Delphinium;" in line 14. for "love" read "lovely;" and at p. 202, last line of article, for "queer" read "green."

GINSENG: *An Ohio Correspondent* wants to get some pounds of the seed of this plant. Nowhere, we expect, will he get them. The only chance of getting a seed or two would be to apply to some Botanic garden, such as that of Moscow or St. Petersburg.

GRAFTING: *M.R.C.S.* Baltet's *Art of Grafting* (37, Southampton Street). There is no special work on weeping trees that we are aware of, nor is the cause of the phenomenon satisfactorily explained. Such trees usually originate as "sports." One bud or shoot is found to assume a pendulous direction, and is propagated. Sometimes, but not invariably, the phenomenon is inherited. The best summary that we know of is in Darwin's *Animals and Plants Under Domestication.*

GRAPES CRACKING: *Muscat.* You have rightly attributed the cause of your Grapes cracking to cold, and, it may be, a damp atmosphere succeeding a dry one, or a dry border. When you ask for favours be careful to stamp your letters; we had twopence to pay for yours. We are willing to give you advice gratis, but not to pay the expenses.

GRAPES MILDEWED: *J. P. P.* Your Grapes are thickly infested with the Grape mildew; they are also very badly rusted. Nothing can be done now to save your crop. Another year, if you see signs of mildew, ventilate freely, and apply sulphur, in the form of dust, on the leaves, and after a day or two wash it off with a syringe.

INSECTS: *F. B. B.* 1, the small Ladybird (Coccinella 2-punctata.): feeds on aphides; 2, the Cuckoo-spit insect (Aphrophora spumaria): sucks various plants, and discharges a white froth; 3, larva of the small Ladybird: feeds on aphides. *I. O. W.*

NAMES OF PLANTS: *W. Foster.* Menispermum canadense.—*L. Elliot.* Lilium Thunbergianum.—*W. K.*, Osterley, Bignonia radicans, and a variegated form of the Sweet Chestnut.—*D.* Veratrum nigrum.—*C. G.* 1, Hypericum pulchrum; 2, Erigeron acre; 3, Erythræa centaurium; 4, Conyza squarrosa; 5, Senecio Jacobæa; 6, Ajuga chamæpitys. This last is rare; you probably found it near Boxhill.—*J. B.* 1, Spiræa Fortunei; 2, Artemisia argentea; 6, Echites species, we cannot tell which, without the flowers; the labels of the others are detached, but we find Veronica Traversii, Berberis Darwini in fruit, and Chlorophytum orchidiastrum with variegated leaves.—*R. R. W.* 1, Deschampsia cæspitosa; 2 and 3, Mohnia cærulea.—*Broomfield.* Adiantum Moritzianum—a large form of A. Capillus-Veneris; 2, not well fructified; better sent a perfect frond when more advanced. It is probably a fine form of A. Capillus-Veneris incisum, 3 Epipactis latifolia.—*T. R. & Co.* Platystemon californicum.—*G. P.* Impatiens Roylei.

VINES AND TOMATOS: *T. D. P.* There are no fungi whatever on the Tomatos, and only a very slight trace of Oidium on the Vines. Nothing in the style of a Peronospora on either. As for "rust," the term is always applied to the berries, and not to scorched and dried foliage? Probably the Vines have been grown too quickly and then exposed to dry heat of some sort, and this has shrivelled the younger twigs and the edges of the young leaves; or they have suffered from sulphur.

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## CATALOGUES RECEIVED.

W. B. HARTLAND, 24, Patrick Street, Cork — Ye Original Little Booke of Daffodils.

HAAGE & SCHMIDT, Erfurt—Catalogue of Flower Bulbs and Roots.

VILMORIN-ANDRIEUX & Co., Quai de la Megisserie, Paris.—Catalogue of Bulbs and Strawberries.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Hyacinths and other Bulbous Roots.

LOUIS VAN HOUTTE, Ghent, Belgium — Bulbs and Flower Roots.

JAMES DICKSON & SON, 32, Hanover Street, Edinburgh —Dutch Flower Roots.

LOUIS DE SMET, Ledeberg-lez-Gand, Belgium — Supplement to General Catalogue.

JAMES DICKSON & SONS, 108, Eastgate Street, Chester —Bulbous Flower Roots, &c.

VICCARS COLLYER & Co.—Autumn Catalogue.

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COMMUNICATIONS RECEIVED.—Charles Ratmo, Innspruck.—H. F. N. E. B. W. T.—J. Smith.—E. V. B. Dr. Lawson, Halifax, C. S.—Torquay.—Mansell, Guernsey.—A. F. B. A. D.—R. D.—W. R.—W. I. D.—J. S. K.—F. J. G. B.—J. George J. W.—H. C.—J. C. M.—E. H.—T. Meehan.—B. W.—T. B.—J. R.—A. D. W.—Professor Wilkomm.—A. De Candolle.—R. J. S.—P. & Co.—C. S.—C. T. D.—J. S.—A. O.—C. I.

## Obituary.

MR. ALEXANDER TWEEDIE NEWBIGGING.—We record with regret the death of Mr. Alexander Tweedie Newbigging, of Kirkbank House, Dumfries, which occurred on the 19th inst. The deceased gentleman was in his 70th year. "Baillie" Newbigging, as his friends delighted to call him, was born, we learn from the Dumfries papers, at Kirkbank, Broughton, near Biggar, in Peeblesshire, but he came to Dumfries and entered the service of the late Provost Kennedy, nurseryman, when he was only sixteen years of age. With the exception of one brief period, when he went to the firm of the late Mr. Skirving, nurseryman, of Liverpool, Mr. Newbigging remained the rest of his life in Dumfries. It has been truly said that he was a born nurseryman, so thoroughly, enthusiastically, and successfully did he enter into his profession. In early life he devoted much of his time to the study of tree life, gradually raising himself to the position of an arborist, to whom the term "recognised authority" might in all truth have been applied.

The nurseries over which he presided for a long period of years have enjoyed a well-merited reputation for the forest and ornamental trees that are reared in them. There is hardly an estate in the South of Scotland that has not been planted, more or less, from the nurseries of T. Kennedy & Co. Nor have their grounds been places merely for delving and transplanting. They have been beauty-spots in the suburbs of the town. Mr. Newbigging was tasteful as well as skilful and energetic. He displayed it in the arrangement of his grounds, and in the architecture of his buildings. While in the service of Provost Kennedy he married that gentleman's daughter. In 1856 Provost Kennedy—who, by the way, was one of the first Councillors elected under the '32 Reform Act—retired from active business, and henceforth this establishment, which was founded in 1787, was carried on by Mr. Newbigging, in conjunction with Mr. Robert Cowan, under the title of "Messrs. Thomas Kennedy & Co."

In addition to his profession of nurseryman, he carried on the farm of Nether Dargavel, which he rented on the decease of Provost Kennedy in 1867; and as a practical agriculturist he achieved much success. In respect of the high quality of crops and stock Nether Dargavel came, in his hands, to be regarded as a model farm, and was considerably improved, his fat stock being the talk of the district. It was impossible to know him and not to admire him; there was a pawky humour in his conversation which captivated strangers; and a charm about his social bearing which was irresistible.

Mr. Newbigging leaves a widow, two sons, and four daughters, for whom much sympathy is felt. His daughters are all married, while his sons—Thomas Kennedy and John—are being brought up to the business, one devoting his attention to the seeds, and the other to the nurseries.

## Markets.

*COVENT GARDEN, August 20.*

MARKET remains with little alteration. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 | 3 0 | Lemons, per case | 15 | 0–30 0 |
| Currants, red, ½-siv. | 3 | 0– 3 6 | Melons, each | 1 | 0– 1 6 |
| — black, ½-sieve | 4 | 6– 5 0 | Peaches, per doz. | 2 | 0– 8 0 |
| Figs, per dozen | 2 | 0– .. | Pine-apples, Eng. lb. | 2 | 0– 3 0 |
| Gooseberries, ½-sieve | 2 | 0– 2 3 | — St. Michael, each | 2 | 6– 5 0 |
| Grapes, per lb. | 0 | 9– 2 0 | Plums, ½ sieve | 2 | 0– 4 6 |
| Kent Filberts, 100 lb. | 25 | 0–28 0 | | | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 3 | 0– .. | Mint, green, bunch | 0 | 4– .. |
| Beans, Eng., per lb. | 0 | 4– .. | Mushrooms, per basket | 1 | 0– 1 6 |
| Beet, per dozen | 1 | 0– .. | Onions, per bushel | 6 | 0– .. |
| Cabbages, per dozen | 1 | 6– 2 0 | — Spring, per bun. | 0 | 6– .. |
| Carrots, per bunch | 0 | 6– .. | Parsley, per bunch | 0 | 4– .. |
| Cauliflowers, Eng. lish, spring, per doz. | 2 | 0– 4 0 | Peas, per quart | 1 | 0– 1 6 |
| Celery, per bundle | 1 | 6– 2 6 | Radishes, per dozen | 1 | 0– 2 0 |
| Cucumbers, each | 0 | 6– 1 0 | Small salading, per punnet | 0 | 4– .. |
| Endive, per dozen | 2 | 0– .. | Spinach, per bushel | 4 | 0– .. |
| Garlic, per lb | 0 | 6– .. | Tomatos, per lb. | 0 | 6– 0 9 |
| Herbs, per bunch | 0 | 2– 0 4 | Turnips, new, bunch | 0 | 6– .. |
| Horse Radish, bun. | 3 | 0– 4 0 | Vegetable Marrows, each | 0 | 3– .. |
| Lettuces, Cab., doz. | 1 | 6– .. | | | |
| — Eschalots, doz. | 1 | 0– .. | | | |

POTATOS.—New Potatos are coming very small, and prices range from £3 10s. to £6 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 | 0–13 0 | Ferns, in var., dozen | 4 | 0–18 0 |
| Arbor-vitæ (golden), per dozen | .. | 6 0–18 0 | Foliage Plants, various, each | .. | 2 0–10 0 |
| — (common), dozen | 6 | 0–12 0 | Fuchsias, per dozen | 4 | 0– 9 0 |
| Begonias, per dozen | 4 | 0–12 0 | Lilium auratum, per dozen | .. | 15 0–24 0 |
| Bouvardia, dozen | 9 | 0–18 0 | — longifolium, doz | 9 | 0–18 0 |
| Calceolarias, doz. | 4 | 0– 6 0 | Marguerite Daisy, per dozen | .. | 8 0–12 0 |
| Carnations, 12 pot | 6 | 0–12 0 | Myrtles, per dozen | 6 | 0–12 0 |
| Cyperus, per dozen | 4 | 0–12 0 | Palms in variety, each | .. | 2 6–21 0 |
| Dracæna terminalis, per dozen | .. | 30 0–60 0 | Pelargoniums, per dozen | .. | 6 0–18 0 |
| — viridis, per doz. | 12 | 0–24 0 | — scarlet, dozen | .. | 3 0– 9 0 |
| Euonymus, in var., per dozen | .. | 6 0–18 0 | Rhodanthe, per doz. | 6 | 0– 9 0 |
| Evergreens, in var., per dozen | .. | 6 0–24 0 | | | |
| Ficus elastica, each | 1 | 6– 7 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 | 0– 4 0 | Mignonette, 12 bun. | 1 | 6– 3 0 |
| Bouvardias, per bun. | 0 | 6– 1 0 | Pelargoniums, per 12 trusses | .. | 6– 1 0 |
| Carnations, 12 bun. | 2 | 0– 4 0 | — scarlet, 12 trusses | 0 | 4– 0 6 |
| — 12 blooms | .. | 1 0– 2 0 | Picotees, 12 bun. | .. | 2 0– 4 0 |
| Cornflower, 12 bun. | 2 | 0– 4 0 | Pinks, var., 12 bun. | 1 | 0– 4 0 |
| Eucharis, per dozen | 3 | 0– 6 0 | Pinks, Marechal, 12 bun. | 1 | 0– 3 0 |
| Gardenias, 12 blooms | 3 | 0– 5 0 | Roses (indoor), doz. | 1 | 0– 3 0 |
| Lapageria, white, 12 blooms | .. | 2 0– 3 0 | Stephanotis, 12 sprs. | 2 | 0– 4 0 |
| — red, 12 blooms | .. | 1 0– 2 0 | Sweet Peas, 12 bun. | 2 | 0– 4 0 |
| Lavender, 12 bunch. | 4 | 0– 6 0 | Sweet Sultan, per 12 bunches | .. | 3 0– 6 0 |
| Lilium longiflorum, 12 blooms | .. | 2 6– 5 0 | Tropæolum, 12 bun. | 1 | 0– 1 6 |
| Marguerites, 12 bun. | 3 | 0– 6 0 | | | |

## SEEDS.

LONDON: *Aug. 19.*—The trade now passing in farm seeds is confined wholly to those varieties wanted for present sowing. Trifolium incarnatum sells freely at last week's quotations: supplies are not at all overwhelming. There is a good inquiry for white Mustard at the advanced prices: stocks on hand are now reduced to narrow limits. Rape seed is the cheapest article at present on the market: the values of this season's crop are lower than has been the case for many years past. New winter Tares offer very sparingly, and do not keep pace with the demand. Sowing Rye continues slow. Blue boiling Peas are scarce and wanted. In feeding Linseed the tendency is adverse to buyers. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday the rates obtained for the new Wheats weighing 63 lb. to 64 lb. natural weight, ranged from 34*s.* to 37*s.* for white; and 32*s.* to 35*s.* for red. Old native Wheats sold at 1*s.* per quarter decline on the week, and foreign at 6*d.* to 1*s.*, white descriptions giving way most. Flour, with a dull sale, was not quotably altered in value. Stout qualities of Barley were fairly firm, but the general trade was dull. Beans and Peas sold slowly at late value. Maize was inactive, but about steady in value. Oats were quiet and unchanged.—On Wednesday there was little or no demand for Wheat, and the tone was flat, prices remaining nominally unchanged. Flour was inactive, and unaltered in value; Maize was steady; and Barley, Beans, and Peas met a retail demand at previous rates. For Oats the inquiry was very dull.—Average prices of corn for the week ending August 15:—Wheat, 33*s.* 1*d.*; Barley, 24*s.* 10*d.*; Oats, 21*s.* 11*d.* For the corresponding period last year:—Wheat, 38*s.* 2*d.*; Barley, 29*s.* 2*d.*; Oats, 22*s.* 6*d.*

## CATTLE.

At Copenhagen Fields on Monday English cattle supplies generally were not well up in condition, although some very prime qualities were among them, and with a slow sale prices ruled at about previous figures. Sheep realised about steady value, with a quiet trade. Lambs met less demand, and barely supported late value. The calf trade was without improvement, and the pork trade was reported dull. Quotations:—Beasts, 3*s.* 10*d.* to 4*s.* 8*d.*, and 4*s.* 10*d.* to 5*s.* 4*d.*; calves, 3*s.* to 4*s.* 4*d.*; sheep, 4*s.* to 4*s.* 8*d.*, and 4*s.* 10*d.* to 5*s.* 8*d.*; lambs, 5*s.* 4*d.* to 5*s.* 10*d.*; pigs, 3*s.* 8*d.* to 4*s.*—On Wednesday beasts were steady, and quite as dear as on Monday. Sheep were dull, and 2*d.* per 8 lb. lower. Lambs also were weak, and calves and pigs were quiet, but firm.

## POTATOS.

The Borough Market report states that supplies continue fully adequate to demand, which is slack, at the following quotations:—Regents, 100*s.* to 120*s.*; Magnum Bonums, 105*s.* to 120*s.*; Early Roses, 95*s.* to 110*s.*; Shaws, 90*s.* to 100*s.*; kidneys, 120*s.* to 130*s.* per ton.

## COALS.

The following are the prices current at market during the week:—Bebside West Hartley, 14*s.* 9*d.*; East Wylam, 15*s.* 6*d.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 16*s.* 6*d.*; Hetton Lyons, 14*s.* 6*d.* and 15*s.*; Lambton, 16*s.* 6*d.*; Wear, 15*s.*; Chilton Tees, 15*s.*; Haswell, 16*s.* 6*d.*; Dowlais Merthyr, 16*s.* 9*d.* and 17*s.*; Radford Navigation, 16*s.* 6*d.* and 17*s.*

**Government Stock.**—Consols closed on Monday at 100¼ to 100⅛ for delivery, and 100⅜ to 100⅜ for the account. Tuesday's prices for delivery were as on the preceding day, and 100⅛ to 100⅜ for the account. Wednesday's closing prices were a repetition of those of the preceding day.—The finishing quotations of Thursday were 99⅛ to 100⅛ for both delivery and the account.


# THE COLONIAL MANURE.

*Unequalled for Excellence of Quality and Productive Powers.*

| | s. | d. | |
|---|---|---|---|
| Supplied in Tins, | 1 | 0 | each. |
| " " | 2 | 6 | " |
| " " | 5 | 0 | " |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| " ½ " | 20 | 0 | " |
| " 1 " | 37 | 6 | " |

**Special Prices to the Trade on application.**

The COLONIAL MANURE being powerful and lasting in its effects, very little need be used; consequently it will be found more economical than any other Chemical Manure.

The COLONIAL MANURE is to be obtained from all Nurserymen and Seedsmen in the United Kingdom and the Colonies.

*Sole Proprietors and Manufacturers,*

## HAYMAN & BENJAMIN,

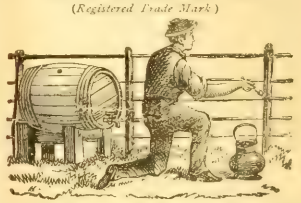
3, 4, 5, 6, CAMOMILE STREET,

LONDON, E.C.,

*who only supply the Wholesale Trade and Export Merchants.*

Oil Paint no Longer Necessary.

HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone. (*Registered Trade Mark.*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requiring no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June 21, 1876.*—Sirs, I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

*CAUTION.*—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

Large Illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to

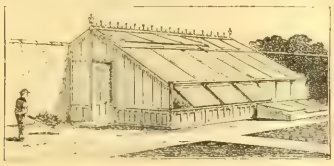
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**Horticultural Builders, Norwich.**

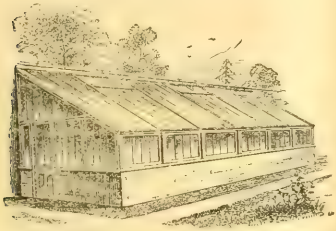


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Carriage paid to any Railway Station in England and Wales; also to Edinburgh, Glasgow, Dublin, and Belfast.

Illustrated Catalogues of Greenhouses and Frames, post-free, two stamps.

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W. H. LASCELLES AND CO. will give estimates for every description of HORTICULTURAL WORK, free of charge, and send competent assistants when necessary.

LASCELLES' NEW ROCKWORK material in various colours. Samples can be seen and prices obtained at 121, Bunhill Row, and 35, Poultry, Cheapside, E.C.

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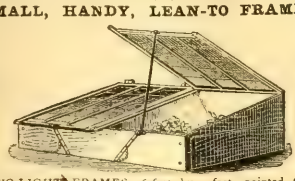
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| | | | |
|---|---|---|---|
| 6 feet long, 4 feet wide, packing cases free | | £2 | 15 0 |
| 12 feet long, 4 feet wide, | ,, ,, ,, | 4 | 15 0 |
| 6 feet long, 5 feet wide, | ,, ,, ,, | 3 | 15 0 |
| 12 feet long, 5 feet wide, | ,, ,, ,, | 6 | 10 0 |

The glass is nailed and puttied in.

**R. HALLIDAY & CO.,**
Hothouse Builders and Engineers,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

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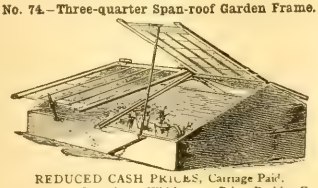
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If with hinges, set-opes and prop, as shown, price **£2 10s. 6d.** Packing 3s., allowed in full if returned.

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**No. 74.—Three-quarter Span-roof Garden Frame.**



REDUCED CASH PRICES, Carriage Paid.

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|---|---|---|---|---|
| No. 2 .. | 8 feet .. | 6 feet .. | £4 12 6 .. | 5s. |
| No. 3 .. | 12 feet .. | 6 feet .. | 6 5 0 .. | 6s. |
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Height in front 11 inches, back 22 inches, centre 32 inches.

Lights made to turn over. Set-opes for ventilating.

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*Price Lists post free. Illustrated Catalogues 12 stamps.*

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| 30 ft. .... | 12 ft. .... | £88 | ..... £11 15 |
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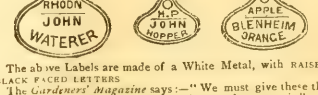


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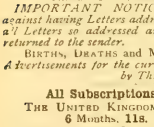
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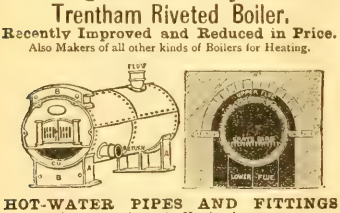
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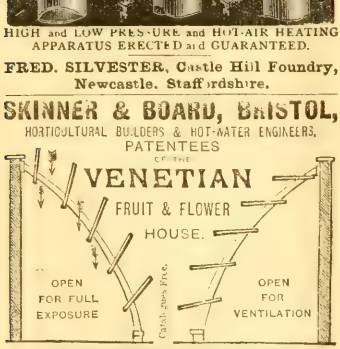
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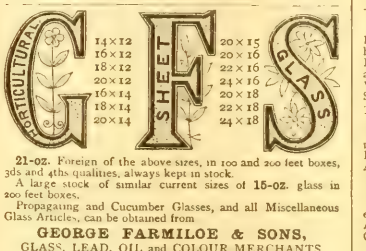
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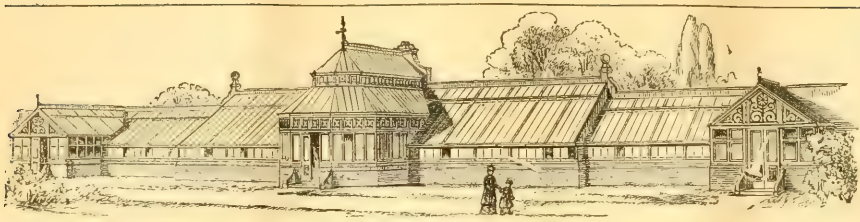
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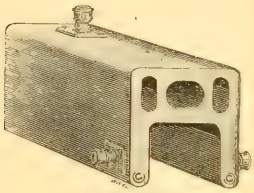


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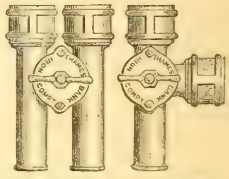
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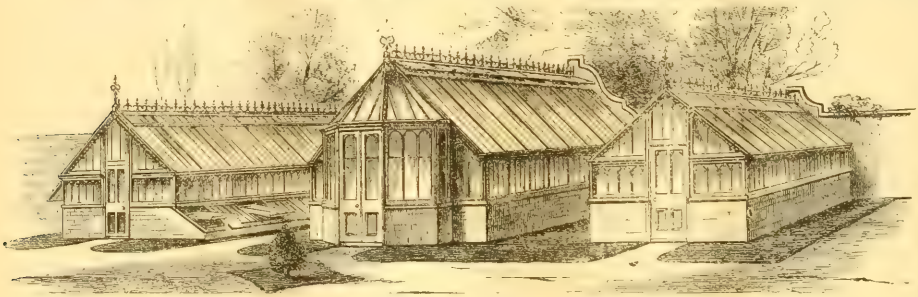
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THE

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JOHN WATERER AND SONS, Bagshot, Surrey, are now offering their two new DEUTZIAS as exhibited at Manchester in May last, viz. :—
DEUTZIA WATERERII (Single White), and D. WELLSII (Double White). Price to Trade, 18s. per dozen.
These are extra large free-flowering varieties, and well suited for Forcing and Cutting purposes.

HERMAN BUDDENBORG, Bulb Grower, Hillegom, near Haarlem, Holland (formerly Buddenborg Bros.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and on his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same patronage and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his own free on demand.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

BULBS TO BE SOLD at Low Prices :—
Double White NARCISSUS. Pheasant's-eye NARCISSUS, and DAFFODILS. A large assortment of these superior Bulbs are offered to the Trade for the Season 1885. Apply to
W. A. BARKER, East Sheen, Surrey.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant. CATALOGUES gratis. KELWAY AND SON, Langport, Somerset.

NARCISSUS ODORUS (CAMPERNELLI) true, 20s. per 1000. Also a few thousand Sweet scented JONQUILS, at 15s. per 1000. All selected and good flowering bulbs.
THOS. GELL, St. Lawrence, Ventnor, Isle of Wight.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Daffodils (Narcissi), and Other Bulbs for Present Planting in Gardens, Meadows, &c.
EDWARD MORSE, Nurseries, Epsom, will send his CATALOGUE of the above Bulbs to any address on receipt of application.

A. M. C. JONGKINDT CONINCK begs to offer :—
CHIONODOXA LUCILLÆ
,, SARDENSIS (Novelty)
SPIRÆA PALMATA ALBA (Novelty) pure white.
Prices on application.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

BOUVARDIAS.—Alfred Neuner, President Garfield, Dazzler, Humboldti, corymbiflora.
Strong bushy plants in thumbs, 2s. 6d. per dozen, 18s. per 100.
Ditto in 60's, 3s. per dozen, 21s per 100.
Ditto in 48's, 4s. per dozen, 30s. per 100,
WILLIAM POTTEN, Camden Nursery, Sissinghurst, Staplehurst.

FOR SALE, 12,000 MAIDENHAIR FERNS, from boxes, good Plants, at 5s. per 100; FERNS in 8 varieties, in pots, at 10s. per 100, or 2s per dozen, sent by post or otherwise. Post-office Orders payable at Leyton Green.
T. BALDWIN, Edith Nursery, Burchall Road, Leyton.

Aberdeen Favourite Strawberry.
JAS. CONNON, NURSERYMAN (late Connon & Reid), Aberdeen, who sent out the above, can now offer Plants by 100, 1000. Price on application.
Leaton Nurseries, and 33, Broad Street.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., REQUIRE a quantity of fine Flowers for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of CHOICE FRUIT and FLOWERS.

WANTED, Bedding Zonal PELARGONIUM CUTTINGS State sorts, quantities and prices. H. CANNELL AND SONS, Swanley, Kent.

WANTED, BETULA DALECARLICA. A few good Specimens Wanted in the Autumn. State size and price to
JNO. JEFFERIES AND SON, Royal Nurseries, Cirencester.

OUR GENERAL BULB LIST, No. 77, is now in the Press. Send for a copy.
NEW PLANT AND BULB COMPANY, Colchester.

CŒLOGYNE CRISTATA.—Six Pans of the above for Sale. Average 42 growths. Guaranteed clean and in perfect health. No reasonable offer refused.
J. EASTER, Rathdaire, Monasterevan, Ireland.

Ornamental Plant Nursery.
JULES DE COCK, Ghent, Belgium, offers to the Trade :—AZALEAS INDICA, MOLLIS, and PONTICA : DEUTZIA, CAMELLIA, FERNS, PALMS, and SPIRÆA JAPONICA, in large quantities.
CATALOGUE free on application.

PICTA, NEW, BEGONIA REX TYPE.—Silver centre, bright light green margin with silver spots, very beautiful. Good plant, 2s. 6d., post-free.
TEA ROSES, own roots, best varieties, 5s. per dozen, carriage paid. Strong plants NIPHETOS Marie Henriette, &c.
MAIRIS AND CO., Weston in Gordano, Bristol.

East Lothian Intermediate Stocks.
THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., & 5s. each colour. Price to the Trade on application.
By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

BOUVARDIAS and PELARGONIUMS, in most popular sorts, strong, in thumbs, 21s. per 100.
FERNS, PTERIS and CYRTOMIUMS, good plants, in thumbs, 18s. per 100.
TEA ROSES, in 48's, 60s. per 100, and extra large Maréchal Niel, 24s. per dozen. All for cash only.
ROBERTS BROS., East Grinstead, Sussex.

PRIMULAS, CINERARIAS, PRIMULAS. Fine plants, ready for single pots, of the same well-coloured and large-flowered strains we have distributed for fourteen years, 1s. 6d. per dozen, 10s. per 100, 22s 6d. for 250.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, and 12, Market Street, Manchester.

The Best Yellow Carnation.
PRIDE of PENSHURST.—A marvellously free bloomer and vigorous grower. Perfectly hardy. Forces well. Plants ready about September. Price 2s. 6d. each, 4s. a pair. Cash with Order. Trade price on application.
F. BRIDGER, Penshurst, Kent.

Bulb Catalogue.
LAING AND CO.'S New Price List for this season is now ready, free on application, containing all best selections of Hyacinths, Tulips, Narcissus, Crocus, &c. Also Roses, Fruit Trees, Shrubs, &c. Early Orders are solicited.
JOHN LAING AND CO., Forest Hill, S.E.

PALMS, specially Hardy Grown for Cool Greenhouses and Dwelling-houses.—Latania borbonica and Seaforthia elegans, splendidly foliaged, 20 inches high, 12s. per dozen; sample plants, 18 inches high, 12 inches high, 25s. per 100; sample 12 for 4s. All packages and parcels post free. Postal orders to GARDENER, Holly Lodge, Stamford Hill, N.

"Irradiating the Present, Restoring the Past."
THE "ORIGINAL" LITTLE BOOK of DAFFODILS.—Is great variety, Harvested and Ripened well for best results with WM. BAYLOR HARTLAND'S care and culture, on his Private Grounds, Temple Hill, Cork. Numerous "Original" Illustrations and 130 sorts to select from. The Book, one of the best things yet published, post-free, 1s.
HARTLAND'S Old Established Garden Seed Warehouse, 24, Patrick Street, Cork.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s.
BARR AND SON, King Street, Covent Garden, W.C.

ED. PARRÉ, Ghent, Belgium.—Special Cheap Offer.—20,000 very well budded and fine AZALEA INDICA, reduction, 25fr per 100. 100,000 HEDERA JAPONICA, very large clumps, for forcing, from 8s. to 12s. per 100. Price LIST for Nurserymen of Commercial Plants post-free on application.

WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application. It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad.
WATKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street, Strand, W.C.

Now Ready.
TEA and NOISETTE ROSES, in pots, of best sorts only, in great quantity, and of best possible quality. Priced LIST gratis. A sample dozen, carefully packed for travelling, will be put on Railway on receipt of 13s. 6d.
EWING AND CO., Sea View Nurseries, Havant, Hants.

LOVEL'S STRAWBERRY RUNNERS Strong, healthy, and well-rooted.
Sample of Plants, 3d. Price LIST free.
W. LOVEL AND SON.
Strawberry Growers. Driffield.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

## SALES BY AUCTION.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### The Valuable Collection of Orchids,

Formed by G. Heriot, Esq.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 3, instead of the date previously announced, at half-past 12 o'Clock precisely, the valuable COLLECTION of ORCHIDS formed by G. Heriot, Esq., of Cholmeley Park, Highgate, who is giving up their culture. Amongst other good things will be found a fine specimen of Vanda Cathcarti, V. cœrulea, fine variety; Cœlogyne Lemoniana, C. cristata, Trichoglottis fasciata, very rare; Dendrobium cloezpterum, Angræcum sesquipedale, A. eburneum, Dendrobes, Cattleyæ, Odontoglossum Alexandræ, &c.: also a magnificent COLLECTION of PHALÆNOPSIS in variety, mostly specially imported by Mr. Heriot, &c.

On view morning of Sale, and Catalogues had.

### Orchids in Flower.

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 17, and he will be glad if Gentlemen desirous of Entering Plants for this Sale will please send particulars of same as soon as possible.

### Dutch Bulbs.—Great Unreserved Sales.

Every MONDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, about 800 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, in excellent quality, and lotted to suit the Trade and private Buyers.

On view morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

### Acton, W.

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Gardens, Shalemar, Horn Lane, Acton, W., on TUESDAY, September 1, at 1 o'Clock precisely, without reserve, a quantity of well grown GREENHOUSE PLANTS, comprising Roses, Camellias, Azaleas, 500 Carnations, 1000 Chrysanthemums, best named sorts; Ferns, three LAWN MOWERS, GARDEN PUMP, &c.

On view day prior to Sale. Catalogues had of Mr. W. RAVENHILL, the Head Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### Eastbourne.—Dissolution of Partnership.

UNRESERVED CLEARANCE SALE of the whole of the well-grown stock of STOVE and GREENHOUSE PLANTS by order of Messrs. G. T. Scott & Co., who are dissolving partnership.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, on WEDNESDAY, September 2, at 12 o'Clock precisely (in consequence of the large number of lots), without reserve, the whole of the well-grown stock, comprising 2000 PALMS of sorts, amongst which are some splendid specimens; 1500 MAIDENHAIR FERNS, in 48 and 32 pots, well furnished; 2000 AZALEAS, in 48 pots; 250 very fine plant ARAUCARIA EXCELSA, 100 large EUCHARIS, specimen White AZALEAS and CAMELLIAS, 25,000 Golden EUONYMUS, and quantities of other stock too numerous to mention, lotted to suit the Trade and large Buyers.

On view one week prior to Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Whetstone, Middlesex.

Nine miles from London, and four minutes' walk from Totteridge Railway Station.

IMPORTANT TO MARKET GARDENERS, LAND SPECULATORS, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Davis (in consequence of the failing health of Mr. Davis, jun.) to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, September 3, at 2 o'Clock precisely, in Three Lots:—

Lot 1, comprising the valuable and attractive FREEHOLD MARKET GARDEN, distinguished as The New Lodge Nurseries, Whetstone, N., containing an area of about 4 acres, superiorly built Range of Glass, containing a superficial area of nearly 80,000 feet of glass, and heated by about 20 000 feet of 4-inch piping, and all other requisite appliances for growing plants and produce to the greatest perfection; the whole of the luxuriant and productive Vines are planted out; the substantially built Dwelling-house, with two Cottages, Stabling, and numerous other Trade Erections. This Lot will be sold as a going concern, together with the Goodwill of the long-established Business.

Lots 2 and 3 will comprise Two valuable Blocks of eligible FREEHOLD BUILDING LAND, containing a total area of about 13 acres, with commanding frontages to Oakleigh Road, presenting a desirable investment for subdivision into Building Plots.

The Auctioneers would wish to call the special attention of Market Gardeners to Lot 1. The property is in complete working order, and it is indeed seldom that such an opportunity presents itself of securing a first-class going concern under similarly favourable circumstances. A large portion of the Purchase Money may remain on Mortgage if desired.

May be viewed. Descriptive particulars, with Plans, may be had on the premises; of Messrs. BERRY, BINNS, AND LINCOLN, Solicitors, 27, Chancery Lane, W.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, E.C.

### Lea Bridge Nurseries, Leyton, E.

GREAT ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Mr. John Frazer, on the Premises, as above, on WEDNESDAY, September 16, several thousands of unusually well grown WINTER BLOOMING HEATHS, and OTHER PLANTS.

Further particulars will appear next week.

### Friday Next.

CATTLEYA GASKELLIANA—large imported masses.
CATTLEYA GASKELLIANA in flower.
WARSCEWICZELLA Species, in flower.
ANGRÆCUM LEONIS, in flower.
CATTLEYA DOWIANA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL the above, with other ORCHIDS, by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 4, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

### Lee, Kent, S.E

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, adjoining Lee Railway Station, on TUESDAY, September 15, at 11 o'Clock punctually, without reserve, 20,000 WINTER BLOOMING HEATHS, beautifully grown and well set with bloom-buds, including 15,000 Erica hyemalis, 3000 gracilis, 1000 Caffra, and large quantities of ventricosa and other varieties; large numbers of Erica gracilis autumnalis in 60-pots for growing on; 7000 well-berried SOLANUMS, 1000 CYCLAMEN PERSICUM, 1000 GREVILLEA ROBUSTA, 2000 ADIANTUM CUNEATUM, 2000 LOMARIA GIBBA, and other choice decorative Ferns in 48-pots; 2000 GENISTAS, 6000 BOUVARDIAS, including the new double Sang-Lorrain and V. Lemoine, also Alfred Neuner and President Garfield; 1000 decorative PALMS, 1000 EPACRIS, double white PRIMULAS, Maréchal Niel and other TEA ROSES, extra strong STEPHANOTIS, HOYAS, English-grown CAMELLIAS and AZALEAS, 3000 CLEMATIS FLAMMULA, one year transplanted, and other stock.

May be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—Messrs. P. & M. desire to call the attention of intending Purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate sale, and the whole will be found in an equally good condition as in former years.

### Tottenham.

GREAT ANNUAL TRADE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to SELL by AUCTION, on the Premises, the Brunswick Nursery, Tottenham, on THURSDAY, September 17, several thousands of WINTER-BLOOMING HEATHS, and OTHER PLANTS.

Further particulars will appear next week.

### Sidcup, Kent, S.E.

GREAT ANNUAL TRADE SALE of WINTER FLOWERING HEATHS, and other Plants, forming one of the largest collections ever offered to the Public. The stock of Heaths is unrivalled, the plants being particularly well grown and beautifully set with flowers, and well worthy of an inspection by intending purchasers.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, the Kingslands Nursery, Sidcup, ten minutes' walk from Pope Street Station (S.E.R.), on FRIDAY, September 18, at 11 o'Clock precisely (there being nearly 1100 Lots), an immense quantity of unusually well-grown WINTER BLOOMING HEATHS, and OTHER PLANTS, including:

| | |
|---|---|
| 20,000 Erica hyemalis, well set. | 10,000 Cytissus racemosa, in 48-pots. |
| 10,000 ,, gracilis. | 5,000 Adiantum cuneatum, in 48-pots. |
| 5,000 ,, mesanthera. | 5,000 Solanums, in 48-pots. |
| 5,000 ,, Cavendishi. | 5,000 Bouvardias of sorts, in 48-pots. |
| 5,000 ,, magnifica. | 3,000 Cyclamen, in 48-pots. |
| 10,000 ,, persicina minor. | 2,000 Grevillea robusta, in 48-pots. |
| All in flowering pots. | 59,000 Heaths of sorts, in 60-pots, for growing on. |
| 1,000 Tree Carnations, in 48-pots. | |
| 1,000 Double Primulas, in 48-pots. | |
| 300 Camellias, well budded. | |

The stock is in now on view. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### St. Martin's, Chichester.

TO GRAPE GROWERS, FRUITERERS, CAPITALISTS, AND OTHERS.

Sale of a FREEHOLD GARDEN, known as The Graperies.

MESSRS. WYATT AND SON will SELL by AUCTION, on THURSDAY, September 17, at the Dolphin Hotel, Chichester, at 3 o'Clock precisely, by direction of Mr. Isaiah Baker, who is retiring from business, a very valuable and productive FREEHOLD GARDEN, known as THE GRAPERIES, ST. MARTIN'S, CHICHESTER, with eight Glasshouses thereon in capital condition, heated with flues and hot-water pipes, having a length of 344 feet, and an area of 9546 feet of glass. Four of the largest houses are well stocked with the choicest Vines for market produce and in full bearing; the other four are used as Strawberry and Tomato houses. The garden is planted with Plum, Pear, and Mulberry trees, and well stocked with fruit bushes. There is also a plentiful supply of water from a pump in the garden, three large water tanks, and a Tool and Fowl-house thereon. The above garden is situated in the centre of the City of Chichester, with a carriage entrance from Little London. It has been for many years in the possession of Mr. Isaiah Baker, who has done a lucrative trade with the London market and trade customers at Southsea, the Isle of Wight, Salisbury, and other places.

Possession will be given at Christmas next, with the exception of the vineries where the Grapes are not then cut, with right of access thereto. One half of the purchase money may remain on mortgage at 4½ per cent.

The garden may be viewed on application to Mr. ISAIAH BAKER, The Graperies, St. Martin's, Chichester; and particulars, with conditions of Sale, obtained of Messrs. RAPER AND FREELAND, Solicitors, West Street, Chichester; and of Messrs. WYATT AND SON, Estate Agents, Valuers, and Auctioneers, East Street, Chichester, and Auction Mart, Havant.

### To Market Gardeners and Others.

WANTED, on LEASE, from 20 to 25 Acres of good GARDEN GROUND, with House and Buildings, within 10 miles of Covent Garden.

A. 12, Cumberland Villas, Kew.

### Freehold Investment.

FOR SALE, high-class SHOP PROPERTY. To pay 5½ per cent. immediately, with increasing rentals. Address, HILL BROS., Broadway, Streatham, S.W.

### California.

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. T. THEOBALD AND CO., 419, California Street, San Francisco, California.

### Adjoining Station, North Kent Line

FOR IMMEDIATE DISPOSAL, a Flourishing NURSERY BUSINESS. Four modern built Glass Houses, 100 by 16 feet, and 4 Acres of Land. Partnership entertained.

HARCOURT, MILLS, AND TITCHMARSH, Auctioneers, Woolwich.

TO BE DISPOSED OF, on easy terms, on account of ill health, an excellent compact SEED BUSINESS in the West of England, with an old-established Insurance Agency attached. A rare opportunity for an energetic Seedsman with a moderate capital.

Apply in the first instance, to Mr. J. S. JOHNSON, 209, Brooke Road, Clapton, E.

### To Nurserymen.

FOR SALE, or TO BE LET, an Old-Established FREEHOLD NURSERY, on high road, close to a city. Noted for Roses and Clematises. Nearly 12 acres, 2 acres covered with Fruit Trees and Fruiting Bushes; Dwelling-house, and Seed Shop; convenient Glass Houses, Barn, Stables, Piggeries, &c.

Apply to Mr. G. B. KENNETT, Solicitor, Norwich.

FOR SALE, or LET ON LEASE, a NURSERY, 2 miles from Cambridge (established twenty years), containing about 14 acres of Land (part if preferred), two good Dwelling houses, 10,500 square feet of Glass, in good condition, heated by Hot-water. Stock taken at valuation.

For particulars apply, 31, Market Hill, Cambridge.

### In the Best Grape Growing and Tomato District in ENGLAND.

TO BE LET, at Christmas, Four GLASS HOUSES, each 100 by 20 feet, complete, with modern Boilers, 4 rows of Hot-water Pipes, and about an Acre of Ground.

Apply by letter to GRAPE, May's Advertising Offices, 159, Piccadilly, W.

TO SEEDSMEN and SEED GROWERS. —An excellent opportunity presents itself for Establishing a Business of this kind at Stevenage, 28 miles from London, on G. N. R.

Apply to Mr. BAILEY DENTON, Stevenage, Herts.

### To Landed Proprietors, &c.

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

### The Nurseries, Keighley.

J. CARTER respectfully invites an inspection of his Nurseries. The stock includes every variety of Plants suitable for the locality. FOREST TREES are grown in quantity, and planted widely apart so as to form stout plants. SYCAMORES, from 1 to 12 feet, are especially good. Of RHODODENDRON "CAUCASICUM ALBUM" I have several thousands, nearly all set with bloom-buds and are grand bushy plants for either borders or forcing. This is an excellent variety where white flowers are wanted in spring. Dwarf ROSES, LAURELS of sorts, up to 5 and 6 feet, are good as can be; and I feel sure that any one favouring me with a visit will be much pleased.

### The Rose and Palm Nursery,

Gentbrugge, near Ghent, Belgium. The Owner,

OCTAVE BURVENICH-DE WINNE, begs to offer his splendid and renowned stock of 50,000 AZALEA MOLLIS—to be seen every day in his place:—

| | | |
|---|---|---|
| Nice bushy stuff, showing from 20 to 30 buds, per 100 | £4 | 0 |
| ,, ,, ,, 12 to 20 ,, ,, | 2 | 10 |
| ,, ,, ,, 7 to 12 ,, ,, | 1 | 15 |

General BELGIAN STOCK at most moderate prices.

5000 ADIANTUM CUNEATUM and GRACILLIMUM, LOMARIA ZAMIÆFOLIA, at 12s. per 100

### Strawberry Plants.

STRAWBERRY PLANTS.—Warranted all from Fruiting Plants, and will produce a large crop of fine fruit next year:—

IMPROVED BLACK PRINCE, ALPHA, CRIMSON PINE, EXQUISITE, TRIOMPHE DE PARIS, VICOMTESSE HERICART DE THURY, KEENS' SEEDLINGS, and other really fine varieties, 3s. per 100, carriage free.

LAXTON'S GRAND NEW STRAWBERRY, KING OF THE EARLIES, Fruiting Plants, 2s. per dozen, free.

S. SHEPPERSON, Florist, Prospect House, Belper, Derbyshire.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, HOYAS in Pots, &c. An inspection is invited.

Trade CATALOGUES forwarded on application.

The ANNUAL SALE by AUCTION will be held on TUESDAY, September 15.

Burnt Ash Lane Nurseries, Lee, S.E.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Intending purchasers of DUTCH BULBS are invited to read ANT. ROOZEN & SON'S CATALOGUE for 1885, and see the large saving effected by DEALING DIRECT WITH THE GROWER. The Catalogue, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants, and also particulars as to FREE DELIVERY, will be sent, POST-FREE, on application to them, or to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

Seedsmen to the Queen. by Special Appointment.

F. & A. DICKSON & SONS,
106, Eastgate Street, Chester
DICKSON'S Specially Selected Strains of FLORIST'S FLOWERS are unsurpassed.
PRIMULA, CALCEOLARIA, CINERARIA, GLOXINIA, CYCLAMEN, &c.
VEGETABLE and FLOWER SEEDS for Autumn and Spring Sowings.
DICKSON'S Improved MUSHROOM SPAWN is THE best. See Testimonials.
TOBACCO PAPER, GARDEN IMPLEMENTS, and SUNDRIES.
SEEDS, BULBS, PLANTS, &c., of best quality and at most moderate prices.
Free Deliveries by Post or Rail.
CATALOGUES Gratis and Post-free.
F. & A. DICKSON & SONS,
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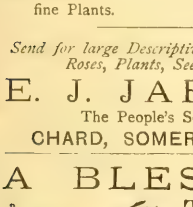
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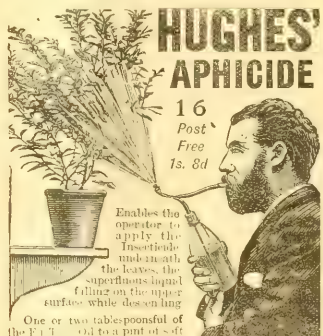
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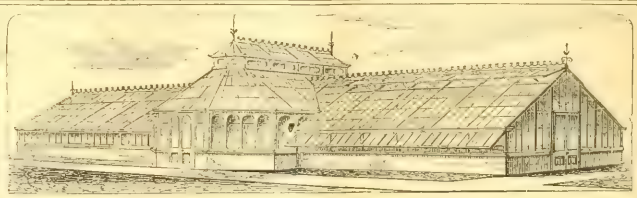
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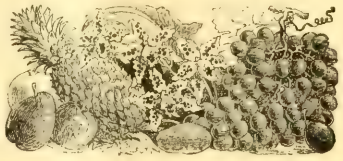
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THE

# Gardeners' Chronicle.

*SATURDAY, AUGUST* 29, 1885.

## OSTERLEY PARK.

OSTERLEY PARK is the only private residence within 12 miles of St. Paul's Cathedral which still offers to the admiring view of visitors an expanse of greensward reaching 650 acres in extent—a good old English park, heavily laden and beautifully timbered. Railways threaten it, and populous places surround it. A mile to the north is Hanwell, with Ealing a little on the right, the spires of each form landmarks as seen from the house as that of Harrow, is still further off. On the south are Hounslow, Isleworth, Twickenham, and Richmond, all opened up many years ago, as are the good old towns of Brentford and Kew, due east. There are other great houses in the neighbourhood; Sion House is within 2 miles, and Ham House, a residence of the Earl of Dysart, is just across the river from Twickenham; but, although the thickly-populated world of Greater London roars louder and nearer Osterley Park than it did of old, and a railway station, called by its name, has been opened within a stone's throw of one of its lodges; the Park itself is as quiet within its walls as when the herons built on the high trees, or when Queen Elizabeth honoured here her favourite merchant prince, Sir Thomas Gresham, as his guest.

Three hundred years and more have passed since this worthy knight, the founder of the Royal Exchange, received Osterley as a gift from the Crown, built a stately mansion, but not the present one, to replace the old manor-house, and enlarged the park by enclosing some common ground, much to the annoyance of certain poor folk in the neighbourhood.

During the visit of Queen Elizabeth, her majesty, having in view the recent alterations, observed that the court before the house would be improved in appearance by dividing it with a wall. Sir Thomas sent over-night to London for workmen, and in the morning the Queen was surprised to find that the improvement she had suggested had been effected. "Ah!" said one of the wits, "no wonder that Sir Thomas Gresham, who built the Exchange, can so soon change a building." In reference to some family disputes which, of course, the Court had heard of, another gossip remarked that any house is easier divided than united. According to report, Sir Thomas Gresham found both pleasure and profit in starting some unusual manufactures within the boundaries of his park, including oil and corn mills, and a paper manufactory of his own device, the first of the kind in England. All trace of these works has long since been removed, and the ample sheets of water, fed by a small stream which drove the machinery, are now purely ornamental.

It is always interesting to reflect on the striking changes that have overtaken great estates, and nothing more remarkable has happened in connection with Osterley Park than the growth of its surroundings, as already noticed, and the augmented value of the land which Sir Thomas cribbed from the adjoining common as being of small account, and which

in its present improved condition as a fruit garden carefully cultivated for the supply of the London market, is worth a rent of more than £10 any acre; so that the 60 acres of orchard within the boundaries of the old park are worth quite twice as much as the 660 acres which Sir Thomas Gresham emparked and empaled. Those, then, who regret the enclosure of commons which could rarely attain a higher value than about half-a-crown an acre, should bear in mind the enhanced value of the ground. Half-a-dozen idle "commoners" and squatters fed their geese and donkeys on land which the Earl of Jersey, the present owner of Osterley Park, lets to a fruit grower, who employs forty or fifty respectable workpeople.

Osterley Park found another millionaire owner and great improver in Mr. Francis Child, the great banker of Fleet Street, the Rothschild of his time; and during his reign and that of his brother and successor, Robert, the present house was built—a quadrangular red-brick mansion with stone facings, a cupola at each corner, and a handsome flight of steps on the north front leading to a covered court. At this period the famous collections of pictures and books were made. *Sic transit!* It often happens in families that sons fail and daughters succeed, and it was so with the Childs when the granddaughter of Robert inherited Osterley. She, of course, married; and thus during several generations the place has belonged to the Earls of Jersey, whose chief residence is elsewhere—at Middleton Park, Oxfordshire.

We are told that the great banker received here, in his day, ambassadors, foreign agents, loan-mongers, and other company of the kind. His descendant, the present owner, exercises a still more bounteous hospitality in the form of fashionable garden parties and of *fêtes* of another description, when the park becomes the camping-ground of numerous schools and useful societies. A large orangery, strongly built by Mr. Child after the fashion of the last century, is at the present time filled with forms and benches which, with a copper in the corner, suggest the mild but joyous festivities which young people, and their seniors too, delight in. Mr. Child spent large sums of money on the gardens, but as Lord Jersey and his family are only here about six weeks in the summer, though the copper boils all the same for their absence, the extensive kitchen gardens formed by Mr. Child are not now required by them, and the ground managed by the gardener, Mr. W. King, is chiefly ornamental shrubbery and lawn.

The grounds are laid out in that best old English style which is free from formality, and which, after the lapse of a century, is now as worthy of a great house as the more elaborate style of terraces and extended grounds, adorned with the most costly ornaments. The house is surrounded on the north, south, and east sides by the park and lawns, the latter dividing it from the former by a not very wide margin, except on the east, where the best and biggest lawn, reaching to the water, is beautifully planted with great Cedars of Lebanon breaking from the ground and producing heads almost unexampled in size, and full of branches. Several great Planes stand near the house, and especially a grand one in the park. The English Elm, tall and stately, is the prevailing tree; but there are others, and especially some Spanish as well as Horse Chestnuts, which are also much admired. The pale red colour of the house is relieved by some creepers, Ivy, and a large Wistaria, and Bignonia radicans, with its conspicuous trumpet-shaped blossoms, on the east wall. *H. E.*

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ST. PETER'S, HAMMERSMITH, AND DISTRICT GARDENERS', &c., IMPROVEMENT SOCIETY.—This Society will hold its show on Thursday, November 19.

# New Garden Plants.

ERIA (HYMENARIA) LINEOLIGERA, *n. sp.**

A VERY interesting species, with a fusiform pseudobulb, bearing four rather thick cuneate oblong-lanceolate leaves of parchment-like texture. The nearly basilar ascending raceme has retroflexed lanceolate acute orange bracts, which are nearly as long as the stalked ovaries. The white flowers are very thin; the sepals and petals lanceolate acute, curved. Chin moderate; lip cuneate dilatate, trifid; side-laciniæ triangular, curved; shorter than the mid-laciniæ—very short. Projecting mid-laciniæ triangular apiculate crenulate undulate, three keels from the base to the disk. There are purple lines on each side. The peduncle and stalked ovaries have very few and very short thin hairs, which are scarcely seen. Hence I regard the species as best placed in Hymenaria, notwithstanding the presence of some such organs. The plant was imported from Siam by Mr. T. Christy, F.L.S., of Sydenham, where it flowered, under the management of Mr. E. Leaney. Mr. Christy was also so kind as to send me a sketch, so that I could understand the position of the peduncles. *H. G. Rchb. f.*

SELENIPEDIUM KAIETEURUM, *N. E. Br., n. sp.*

Leaves 7—9 inches long, 2—2½ inches broad, lanceolate-oblong, acute, glabrous, very coriaceous, bright dark green above, paler beneath. Scape many-flowered, pubescent, with complicate, acuminate, glabrous sheaths and bracts, of an olive-green, with brownish-red nerves, and suffused with the same colour. Ovary 2½ inches long. Dorsal sepal 18—20 lines long, 9 lines broad, oblong, hooded at the apex, margins recurving, crisped-undulate; lower sepal 15—16 lines long, 1 inch broad, elliptic, entire, or slightly bifid at the apex, concave, margins crisped-undulate; both sepals are pale green, with reddish-brown nerves on the outside; they are pubescent on both surfaces, but more minutely within. Petals 2½ inches long, 6—7 lines broad, falcately linear-oblong, apex very obtuse and emarginate, margins recurved, undulate and ciliate, the cilia towards the apex becoming longer, and dark purple-brown; inside and out the petals are pale green, prettily marked with brownish-crimson veins; on the outside towards the margins and apex, and on the inside at the base, and along the lower margin, they are pubescent. Labellum 1½ inch long, ¾ inch broad, with the inflexed sides very obtusely rounded, glabrous, bright light olive-green, with brownish-crimson veins, and densely dotted on the inflexed sides, and more sparsely on the front part of the lip, with the same colour; staminode somewhat squarely trapezoid, pubescent, greenish-white.

Although the leaves are not variegated, and the flowers are not brilliantly coloured, yet on the whole the plant is rather a pleasing one, and many Orchid lovers would consider it a great prize. The plant was sent to Kew by Mr. G. S. Jenman, who discovered it growing abundantly on the rocks, under the magnificent Kaieteur Fall, on the Potaro River, British Guiana, where it is not very likely to be disturbed by collectors for some time to come; it is No. 879 of Mr. Jenman's dried specimens. Specifically it is allied to S. Lindleyana, but differs in having more glabrous sheaths and bracts, and differently coloured flowers. *N. E. Brown.*

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## THE CARAWNDA BUSH.

THIS is one of the Apocynaceæ, and known to botanists as Carissa carandas. It is a small bush, not much higher than a man, with densely-packed dark green shining foliage, and stipular sharp thorns, about an inch long. The leaves are coriaceous, and about an inch long, and about as broad, sometimes slightly emarginate, at others oval. The flowers are small, white, and Jasmine-like. They come out in the hot weather. But the charm of this bush is in July, when its half-ripe waxy berries hang in clusters all over the bush. They are of the size of Olives, a brilliant red on one side, and a cream on the other—a most æsthetic combination. No red-cheeked Apple could be handsomer; and these berries are infinitely more elegant and decorative. When ripe they are of a uniform dark red, with a bland milky juice. There is another variety with dull red and green berries, which turn of a deep plum colour when ripe. Their juice is then of a rich beet-red. The Carawnda fruit is sour, and much used by natives for making "chutney." The little unripe berries, with the skin and seeds removed and cooked in pastry with sugar and Cloves, make a fair substitute for Apple tart. If this elegant bush could be grown in pots in English conservatories and made to fruit, it would really be a great acquisition. The beauty of its berries, hanging in clusters, against the shining dark green foliage, is unique. For decorative purposes, worked in vases with fine foliage and some elegant white flower, such as Tabernæmontana, or Evening Primrose, its value ought to be great. I do not remember ever having seen it noticed or pictured anywhere as a decorative or useful plant. In India a hedge of Karwanda of the red and cream variety, would be worth seeing in the month of July. The wild Carissa carandas is found in many parts of India, and if so handsome and useful a bush has come from this wild thing, it stands to reason that if worked and selected further, by crossing the two cultivated varieties, something much finer and more useful might be developed. *E. Bonavia, M.D., Etawah, July 21.*

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## HARDY PLANTS.

OURISIA COCCINEA.—This, one of the prettiest and most distinct of hardy plants, cannot well be over-praised, for it is certainly a decorative subject of the highest merit, and one of which we cannot have too much. It is said to be shy—indeed, some persons cannot get on with it at all, do what they will to coax it, their summing up being that it is a fickle plant, difficult to grow, and a shy bloomer. In some gardens, and under certain conditions this may be true, but with a reasonable amount of care in the selection of a suitable soil and situation—for it will not do everywhere and in any soil—the above difficulties will ere long be overcome, and the plant be found as easily managed as any other alpine. A cool, rather damp, stiffish soil and shady situation—at least, where not exposed to the mid-day sun—are its chief requirements, and where it will when once established slowly creep about, and form grand masses of its wavy, deep green foliage. The lax clusters of dazzling scarlet flowers, although never borne in great profusion, are both distinct and beautiful, and set off to the best advantage by the intense deep green and finely cut foliage.

HOUSTONIA CŒRULEA

is a pretty and neat little North American plant, that is only suited for associating with the smallest and choicest of alpines. This delicate plant produces dense, low cushions of leaves, and an abundance of pale blue flowers, surmounted on stems rarely exceeding a couple of inches in height. There is also a white-flowered form, but as it is in every respect, unless colour of flowers, similar to the one under consideration, we will pass it by. It is of the easiest culture, succeeding well in sandy peat, and where fully exposed, although in ordinary garden soil and in both sun and shade, we have it thriving luxuriantly and flowering freely for three months in the year.

THE ALPINE HUTCHINSIA (H. ALPINA)

is in every way a fit companion for the latter plant. Dwarf in habit—for it seldom reaches 2 inches in height—with deeply cut shining foliage, and small glistening white flowers, this is a very desirable rock plant, and one which, from its case of culture, can be specially recommended. For the ordinary border it is also well adapted, and when planted in good free loam soon becomes a compact mass of pure white very enduring flowers. It is a native of South Europe, and a perfectly hardy evergreen in our climate generally,

ONONIS ROTUNDIFOLIA,

although introduced to our gardens more than 300

* *Eria (Hymenaria) lineoligera* n. sp.—Pseudobulbis fusiformibus bi-tripollicaribus, apice quadrifoliatis (vere non semper); foliis pergamenteis cuneato-lanceolatis acutis (4—5 pollices longis, duas tertias latis); pedunculo subbasilari erecto levissime pilerubo, bracteis lanceolatis acutis deflexis ovariis pedicellatis æquantibus; sepalis lanceolatis acutis, lateralibus curvis, petalis falcatis; labello cuneato oblongo trifido, lacinius lateralibus triangulo falcatis acutis abbreviatis, lacinia mediana triangula crenulata, carinis ternis a basi in discum. Licet lavissime puberula in pedunculo ac in ovariis pedicellatis tamen. Hymenaria adscianda visa. Ex Siam imp. cl. T. Christy. *H. G. Rchb. f.*

years ago, is but too little known as a neat evergreen flowering shrub that is well adapted for the rougher parts of the rock garden. Growing from 12—20 inches in height, with roundish, trifoliate leaves and handsome, rose-coloured flowers, which are well set off by the thick deep green foliage, it will be seen that this is both a distinct and pretty plant, and, being of the easiest culture, it deserves a place wherever choice old-fashioned flowers are grown. As to soil it is by no means particular, thriving well in that of very opposite characters, although preferring good loam and a rather dry situation.

The Olympic St. John's Wort (Hypericum olympicum),

with its plentiful production of bright yellow flowers nearly as large as the common Rose of Sharon (H. calycinum), is just now one of our most attractive rock or border plants. A bluish glaucous hue pervades the whole plant, and sets off to perfection the large golden flowers. Planted in loamy, rather dry soil, this pretty St. John's Wort soon forms a bushy, vigorous plant of the most pleasing description, and is alike suited to the rockwork or herbaceous border.

Several other members of this family are well worthy of attention, and amply repay by their distinct foliage and abundance of bloom the small amount of attention that is required to be expended on their cultivation. Amongst these we would particularly note H. repens, which makes a lovely carpet, dotted over with bright yellow flowers; H. empetrifolium, a dwarf bushy shrub, not unlike some of the Heaths; and our native Tutsan or Sweet Amber (H. androsæmum). The latter is, indeed, a worthy companion to any of the exotic species, for, apart from its handsome foliage and clustered cymes of flowers, it bears a very attractive, berry-like capsule, pinkish at first but becoming of a glossy black as winter sets in.

Stonecrops.

Amongst the numerous Stonecrops none is at present more lovely in both leaf and flower than the Pyrenean species, Sedum brevifolium. Although, perhaps, rather delicate for general use in our climate, yet when planted in rather dry soil, on sunny parts of the rockwork, it usually succeeds and soon forms healthy tufts of short mealy foliage. For frame culture it is admirably adapted, and where, better even than in the open ground, the foliage and flowers attain a size and healthy appearance that is rarely seen in the border or rockwork. In appearance it closely resembles S. farinosum, and to which it is, in our idea, a superior plant for general use.

The Ivy Campanula (C. hederacea),

besides being a native, has much to claim our attention, for there is a peculiar delicate grace about it that is entirely wanting in the more robust members of the same family. The prostrate thread-like branches, minute glaucous-green leaves, and suffusion of pale bluish-purple flowers, all go to render this plant of particular interest and well suited for adorning the damper portions of our rock garden. It is of the easiest culture, and when left unmolested soon covers a considerable surface of ground. For carpeting the taller semi-marsh plants, this little native has but few equals, indeed at present, when the foliage is almost hidden by bloom, we can think of no equal amongst dwarf rock plants.

St. Dabeoc's, or the Irish Heath (Menziesia polifolia),

with its dark shining green leaves and terminal racemose crimson-purple flowers, is just now at its best. For a moist peat soil it is well adapted, and blooms profusely from year to year, in this latter respect yielding to none of the miniature peat-loving shrubs. Although usually grown as a peat plant, still this is by no means necessary, as it will succeed and flower well in good sandy loam. The variety alba is a very desirable acquisition, the pure white, wax-like flowers being copiously produced, and remain for a long time in perfection. Another variety—stricta or globosa—differs but little from the natural form; the foliage is perhaps more compact, and the plant usually of smaller size.

The Oswego Tea, or Bee Balm (Monarda didyma,

is by far the showiest of this family that finds a place in our gardens. Hailing from North America, from where it was introduced nearly 150 years ago, this handsome plant is well suited for our climate. It bears large brilliant flowers, the shaggy forms of which rise up from afar, and lend quite a novel feature to the adjoining plants. Rising from 18 inches to sometimes over 2 feet in height, this highly esteemed plant is best adapted for the rougher portions of the rockwork, or, better still, for planting at the backs of wide borders, and in front of the taller growing shrubs, and where at present it forms a fine feature.

M. Russelliana and M. fistulosa, though of value in their own way, are weedy when compared with the above.

Œnothera Fraserii.

In this plant will at present be found one of the prettiest and most attractive of the Evening Primroses. The rich dark green foliage, and abundance of golden-yellow flowers, which are produced for many weeks at a time, together with the graceful arching stems, renders this plant very suitable for rockwork, where, indeed, it feels quite at home, overhanging large boulders, or leisurely scrambling amongst loose stones. It well repays generous treatment, for although it will grow anywhere and in almost any soil, yet, like the various other members of this rather extensive family, a light rich soil and sunny situation produces by far the finest specimens. Œ. taraxacifolia surprises most people who have not seen it before, for the spreading mass of finely-cut foliage, interspersed with large open blossoms, some white, some pink, and others rose, have a very telling effect. To enjoy their fragrance and beauty the Œnothera should be seen in the "gloamin'." *Emergo.*

## ARCHITECTURE AND LANDSCAPE GARDENING.—IV.

In continuation of our extracts from the lectures of Mr. G. Richards Julian, A.R.I.B.A., on the above subject, we this week give some of his remarks on the subject of ornamental bridges, and illustrate them by a reproduction, in our Supplement, of his drawing of the bridge in Osterley Park, near Hounslow (see also p. 261). In speaking of bridges of Gothic character the lecturer said:—

"The full-pointed arch will rarely be appropriate, the form should, as a rule, be either simple-segmental or pointed-segmental, the latter giving generally the most satisfactory effect; the arches should be ribbed, that is, a transverse section through the bridge would show a series of ribs on the underside of the arch, and these ribs should have splays or mouldings at their angles. The piers produce the best effect when carried out with bold cutwaters, which should be reduced as they rise by weatherings somewhat similar to those on early buttresses. These cutwaters may either be stopped below the parapet, or their lines be carried up through it; in the latter case they form convenient recesses, in which pedestrians may stand while a carriage passes if the bridge be narrow.

"The parapets can of course be treated in a manner similar to that before described for terrace walls, but, in my opinion, are generally more pleasing when solid than when pierced; an excellent effect may be obtained by overhanging the parapet a little, carrying it on a corbel-table of small arches. If it is desired to give to a design a Late Gothic character, the form of the arches should be the depressed four-centred Tudor one, when the spandrels could be decorated with panels, similar to those common in the doorways of the Perpendicular period; an example of this kind of bridge, but executed in iron, may be seen at Westminster, designed thus with the object of harmonising it with the adjoining Houses of Parliament."

Coming to the Renaissance style, Mr. Julian said:—

"In dealing with ornamental bridges in this style a wide field is open to you. They may range from the simplest form of small, uncovered bridge to that which is covered, from end to end, with a highly ornamental architectural structure.

"As a rule, these ornamental bridges should be constructed of stone—it is more monumental in character than iron, less suggestive of being a mere work of utility, and has this great advantage, that age improves it. Stone weathers well, whereas an iron structure requires repainting; and the beautiful tints given to stonework by lichen and moss are never added to iron.

"The form of arch should generally be the segmental, but the semicircular may be used when the spans are small. For the lower part of these bridges rustication, in one of its various forms, is most suitable—it gives an air of solidity and strength which satisfies the eye.

"In the simplest kind of bridge, the arch—whose voussoirs should be well marked and deep, with an ornamental keystone in the centre—should be flanked by wide, simple, projecting, rusticated piers. Piers of some sort should always be introduced, they seem to strengthen the abutments, and serve to frame the arch, making an architectural composition. The lower part—that is, the part below the roadway, should be separated from the parapet by a horizontal cornice or string course, which also serves to mark the line of the road. The lines of the abutment piers must be carried up through the parapet, and this part of the parapet is best when kept solid: it may, however, be decorated by panels and carving. The wall between these piers may be balustraded, or pierced in a similar manner to that described for terrace walls.

"Where an increase of ornamental effect is desired, pilasters or columns may be added to the abutments, as shown in the fine old bridge from Osterley Park (see our Supplement). This bridge also shows an excellent arrangement of parapet, the mixture of solid, carved panels, with the open balustrades; and the broken line of the coping, give play and picturesqueness to the composition, and suggest a method of obtaining artistic effects by simple means.

"I hardly know whether it is necessary for me to warn you never to put a pier in the centre, in cases where it is desirable to have more than one arch; at any rate, I think it worth mentioning. The rule "always an opening in the centre" applies to almost all architectural compositions. If you have three arches the effect of the whole may generally be improved by making the central one wider, and consequently higher, than the side ones.

"The most beautiful form of bridge for a park is, however, the covered one. The best example, known to me, of this kind of bridge is the one in Prior Park, Bath. It is quite small, and would without its upper part be very insignificant; but by the erection on it of an excellently proportioned Ionic colonnade, terminated at each end by an arcaded pavilion, it is made into an architectural decoration which, contrasting with the masses of foliage behind, adds materially to the natural beauties of the place. In the position of this bridge, as well as in its design, we at once recognise the hand of the true artist. If stood on an open flat it might appear pretentious and self-assertive, but closing a vista in a valley, the regular lines of its architecture heightening by contrast the beauty of the woods around, which in return seem to soften the contours of the stonework, the whole blends harmoniously into a picture which completely satisfies the artistic sense."

## GEORGE CALEY.

At the commencement of the present century George Caley, residing at Birmingham, practising the veterinary art, had acquired a love for plants through collecting certain kinds for horse medicine. This in some way brought him under the notice of Sir Joseph Banks, who, after due examination, considered him qualified to become a botanical collector, and he was accordingly appointed botanical collector for Kew in New South Wales. We have no record of his appointment, but it appears certain that he was in that colony in 1801. In *Hortus Kewensis* Jacksonia scoparia is recorded to have been introduced by him in 1803. He spent ten years in the colony, during which time he made journeys to various parts in what may be called the Sydney district. He was the first person who attempted to cross the Blue Mountains. Twenty years later, Allan Cunningham, in his *Journey Over the Blue Mountains*, says, "We came to a heap of stones marked 'Caley's Repulse,' indicating the farthest point that indefatigable and persevering botanist reached in his endeavours to cross the mountains to the westward." His name does not appear very often in *Hort. Kew.*, as having introduced many living plants to the garden collection. He returned to England in 1811, and in 1817 was appointed superintendent of the Botanic Garden, St. Vincent, where he made

large herbarium collections which were (as also all the Australian specimens) forwarded to Sir Joseph Banks, for his herbarium in Soho Square, as also a collection to the great patron of botany, A. B. Lambert, Esq., who presented the writer of this with nearly the whole of the Fern collection. On the breaking up of the St. Vincent garden he returned to England, and took up his residence at Bayswater. He occasionally visited Kew—the last time, I think, was in 1828, when he had been at Kingston Hill to see the Orobanche which grew there, and on the return home called at Kew, leaving fine specimens of Orobanche with us. He died at Bayswater some time before 1832.

A genus of Orchidaceæ was dedicated by Robert Brown to his honour: one species, Caleya major, was cultivated at Kew; it was introduced in 1810. *J. Smith, ex-Curator, Royal Gardens, Kew.*

## THE ROCK-GARDEN AT ST. ALBAN'S.

MAY I comment on one or two of your criticisms that appeared in the *Gardeners' Chronicle* for July 4? I entirely admit the anomaly of a sandstone formation cropping out of the chalk. I was perfectly aware of this when I set to work. But this must be borne in mind, that I never intended my rocks *per se* to form a feature. I wanted to grow alpines—and rocks of some sort I then believed I must have, though I have had reason to modify that opinion since, as far as many alpines are concerned. Well, then came the question as to what rocks? Chalk boulders, very picturesque as they are, no doubt, in what you well describe as their "pell-mell confusion by the sea," never could possibly have answered the end for which they were utilised. The nearest local rock deposit offered itself in the limestone quarries at Hythe (Kentish rag). No doubt some plants would have been at home on this, but there were several objections to the use of the limestone. It is exceedingly hard, non-absorbent, and a great radiator, and in addition to this the worked beds are very shallow, running from about a foot to 15 inches, and offering neither variation in their thickness, so as to afford picturesque contrast in the substance of the beds, nor any massive boulders to break the tameness of the simple stratification. Now the Tunbridge Wells and Wadhurst sandstone quarries offered all these desiderata; and above all, these rocks are pre-eminently absorbent and retentive of moisture. This clenched the matter, and to those localities I went. My first intention was to employ Mr. Pulham, of Broxbourne, and he came down, but I soon found that his ideas and mine differed as widely as the poles. He was all for effect, to be attained by piling up masses, with a liberal supply of cement. I was all for suppressing feature, and my one aim was to construct as unostentatiously as was possible, and to let my rock crop out from the slopes of the hollow with which I had to deal. I ended therefore, by retaining one of Mr. Pulham's foremen, to assist me mechanically in getting the rocks into position, every stone being placed under my personal direction, and on my own design. No pains were spared. The whole space assigned to the rocks was scarped away, a 9-inch wall in cement built behind the position to be occupied, just to a surface level, in order to keep out tree and shrub roots, and an average depth of prepared soil from about 4 feet in front to about 8 to 10 feet at the back was thus obtained, giving (with variation, of course) some such section as that shown in fig. 55.

Ample drainage was got by coarse limestone rubble at the bottom; and the soil was formed in proportions of loam and broken limestone. For the first three or four years, while the loam was unexhausted, all went well. I grew splendid cushions of Myosotis alpestris and M. pyrenaica, Androsace carnea, magnificent pieces of the Mount Dore variety, A. villosa, the smaller Gentian, Primula farinosa, &c., all growing and blooming in juxtaposition. In three or four years the loam wasted away, became impoverished, and soon it was clear that the limestone was overdone. The whole rockery was well covered. I took up every plant, emptied all the made soil, got fresh loam (and very poor it proved), and went through the whole carting, wheeling, disorder, and horrors of that kind, and replanted again. Very little gain resulted. However, for several years I went to the Pyrenees, Switzerland, Italy, France, and came back with from one to three large cases of plants, and so by dint of perpetual replenishing for about eight or ten years I kept up a sort of appearance. Androsace imbricata, wedged with steel out of the volcanic rocks; A. pyramidalis, Eritrychium nanum, Saxifraga intermedia, were brought year after year to live perhaps two or at most three summers. I once had a grand specimen of S. imbricata till a thrush found a worm behind it. So with Saxifraga florulenta: worms used to work them out of the crevices. At last by night gathering I extinguished the worms. Still I had woodlice, who delight in the roots of A. carnea above all other plants; and then ants drove me wild. With scarcely an exception I planted for years every single plant with my own hands, and heavy work it was getting them into the stony rubbly soil. Every spring I did all the clearing, cutting, thinning, and putting in order, and generally had a bad illness from chills after it.

A good deal of the small weeding I also did myself, though the bulk was done by a woman whom I trained for the purpose. Gradually frequent disappointments, with the loss and failure of plants, the failing energy of years, other pursuits and demands on my time, brought slackness, and the hobby has run its course. The plants you saw are the survivors of a once interesting collection. It is true, as you have observed, that "there are no signs of that desperate conflict for existence where the strong overpower the weak," for I never allowed that, but the gems of the mountain sides and summits are no longer there, because they cannot and will not endure the fogs of November mingled with frost—worse still, sharp white frosts following heavy rain, with no protecting carpet of snow, and all other noxious influences. Primulas entirely decline to grow here, the smaller Gentians very nearly the same. Many of the alpine Ranunculi, numbers of bulbs, in fact countless things, have persistently refused to live in this part of East Kent. I believe Mr. Ewbank grows easily in the Isle of Wight plants that baffle me here, and I know Mr. Maw grew numbers at Broseley. *W. Ovenden Hammond.*

## CARNATIONS AT OXFORD.

MENTION has been made of Mr. E. S. Dodwell's Carnation and Picotee garden at the Stanley Road, Oxford. In it there is not only an immense number but a great variety of the Dianthus tribe. In order to have his plants under due protection, five or six houses have been erected—substantial wooden structure, two of them having span-roofs of glass, but fully open at the sides where necessary; the pots stand on low benches about 12 inches or so from the ground, open underneath, so as to secure a free circulation of air; between and about the houses and frames (of which there are several) run well kept gravel walks, a good portion of them being covered with Staffordshire tiles, which enables a wheelbarrow, with a load of soil, to be trundled without doing any damage to the paths. The potting benches are perfect in their way; there are sheds for layering and other purposes; it is indeed a Dianthus garden, where all the newer, and a few of the choice old varieties of Carnations and Picotees are grown, largely, healthily, and successfully. There are to be seen some 3500 plants growing in 1500 pots. In pots 9 inches in diameter, three plants of one variety are placed; in 8-inch pots two plants; and in 7-inch pots a pair of weak plants, or a single strong one. Generally the plants have produced strong healthy grass, and the work of layering (now being prosecuted) is a great and lengthy task—As Mr. Dodwell contemplates he will make 20,000 layers, which will give him this number of fine plants for distribution next year, and mainly of his own seedlings. In addition there is a large bed of seedlings, comprising 1000 seedlings, which have flowered this season, and anything of promise is lifted from the ground, placed in a pot, and layered in the usual manner.

Mr. Dodwell's conception of an early Carnation is that of a poor, starry, fringed, saw-leaved, five-petalled flower. A flower figured by Parkinson represents one of the D. Heddewigii type; these and seminal forms sported, and became striped on the surface, and from this were gradually evolved the Carnation and Picotee of the present day. Mr. Dodwell is of opinion that the flaked and bizarre Carnations came from the Picotee; that the original Picotee was a flower with three bars or stripes of colour on the petals; these by selection became defined flakes, and afterwards came colour upon colour, or bizarres. The attempt to fix the colour upon the edge of the Picotee in the form of a dense margin, rather than as stripes, Mr. Dodwell regards as a later attempt than that of improving the Carnation, and this may appear reasonable from the fact that the Picotee is smaller than the Carnation, though the difference in size is more apparent than real. A curve on the outside of the petal of a flower, a resting colour on the margin of the petal, always carries the eyes round the circumference, and apparently limits the size. In the case of flakes of colour running along the length of the petal, the dimensions of a flower look larger in consequence. Picotees generally are certainly a little later in developing than Carnations.

Sixty years ago the named Picotees were very poor. As flakes and bizarres came out of them—as definiteness, clearness, and distinctness came to be regarded as valuable qualities—selections were made of flowers coming up to these requirements. Up to thirty years ago the named Picotees were more or less characterised by an edging deepening in depth in the centre of the edge of the petal. It was then Mr. Dodwell proclaimed as a standard of quality that the margin of colour should be of the same depth and dimensions all round the petal. Previous to this Mr. Dodwell had left London and settled in Derby—about 1844—and in 1845 he commenced raising Picotees from seed. One of his first varieties was Alfred, purple-edges, bloomed in 1849; followed by Mary, a red-edge; and both these showed the truth of Mr. Dodwell's contention. He grew Picotees continuously up to 1860, exhibiting for the first time in 1846. Amy Robsart, Mrs. Bayley, and Florence Nightingale were also raised. All these were of Princess Alice blood, a variety raised by Wood & Ingram, of Huntingdon. In 1858 Mr. Dodwell purchased John Holland's nursery (Chadderton Gardens), at Middleton, and here he raised Countess of Wilton and other Picotees. He also raised Carnations while at Derby, such as Fanny, P.P.B.; Hester, P.F., a sport; John Bayley, S.F., a variety grown in the present day, and others.

"In the florists' world of the Dianthus tribe," remarks Mr. Dodwell, "nothing lives beyond ten or twelve years, and a variety that holds its own beyond this time is of exceptional merit. There is a marvellous variety found in the Carnation—no two petals can be found exactly alike, and no two stripes are exactly alike in size and density." Its capacity for taking on new shades of colour is particularly noticeable; shades have deepened to the densest purple, and nearly black; and from black through shades of lilac, mauve, rose, and pink, to the purest white. It is found that the character of the flowers are much affected by treatment and circumstances; those of climate and soil will sometimes have a great effect upon the bloom.

In 1859, having been in business at Chadderton for the space of twenty-one months, Mr. Dodwell removed to London, and took up his residence in the Devonshire Road, South Lambeth, where he lived for the space of fourteen years. Here he attempted to grow Carnations and Picotees, but owing to prolonged absence from home, during which the plants suffered greatly, he had to give up their culture.

In 1873 he went to reside at Chatham Terrace, Larkhall Rise, Clapham, and here, having better opportunities for cultivating, the old floral tastes revived. In the autumn of 1874 he began to make a collection, and in 1875 commenced fertilising his best flowers, but it was not until 1876 that he obtained a good lot of seed, and from this came S.B. Robert Lord, S.B. Ben Simonite, S.B. Arthur Medhurst, S.B. George, S.B. Fred, C.B. Stanley Hudson, C.B. Thomas Moore, and others; and also some seedlings subsequently named by Mr. Turner. Picotees would not develope in the Clapham atmosphere, but Carnations came in excellent character. Here Mr. Dodwell remained until the end of 1881, when he removed to the Stanley Road, Oxford, the house he now inhabits being in process of building, the garden a deep pit resting on clay. The clay, being of a very stiff, adhesive nature, was burnt to

the extent of from 400 to 500 tons, and all the Carnation soil that had been gathered together at Clapham was brought here at a considerable cost. It is now a perfect, and, it may be said, unrivalled Carnation and Picotee garden. This season Mr. Dodwell has proved forty selected seedlings of 1882—83, and 120 of 1884. He has this summer flowered 1036 seedlings; in 1844, 1750 were bloomed; and in 1883 rather over 1500. It is computed that 20,000 layers will be made this season, all of seedlings of Mr. Dodwell's own raising.

The "running" of Carnations, *i. e.*, the breaking of a flower into a coloured instead of a white ground, is one of those matters that baffles the speculations of cultivators, as it did many years ago. [Reversion to an ancestral condition.] Carnations are much more disposed to "run" than Picotees; it is not often that the latter take on the run character. Run Carnations will occasionally revert to the original character, but run flowers are never propagated for purposes of sale, except as self or fancy varieties. The Carnation occasionally sports; thus, that fine S.F. Sportsman is a sport from the S.B. Admiral Curzon; and other instances might be mentioned.

Most of Mr. Dodwell's fine self and fancy varieties together with the old florists' favourite toast, "May we never be fun' out."

In dressing Carnations it is considered fair to remove what leaves the operator chooses, and, with a pair of tweezers, to put what remains in the best and most regular form, the petals overlapping each other, with a few short ones in the centre, forming the crown; but extremely wrong to make any addition thereto from other flowers. The art of the dresser tells powerfully on the exhibition table.

To show how actively Mr. Dodwell has been engaged in raising new varieties of Carnations since the time he commenced operations at Clapham, he has named and distributed sixty-one bizarre and forty-eight flaked varieties, and thirteen Picotees, besides seedlings which have been named by others. In addition there are many fine self and fancy varieties, and all this is simply an earnest of what is to follow. Year after year Mr. Dodwell crosses his best flowers, and from them raises seedlings. He has this season flowered for the second and third time 160 selected seedlings; and considerable augmentations of flowers of high character will no doubt be made to our lists of named varieties from such a numerous batch.

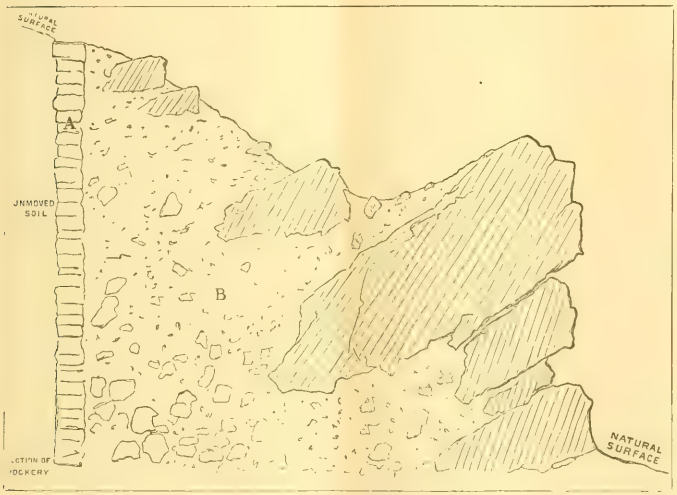



FIG. 55.—SECTION OF THE ROCK GARDEN AT ST. ALBAN'S COURT. (SEE P. 264.)

are seedlings, and a considerable proportion of seedlings will come self-coloured. Occasionally a good fancy comes from a sport, as in the case of Mrs. Mostyn Owen, a very rich crimson and dark purple; this originated as a sport from C.B. Thomas Moore, and in common with others its character is quite fixed.

A "split pod," in which the green calyx divides and shows the base of the petals, though still a disqualification at some shows, is not so at South Kensington. It is mainly caused by the rapid expansion of a full flower, and by other influences operating. Instances have been known, where the pod has burst, of putting the flower into a fresh one; but they belong to a time now somewhat remote. A case once occurred of a split pod being patched up with a piece of green silk, tied close up to the petals. Bad petals have been removed, and good ones substituted; a pellet of cotton-wool being crammed down to keep them in their places. A neater way of doing this is by drawing the petal down into the pod with a piece of green silk. Mention has been made of a Carnation composed of petals taken from other flowers, not one of which belonged to the pod in which they were put, but were the best that could be selected from perhaps a dozen flowers. Practices like these have passed away into the limbo of things that once were, The seeds saved in any year are held over until the following March, when they are sown. Up to this year they have been sown in seed pans and pots. This season a coating of cocoa-fibre was spread over a spent hotbed, and on this was laid a layer of fine soil of a light free nature; and over this was spread about 2 inches of some finely sifted leaf-soil; drills are drawn, and the seeds sown thinly in them. It would appear that last season's seeds came indifferently well, as only some 3000 of them germinated out of the large number of 7000. Whether this was owing to the drought of 1884 or not cannot be determined. *R. D.*

## USE OF SPINES IN CACTUSES.

When young and vigorous—*i.e.*, in early life—the teeth are very spiny; when the tree is aged, and the branches then a distance above the surface of the ground, losing vigour, the spines are weak or absent. Sir John Lubbock and others, following the poet Southey, see in this a beautiful adaptation for protective purposes. When within the reach of animals spines are borne, when high up, where animals cannot reach, spines are unnecessary. Numbers of species of plants have mucronate points to the leafy serrature, which are wanting in maturer years. It is at any rate difficult to imagine why a sharp point should be made especially for protection, and points less sharp for no protective use at all.

I have often reflected on the fact referred to by Dr. Newberry, that our thorniest plants are in much greater proportion in places where animal life is scarce, and the immense police force sustained by the great vegetable community absolutely thrown away. Cactuses and other thorny things I have seen covered with thorns and spines on deserts where the hot air seemed to be bounding up and down like the surging ocean, and where not even a lizard could have dared to show its face. Thorns cannot be, so I have thought, for protection where the climate gives all the protection desired. I am not one who doubts that Nature has a purpose in every move she makes, but the main purposes, I think, we seldom reach, and that we do ourselves an injury in research by assuming mere incidental uses as the main purposes for which structures seem to be "adapted."

One of these uses in the spines of Cactus has occurred to me after reading Dr. Newberry's remarks on Pinus edulis. They break the full force of the sun on the plant, a force it is made to endure, and not to love, as we know who have learned to cultivate it. Plant lovers set out their treasures in summer under "arbours" of fish-netting or galvanised wire, and those who have no experience would be surprised to find how the moving shadows of the twine or wire lowers the temperature. A mass of spines on a Cactus must certainly have the same effect. A Cactus does not need much light on its epiderm to keep healthy. On the dry mesas along the Uncompahgre River I have seen some aggregated masses of Echinocactus phœniceus forming dense hemispheres a foot high and as much wide, with spines so thoroughly interlaced with spines as to rival the hedgehog, and leaving not a particle of the green surface visible; and there are species not cæspitose, such as E. pectinatus, which no one can see for spines without cutting apart, and forming a complete protection from the hot suns under which they are doomed to live.

I do not suppose I have yet reached the final purpose of spines in a Cactus, any more than we have the final purpose in the existence of the Cactus itself, but that one use of Cactus spines is to furnish a partial shade I feel to be beyond a doubt. *Thomas Meehan in "Bulletin of the Torrey Botanical Club."*

## ORCHIDS FOR AMATEURS.

(*Continued from p.* 214.)

Quite recently several new varieties of Lælia anceps of great beauty have been imported, of these, which are closely allied to Lælia anceps Dawsoni,

*Lælia anceps Schræderiana*, Rchb. f., is stated to be the finest white Lælia that has yet been introduced. Professor Reichenbach speaks of it as distinct; the flowers are larger than those of L. a. Dawsoni, with broader petals, and a very remarkable labellum. This is very flat and broad, three-lobed, the lateral lobes quadrate, and the middle lobe very large and notched in the centre. The flowers are white with an orange base to the labellum, marked with five parallel lines of crimson-purple.

*Lælia anceps stella* is also related to L. anceps Dawsoni. The flowers are described as stellate; the median lobe of the labellum is not notched, but has an entire margin; the base is orange coloured, and there is a scarlet blotch, or macula, on each side. This last character is the distinguishing mark of a variety called L. anceps vestalis, which resembles L. anceps stella, except that the base of the labellum is white instead of orange coloured.

*Lælia albida.*—This forms the type of the second group of Mexican Lælias. It is an old species, which was introduced in 1838 from the mountains of Oaxaca. It is a dwarf plant, with numerous ovoid pseudobulbs closely crowded together, and when young surrounded by thin silvery scales. The young bulbs are surmounted by two narrow, strap-shaped, coriaceous leaves, of a pale green colour. The old bulbs are leafless, and deeply furrowed. The flowers are borne on long, upright peduncles, six or more in a panicle. They are 2 inches in diameter, of a beautiful ivory-white colour, or white shaded with pink or buff. The labellum is rose coloured, with yellow radiating lines in the throat. The flowers are very fragrant in the early morning.

*L. albida Mariane* has glaucous leaves, and white

or buff-coloured flowers, with a mauve labellum, salmon or buff coloured in the throat.

CULTURE.

Lælia albida, and indeed all the remaining Mexican species of Lælia, require cool treatment and plenty of air. They are also all impatient of moisture, and in this respect resemble Cattleya citrina. All its varieties flower in the dull months of winter. When well grown nothing can exceed the beauty of the flowers of this species. A warm greenhouse in winter, and the coolest possible corner of a verandah in summer, are the best places to grow Lælia albida. It is one of those plants which do best in the open air, and I feel sure that any one living in the country could grow this plant to perfection in a shady porch, or in a cool verandah, suspended in an Orchid-basket, in summer, and I believe it would flower well in a conservatory, or even in a south window. The experiment is worthy of a trial, as plants can be obtained for a mere trifle at the present time, and the great beauty of its flowers make it a universal favourite. I am sure any one who can flower Pelargoniums in winter could grow L. albida in the greenhouse, and as the flowers last for six or eight weeks, it would be a very desirable plant to have.

*L. furfuracea* has pale pink flowers and broad thick leaves; it is apparently intermediate between L. autumnalis and the last species, but is quite distinct from either. The culture is the same as for L. albida.

*L. autumnalis.*—Also a mountain plant, but one of much larger size than either of the last. Its ovoid pseudobulbs, attaining a length of 3 or 4 inches, bear two or three broad bright green coriaceous leaves. The flowering stems are from 1 foot to 18 inches long, and support from six to nine large showy sweet-scented flowers, but unfortunately they only last two or three days. The sepals and petals are rose-coloured, shaded with deep purple, the labellum varies from white to rose colour or lilac, and in some varieties there are two deep purple blotches on its base. The throat is marked with spots or lines of yellow. This species flowers in winter and requires the temperature of the Mexican-house, or a warm greenhouse for its cultivation.

The three species described above are all easily damaged by excess of moisture, and are sure to lose their young shoots in a damp close atmosphere. The compost in which they are grown should be of the most porous description, little billets of charcoal and peat fibre, and should never be kept wet, only damp, even in summer, and in winter they need less moisture. Indeed the compost will absorb sufficient from the air to keep the plants healthy.

*L. erubescens*, also called L. peduncularis, may be taken as the type of a third group of Mexican Lælias. It has compressed ovoid dark green pseudobulbs surmounted by a single dark green shining leaf. The flowers are about an inch in diameter, from three to ten in number, with an umbellate inflorescence. They are of a pale rose colour, with dark purple shading: the lip is of a sulphur colour. These beautiful and delicate flowers only last one or two days. It is, however, a gem, although an evanescent one. This plant can be grown easily either in the Cattleya or Mexican-house, but it is much damaged by excess of moisture in the former. The compost in which it grows should be merely kept from getting quite dry, as even a moist compost destroys the slender rose-coloured roots of this plant. It requires a well-marked resting period after flowering in a cool dry airy situation. It flowers in autumn.

*L. acuminata.*—A larger species, closely allied to the last, but needing cool treatment. It has similar but larger bulbs, and much thicker and broader leaves than L. erubescens. The flowers are from six to eight in number, of a delicate lilac colour, with a cornet-shaped labellum, yellow in the throat, with three lobes. The central lobe plicated or crenulated at its margin. It flowers in winter.

*L. majalis* is very unlike any other Lælia. It has small ovoid silvery bulbs, each bearing a pair of bright green leaves. Its flowers are solitary, five or even 6 inches in diameter, of a delicate rose colour, mottled or veined with a deeper rose. The labellum is rose coloured, or white sometimes with a deep purple border in some varieties, marked with reddish-brown or chocolate spots.

CULTURE.

The secret of success with this mountain gem is cool treatment, free circulation of air, and a very decided winter rest. Like all the alpine Mexican species, excess of water is fatal to it, and free air is absolutely essential. A slight frost does it no harm if it is dry. I believe it would do perfectly well in the shelter of a verandah except in the cold winter months, when it needs the protection of a greenhouse, which should also be afforded it until after flowering. I believe a vinery would suit it better than any other treatment. The flowers appear with the young shoots, and precede the bulbs.

The last species of Lælia which I shall describe is a native of the mountains of the West Indies; it differs from all the above in having no pseudobulbs, and known as

*Lælia monophylla.*—This species occurs on trees at an elevation of from 3000 to 5000 feet above the sea. It grows very much after the manner of a Carex or Sedge, its rhizome is horizontal, and its leaves are from 5 to 6 inches high. The flowers are small, and resemble those of L. cinnabarina in colour, but are campanulate in form; it is interesting rather from a botanical than a horticultural point of view. *B. T. L.*

*(To be continued.)*

## MESEMBRYANTHEMUM EDULE.

AT page 145, in your number for August 1, you refer to this plant as being hardy at Torquay, and describe it as producing yellow flowers. Both Loudon and Johnson describe it as producing pink flowers. Which is correct? The plant you refer to is growing in large quantities along the sea coast in light sandy soil, and on rocky walls here. The name it is known by is M. acinaciformium, on account of its bayonet-leaved foliage; but I presume that is incorrect also, as it best answers to the description given to M. crassicaule. Both the authorities above quoted are agreed that the latter variety produces yellow flowers. Its growth is vigorous and rampant, producing ramified shoots from 4 to 8 feet long in a season, thickly set with large succulent leaves, but it does not produce many flowers. Here and there one large sulphur-yellow flower is produced, 2 to 2½ inches in diameter. In light, bright, sunny places it grows as freely as Ivy does in damp places. The poorness of the soil, and the strong glare of the sun seem congenial to its development. As a window-box plant, where much growth is desirable, its heavy pendent growth make it acceptable, as it is not liable to be much damaged by the wind, which is the bane of many of our beautiful creeping and trailing plants. I have thought that if it could be grown as a fodder plant, its luxuriant growth would make it a profitable crop to grow. As far as my experience goes, most animals refuse to eat it; but that may arise from not being used to it. Should any of your numerous correspondents have any knowledge of its merits in that respect, I should be glad to share it. As a vegetable it is "a marvel of beauty," developing size, form, and colour in unmistakable proportions. I enclose you a specimen of the growth, the name you have applied to it inducing the enquiry. *C. B. S., Jersey.*

[The above note was forwarded to me by the Editor, since I was responsible for the name M. edule as applied to the Torquay plant. "C. B. S.," and others, as I learn from the Editor, are in doubt as to this being the correct name of the plant alluded to on p. 145 of the present volume, but I can assure them that there can be no question that the Torquay plant and the specimen from Jersey sent by "C. B. S." both are M. edule! The difficulty is in reconciling the statements of authors as to the colour of the flowers. In the original description in Dillenius' *Hortus Elthamensis*, p. 283, t. 212, f. 272, and in Linnæus' *Species Plant.*, ed. 2, p. 695, the flowers are described as yellow; but Pappe, in his *Flora Capensis*, ed. 2, p. 16, describes the flowers as "yellow or purple," giving after his description the following account:—"Few South African plants are so much in domestic use as this species and Mesembryanthemum acinaciforme, Lin., both of which are common in the sandy tracts of the colony. They are astringent and sourish in taste, on account of the acidulated alkaline salt with which they seem to be impregnated. The expressed juice of the succulent leaves, taken internally, checks dysentery, and acts as a mild diuretic; while it is also for its antiseptic property used as an excellent gargle in malignant sore throat, violent salivation, and aphthæ, or, in the form of a lotion, in burns and scalds. At the Cape these plants are called Hottentots' Vygen (Hottentot Figs)." In Harvey and Sonder's *Flora Capensis*, ii., p. 412, the flowers are also described as "yellow or purple." Johnson and Loudon state the flowers to be "pink," but these, as compilers only, can scarcely be considered as authorities on the subject, and, in my opinion, they are undoubtedly wrong. Mr. Cooper, who collected in South Africa, writes me as follows:—"There are plants growing near Cape Town alike in appearance, differing only in the colour of the flowers—namely, purple and yellow; they are both called 'Hottentots' Fig.' I considered one of them to be M. edule, but was puzzled by the different colour of the flowers. I think it most likely Dr. Pappe considered them both to be M. edule. The fruit of both plants is alike, and I know of no other Mesembryanthemum with such large fruit. The growth of the two is alike, spreading from a centre many feet in every direction, the new growth covering the old, and smothering it, forming a thick bed of dead stems."

Now all this, to say the least of it, is unsatisfactory and indefinite, and I cannot but think that two species have been confused by the later authors. Concerning the typical M. edule there can be no doubt, as Linnæus, the author of this species, states that it is yellow; but whether there is really a purple flowered variety of it, or whether M. acinaciforme, which has purple flowers, and much resembles M. edule, has been confused with it by those who say the flowers of the latter are sometimes purple, I cannot positively say, but incline to believe in the confusion of these two species. M. acinaciforme and M. edule are both called "Hottentots' Figs," the fruit of both species being eatable, and they grow in the same districts. The distinction between them is as follows:—M. edule has yellow flowers, and triangular leaves with nearly equal sides; M. acinaciforme has purple flowers and triangular leaves with the two outer sides broader than the upper or inner side, especially towards the apex, where the keel becomes somewhat dilated. Another species, M. equilaterale, is very like M. edule in its leaves and habit, but has purple flowers; it is not a native of the Cape, although, as it has long been in cultivation, it may have been mistaken in gardens for M. edule, and have given rise to the statement by Loudon and Johnson that the flowers are pink.

M. crassicaule, mentioned by "C. B. S.," is a very different plant, much smaller, different in habit, and the leaves are not acutely triangular as in the species above-mentioned, but very obtusely rounded on the edges, and very obscurely and obtusely keeled on the back, with a channel down the face.

It is remarkable that such a fine species as M. edule has not been figured since the time of Seba and Dillenius; it does not even find a place in Prince Salm-Dyck's splendid monograph of the genus. A good coloured figure would be serviceable. *N. E. Brown.*]

## NELUMBIUM LUTEUM.

SOME half-a-dozen species of Nelumbium are recorded in gardening books as having been introduced to this country, but the *Genera Plantarum*—doubtless with much propriety—reduces the number to N. speciosum and the species under notice. Owing to the wide distribution of the former, both in the Old and New Worlds and Australia, it is not surprising that we should find considerable variation, amounting to the extent of what would be called geographical varieties. On the other hand, N. luteum is confined to America, and was originally introduced from Carolina in 1810.

A small specimen obtained for Kew a year or two ago has been growing slowly but progressively, and having made excellent growth this season, is now flowering in the Water-Lily house, probably for the first time at Kew. Four or five flowers, a number that may yet be augmented, appear in various stages of development; and, recollecting that the plant is small, and the long rhizomes confined within the limited compass of a pot, plunged in the tank, its flowering may be considered a success. On some parts of the Continent where it has been flowered it is believed that frequent removal—or, in fact, disturbance at the root—is detrimental to its well-being, or hinders it from flowering altogether. Whether or not this is in accordance with fact, this much is certain, that N. speciosum in the same house was entirely removed last spring, and a new plantation

made in fresh soil. The flower-stems and leaves are unusually strong. Some of the flowers measured a foot in diameter, and the leaves twice that, or more. These are facts that speak for themselves, and, bearing in mind the difficulties that the early cultivators of this plant encountered, it is highly probable, when thoroughly understood, that N. luteum will be as tractable and amenable to cultivation as the former.

The flowers are of medium size, with pale green sepals and pale lemon or soft yellow petals. Although wanting in the gorgeous appearance of N. speciosum, it is a handsome flower, and by its quaint unassuming colour contrasts beautifully with its bold and showy congener. The leaves are peltate, and of a soft glaucous green. The primary and weaker ones float on the water, while the stronger ones are borne well above it, overtopped, however, by the flower-stems. The obconical receptacle projects prominently above the numerous yellow stamens. *F.*

## HERBACEOUS PLANTS.

Epilobium Fleischeri.—Botanists have long been puzzled how to determine the limits and characters of the British species of Epilobium, to one of which this plant is said to belong, as I saw it in the gardens at Kew labelled Epilobium rosmarinifolium var. Fleischeri. The two plants may present no distinct characteristics to botanists, but to gardeners they are very different. E. Fleischeri is dwarf and bushy, seldom exceeding 9 inches in height, whilst E. rosmarinifolium, grown under the same conditions, frequently exceeds 3 feet. The section of Epilobium to which this plant, as well as the more common E. angustifolium, belong, has long been separated by some botanists under the name Chamænerium—a genus retained in Nyman's *Conspectus*, but disallowed in the *Genera Plantarum* of Hooker. The plant of which I am writing came to me several years ago from Messrs. Fröebel, of Zurich. Finding that it was a good rock plant, and that it ripened seed freely, I distributed the seed to my friends, and amongst others to Mr. W. Thompson, of Ipswich. After a year or two, Mr. Thompson wrote to me saying that he found the plants raised from it identical with E. Dodonæi, a plant in size and form intermediate between E. Fleischeri and E. rosmarinifolium. I found the same result in my garden; in fact, these three varieties came up here simultaneously from the same seed—the plants forming an unbroken series from the smallest to the largest. Knowing how readily the species of many genera cross when grown together in gardens, I should not be justified in concluding from this that these species are identical. I find, however, in Nyman's *Conspectus* all the three names given as synonyms or varieties of one species, which he calls Chamænerium lacustre. In Britain the species is said to be native in Glen Tilt, but very rare. The dwarf form I have mentioned is pretty and neat, but must be grown from divisions of the plant, which are easily made.

Malvastrum Munroanum.

This is the name given in the herbaceous garden at Kew to a plant sent to me from Devonshire by a friend as Malva Munroana last autumn, and which I find to be the best hardy plant of which I have made the acquaintance this year. The plant is by no means new in cultivation, and appears to have been introduced by Douglas in 1826; but it is not as well known as it deserves to be. It makes drooping or prostrate branches a yard or more long, followed at the end of summer by upright shoots from the same centre. The leaves are much incised and lobed, like those of the Oak-leaved Pelargonium, but in the late shoots they are rounder and less cut. The flowers, which are produced on short panicled stalks from the axils of the alternate leaves, are about as large as those of the Crab, which they resemble in shape, of a clear bright red colour. They drop as soon as they wither, making no attempt at forming seed—a habit which greatly improves the appearance of the plant, which continues quite covered with flowers from June to the end of autumn. My plant is now one of the most attractive sights in the garden, and shows no sign of deterioration. Like all plants from Western America, north of California, it is probably very hardy. I am informed that the short and late shoots strike readily. It should be planted on the edge of a raised bed or bank, where its long shoots can fall over at least 4 feet without reaching the ground; and poor strong soil seems to suit it best. It has been figured and described under the old generic name Malva in *Bot. Mag.*, t. 3537, and *Bot. Reg.* of 1834, t. 1300.

Malva lateritia.

Now that taste in colour is so much cultivated, I find many of my visitors very fastidious about flowers, and few of them will admire anything to which the words "mauve" or "magenta" can by any stretch of meaning be applied. About the colour of this flower, however, I have never heard any opinion but of unqualified approval. It is a clear and soft light red, with a darker spot at the base of each petal. The flowers are about the size of those of a large garden Strawberry, but more cupped, and are produced from the middle of July until the frost stops them. In these consists the whole merit of the plant, which cannot be called of neat or ornamental habit. The leaves in shape resemble those of the common Mallow. The stalks are long and straggling, generally prostrate, and 2 or 3 feet long when flowering, but I have seen it cultivated in pots, or in dry soils, flowering with upright stalks. This, however, cannot be called its ordinary habit. Being a native of the Cape of Good Hope, it may be expected to be tender in cold gardens, though it has survived two mild winters here. It is increased very easily either by cuttings or by laying the long shoots, which then root at every joint. A pot of cuttings should be kept through winter in a frame by those who wish not to lose it. It likes good soil, and a warm situation under a south wall.

Silphium laciniatum.

Better known by name as the Compass plant than by its appearance in gardens. It is said in America that on the prairies where it grows wild the points of the compass may be recognised by the disposition of its leaves, and Asa Gray favours the notion. It probably loses its indicating habit in gardens, as I have frequently tried in vain to recognise any consistent direction in the leaves. It is a handsome and distinct plant, and, though coarse, is not more so than many with less showy flowers more frequently cultivated. It grows 6 feet high or more, with leaves often 2 feet long, elegantly cut up into narrow laciniate pinnæ. The flower-stalk is leafy to the top, and the flowers come five or six in a loose panicle. They are 5 inches across with a dark centre and numerous clear, pale yellow rays. I raised it from seed which my son brought from Minnesota, where it is called the Gum plant, on account of the secretion of gum, especially on the outside of the bracts of the involucrum. I have been told that it often dies after flowering unless the root is taken up and cut into pieces like a Potato and replanted.

Chrysogonum virginianum.

The generic name occurs in Dioscorides, and was applied by Linnæus to a small genus of plants of which the only hardy member is North American, as its specific name implies. The genus in Hooker's *Genera Plantarum* comes next to Silphium, but to ordinary observers two plants could hardly be more distinct in habit and appearance than this and the last described. This grows hardly a foot high, its leaves are serrated, cordate ovate, and much resemble those of Campanula trachelium. The flowers would hardly be recognised as a Composite without close examination. The centre is small, and the rays, which seem to be always five in number, are evenly arranged and of bright golden-yellow. It begins to flower early in June, and continues through summer and autumn, never becoming untidy, and making a good border plant, very distinct in appearance. Easily increased by division of the root.

Campanula Zoysii.

The limits of distribution of this species, as given by Nyman, are Styria, Carinthia, and Carniolia. It is well worthy of cultivation, for the very distinct and peculiar form of the flower, which is a sort of pentagonal cylinder tapering towards the end, near which it swells out and again contracts at the mouth so as to leave hardly any visible aperture. The plant is difficult to obtain, being very diminutive, spreading slowly, and apparently making no seed in cultivation. I obtained it two years ago from Fröebel, of Zurich, at a rather high price. It is now well established in soil well mixed with finely broken stone in an exposed part of a rockery. The flower-stalks, which are branched, are not more than 2 inches high, and the flowers, which are produced abundantly, about three quarters of an inch long. *C. Wolley Dod, Edge Hall, Malpas, August 22.*

## FRUIT GROWING AT OSTERLEY PARK.

As the owner of Osterley Park, the Earl of Jersey, resides here only a few weeks in the year, the gardens have been let for some years past to Mr. E. Poole. The present extent of the occupation, including the original gardens, and the additions made by the present tenant and his predecessor, consists of 50 acres, covered with orchard trees, with a lesser growth below, the whole being under spade cultivation.

The original garden attached to Osterley Park was formed by Mr. Child, the banker, and a great improver here, at a cost, according to Horace Walpole, of £30,000. The soil is a strong loam, resting on brick earth 8 or 10 feet deep, with the gravel of the Thames valley below. Mr. Child drained the garden, but thorough drainage by means of pipes could not possibly be long effective on ground thickly planted with deep-rooting trees. Probably the gravel subsoil secures sufficient drainage, while the evaporation from the dense mass of foliage must tend to dry the surface by dissipating the winter's downfall of water. The soil is well suited to fruit trees of all sorts, though it is a little too cold for the ripening of the best sorts of Pears except on walls. Farmers who read this please observe that this capital strong soil is not warm enough for some fruits, or at least for some sorts; it is not so warm as those parts of the Thames valley where the porous gravel subsoil is more readily permeated by the atmosphere, and where, as in the neighbourhood of Chiswick, the water of the river percolates during high tide to the roots of the Pear trees, feeding them without remaining long enough to stagnate. In those warmer parts of the valley the superior sorts of Pears are grown as standards.

The walls of his kitchen garden were constructed by Mr. Child in a manner that secures their dryness, that is, they are built double with a 9-inch space between the brickwork. Mr. Poole has been the occupier here seventeen years, and during that time he has reworked many of the Pear trees of his predecessor, who planted the sorts in fashion at that time, which have now been replaced by the best modern sorts. Those which are at present most in request as good cropping Pears for walls, are Williams, Jargonelle, Pitmaston, and Louise Bonne of Jersey. It was pleasing to see, too, a well-loaded specimen of that delicious Pear, Gansell's Bergamotte. This is one of the earlier-planted wall trees, and does well occasionally.

A common standard here was Beurré de Capiaumont, which bears well, but is not of superior quality, and has therefore been replaced to a great extent by grafting on it Beurré Clairgau. In walking through the gardens, and strolling in and out of various compartments which we visited, so as to see everything, we came upon another wall Pear—Glou Morceau—which is an excellent sort, but not adapted to the soil here, being sometimes spotted black, as it is this year, though occasionally the fruit proves sound and good. The Ne Plus Meuris has also failed to hold its own, having been reworked with William, though the Ne Plus Meuris from this garden has sometimes been produced at the great City dinners. One Pear, largely planted forty years ago, is still numerous and conspicuous in the garden from its tall pyramidal form. This is the Hessle Pear, a common sort, but such a heavy cropper and so hardy that it is still retained as a profitable sort.

The old rule of planting the larger orchard trees a half rod apart has not been rigidly observed. Mr. Poole is a large grower of Plums, sending the various sorts to market from July to October, and Plums will bear a deal of shade. The crop this season is surprising, the trees being loaded, and some of the branches so heavy with fruit that they hang down as if ready to break, and even in this sheltered garden, amid high walls and taller park timber in the level Thames valley, I noticed that some of the branches had been torn off by the recent high winds. This is considered a "holding soil" for Plums, which in unfavourable situations are apt to drop off when young. The first and earliest sort is Rivers' Prolific. Victoria and Prince of Wales supply the main crop, and other good sorts are grown.

Mr. Poole has himself planted many additional acres of fruit trees to the extent of ten thousand of the modern sorts, besides grafting, expending under lease from the Earl of Jersey—a helpful landlord, who enables his tenants to improve—a large amount of

capital. He invariably trenches the land. It is also manured heavily. Farmers have no idea, perhaps, that at least 20 tons of dung per acre, all round, are required for a fruit garden of this sort, and that is the average dressing here, every acre being cropped and completely covered with fruit-trees and bushes, large and small. It would seem impossible to dig it, yet it is dug, or forked rather, once a year, every inch of it, and kept perfectly clean. I scarcely saw a weed.

There are few gardens so compact as this, the trees standing regularly in the rows, and the various sorts admirably disposed in their several divisions.

The walls are planted on both sides, being guarded by lesser walls, and the slips between are planted with fruit-trees. There are many acres of flower-beds, too, under the walls or between the fruit-trees, the Lily of the Valley being the chief favourite in shaded situations, and the Rose and Gladiolus in more sunny places. The first-named plant is grown by acres in strips, and the Narcissus, though buried now, will spring up by acres in the season. About thirty men and boys are employed in the garden throughout the year, and when the crops are heavy many extra hands are needed.

One of Mr. Child's old vineries must be mentioned. Mr. Poole does not find glass profitable, but this particular house is retained for its great Vine—a Black Hamburgh, which extends the length of the house, or 28 yards, and carries now a crop of 500 bunches, weighing over 1 lb. each. The house is otherwise filled with numerous pots of Maidenhair Fern. Mr. Poole does his own marketing, goes to London three times a week, sleeps there, and is at his stand in Covent Garden Market at 4 o'clock A.M. sharp. This he considers a *sine quâ non*. He sends in his produce by his own vans, and brings back manure. *H. E.*

## DISEASE AND DECAY IN FRUIT.—II.*

### Penicillium crustaceum, Fr.

There is, perhaps, no microscopic fungus in the world more abundant and generally diffused than the "blue mould" fungus named Penicillium crustaceum, Fries. It grows abundantly at all times and seasons, and in all parts of the world. It may be found in almost every conceivable place, and upon the most varied substances. "Blue mould" is familiar to the most unobservant person on preserves, fruit, bulbs, paste, bread, &c. Although the fungus is powerless to start disease on sound substances, yet few fungi have greater power for accelerating disease upon slightly injured objects.

Hitherto this fungus has received but scant attention in this country. It has only been described in the briefest possible manner; and as for illustrations, I am not acquainted with any presentable or complete drawings of this fungus in any English book. Under these circumstances it seems desirable that a description should be given in the *Gardeners' Chronicle*, with figures engraved from Nature to scale. The subject is not one of the easiest to follow, as the life-history of the fungus is somewhat intricate. I recommend its study to the readers of this journal, together with two other papers which will follow, on Aspergillus and Mucor (also fruit-infesting fungi) as a good, very useful, and not too difficult mental exercise.

Penicillium crustaceum, Fr., or, as it is frequently printed, P. glaucum, Greville, is the most common of the fungi which cause the verdigris blue mould so frequently seen on provisions, preserves, fruit, paste, &c. It also attacks liquids, as beer, ink, gum-water, syrup, &c., and it often grows on the surface of water in which plants or other organisms have decayed. It at times grows on various diluted acids and chemical solutions. It is common on and in oil, and in alum water. When the fungus grows in fluid the spawn or mycelium often forms a gelatinous substratum or crust, hence its specific name—crustaceum, and the dusty greenish or bluish spores are borne on vertical threads on the surface. The peculiar and disagreeable odour belonging to mouldy provisions is in part owing to the presence of vast numbers of the spores of Penicellium crustaceum, Fr.

A profuse growth of this familiar blue mould is very common on stale and decaying Oranges in the spring months. The brilliant orange tint of the rind of the fruit is seen in strong contrast with the verdigris blue of the mould. In Oranges, as every one knows, the fungus grows upon bruised places, and penetrates and softens the rind of the fruit in patches; the mycelium then lives in the pulp beneath. The mycelium when in the pulp lives on the juice, and gives rise to a peculiar and somewhat bitter taste in the fruit, not altogether disagreeable when the Orange is not affected to too great a degree.

The name of the fungus is derived from the Latin word "penicillium," which means a painter's brush, in reference to the general form of the fungus growth; this form is illustrated, enlarged 400 diameters, at A and C, fig. 56, when the general resemblance to a

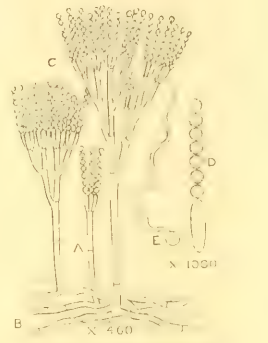



Fig. 56.—Penicillium crustaceum, Fr.
A to C enlarged 400 and D, E, 1000 diam.

miniature whitewash brush, or a flat painting brush, is clear.

A remarkable character in P. crustaceum, Fr., is the unusual and extreme smallness of its size, and the smallness of its spores or conidia. The smallness of its parts is in contrast with its generally profuse growth, for the spore production of even a very moderate growth of this fungus is so large as to be almost inconceivable.

The general habit of the fungus, as it grows in brush-like form, is shown, enlarged to 400 diameters, at A, B, C, fig. 56. The supporting stems, which are jointed throughout, arise from a bed of mycelium, as at B, all the threads of which are also jointed or septate. Each stem branches and rebranches

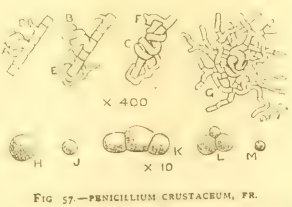



Fig. 57.—Penicillium crustaceum, Fr.
Reproductive organs enlarged 400 diam.; the resulting sclerotia enlarged 10 diam.

towards its upper part, and on the ultimate branchlets are borne upright or slightly curved chains of extremely minute spherical verdigris-green spores, or conidia, as shown at C. When one of the last formed branchlets, with its chain of spores, is magnified 1000 diameters, it is seen as shown at D. It will now be observed that every conidium is attached to the adjoining conidium, or conidia, by an excessively small and almost invisible neck, as illustrated. The conidia germinate very readily in water, thin syrup, or moist air, as shown at E. In moist air the germinal thread constantly turns over on itself in a wavy or screw-like fashion, and at length gives out branches to the right and left, which are also at first undulated or twisted. These lateral branches soon produce innumerable small vertical stems, and upon these stems vast numbers of conidia are borne in a chain-like manner on branched stems as shown in fig. 56 C. The spiral or screw-like manner of growth is frequently seen in the germinal threads of many fungi, as well as in the stems of flowering plants, as the Convolvulus, and a spiral contortion may also be seen in the trunks of forest trees, as in Oaks, Beeches, &c, In fungi it is probably caused by a more rapid growth on one side of the germinal thread than on the other; this habit causes the growing point to turn slightly on itself; in flowering plants the cause is probably similar—a certain part of the plant structure grows with greater rapidity than the part to which it is opposed. Penicillium spores germinate most readily in 22° Cent., the minimum for germination being 1° to 2° Cent., the maximum 40° to 43° Cent.

Within the substratum upon which Penicillium crustaceum, Fr., grows, and when the fungus is kept dry and in darkness, other organs are developed from the mycelium, which at first grow in the form of minute knots, as illustrated at A, B, C, in fig. 57, enlarged 400 diameters. These knotty little growths are believed to be reproductive, and each larger screw-like growth, as at A, B, C, is considered female, and termed an ascogonium or carpogonium. The two words mean bearers of asci (small bladders containing spores) and fruit bearers. The more attenuated growth, as at D, E, F, is considered male, and is termed an antheridium or pollinodium; these words have obvious reference to their male nature and to the anther and pollen in flowering plants, with which they may be compared. The ascogonium is said to be fertilised by the contact of the antheridium, the result being that the former organ at length gives rise to a second form of fruit contained in small sacs or asci. After the cells of the ascogonium have begun to germinate the growth of the threads which now surround it as at G, fig. 57, so hinders development that the ascogonium with its investment of threads rests in a condensed or sclerotioid condition. The illustration at G, enlarged 400 diameters, represents an infant sclerotium in which is embedded a fertilised ascogonium, shown by darker lines in the middle, capable under favourable conditions of producing spores in asci. The growth of the investing mycelium goes on till the sclerotia attain about the size of a pin's point. During this growth several or many ascogonia may be involved in the growing sclerotium, and several sclerotia may become confluent: A series of sclerotia of different sizes are drawn, enlarged ten diameters, at H, J, K, L, and M, fig. 57. Under favourable conditions the threads belonging to the ascogonia form asci within the centre of the sclerotium, as illustrated in fig. 58, enlarged 400 diameters. The illustration is an enlargement of one half of the sclerotium at J, fig. 57, and this half is divided into four equal portions, A, B, C, and D, to show the gradual development of the asci within. At A, towards the centre of the sclerotium, a jointed ascogonium is shown, germinating and producing threads. At B ten asci are shown towards the centre, the mycelium which has borne them is seen growing towards the outside of the sclerotium. Each ascus really contains eight spores, but the asci being extremely small are here shown empty to prevent confusion in the engraving. At C still more asci have been formed, and the mycelium has progressed in growth towards the exterior of the sclerotium. The interior substance is consumed like the albumen of a growing seed. The interior substance of the sclerotium is obviously the nutrifier of the contained spores of the asci. Many asci have now broken up or dissolved, and the free spores are seen towards the centre. At D the whole interior of the sclerotium has been consumed by the growing mycelium and the production of asci, the asci in turn have perished, and the extremely thin layer of external cells of the destroyed sclerotium encloses a vast colony of ripe spores, ascospores, seeds, or sporidia.

At A, fig. 59, an isolated group of asci with mycelium belonging to a germinated ascogonium is shown, enlarged 400 diameters; the asci, owing to their exceeding smallness, are again shown empty, so that confusion may be avoided, but a group of three asci, each containing its normal eight sporidia are shown (enlarged to 1000 diameters) at B. The riper sporidia are drawn in the right hand ascus. Four free sporidia in different degrees of ripeness are shown enlarged 1000 diameters at C, and a ripe germinating spore, enlarged to the same scale, is seen at D. These ascospores on germination reproduce a Penicillium like the one from which they originally arose, as shown enlarged 400 diameters at E, and so the somewhat involved life cycle is completed. If for any

See p. 51.

reason the sclerotium does not produce asci and sporidia, it germinates and produces the conidioid, or simple, common form of the fungus.

The spores of Penicillium crustaceum, Fr., will not effectually grow on perfectly sound fruit, the nature of the fungus is to live on the escaped juices of the fruit, and it is therefore necessary that fruits should become slightly injured and the juices escape before the Penicillium can establish itself upon them. All experiments to make Penicillium spores grow upon sound fruit fail. If fruit pulp, infested with Penicillium is placed upon sound fruit the contact of the infected pulp will so injure and soften the skin of the sound fruit that the juices will escape and the sound fruit will be speedily invaded by the fungus. The case is exactly similar with the infectious spawn-infested gum belonging to gummed bulbs (see p. 149); the gum spreads the disease by contact.

Penicillium crustaceum, Fr., is generally associated with the so-called "vinegar plant" for the reason that if a "vinegar plant" is taken out of its nutrient syrup and allowed to dry, it invariably presents a crop of this mould upon the surface; it is therefore assumed that the gelatinous growth called the "vinegar plant" is no other than a dense mass of mycelium belonging to Penicillium crustaceum, Fr.

A few years ago I noticed a vinegar plant growing naturally in lime-juice, and the example at the time of observation was completely covered with Penicillium crustaceum, Fr., and that species only. The Penicillium grew on the upper surface of the vinegar plant whilst the latter was still moist and upon the lime-juice. On counting the mycelial filaments I found that 1 cubic inch contained no less than 150,000,000 of them; vinegar plants will attain a thickness of several inches.

A remarkable form of Penicillium crustaceum, Fr., which grows upon decaying fruits has been described under the name of Coremium leucopus, Pers., Byssus scoparia, and Floccaria glauca, Grev. In this form the erect fruiting threads of the fungus form a curious confluent mass, and resemble a compound cellular pedicel with chains of spores. We have also seen the fungus growing in a somewhat similar manner in sweet oil, the mycelium absorbing the oil, and forming a compact mycelial substratum upon which the Coremium form of Penicillium grew.

The life history of this minute fungus was first worked out by Dr. Oscar Brefeld, and published at Leipzig in 1874 in the *Botanische Untersuchungen über Schimmelpilze*, ii. heft. The original work is a truly admirable one, and most beautifully illustrated with excellent plates. Amongst many original and accurate observations the author came to one startling conclusion, one that, according to my view is utterly untenable; in fact M. Ph. van Tieghem has already shown in the *Bulletin de la Société Botanique de France*, 1877, vol. xxiv., that Brefeld's view must be abandoned as erroneous.

Brefeld says, in describing the sclerotium of Penicillium, with its contained asci, that it not only resembles a Truffle in structure, but it is a Truffle, and that the Penicillium is only its conidioid fruit. In this he is entirely mistaken. Van Tieghem shows at considerable length how wrong this position must be, for instance some species of Penicillium produce asci like Aspergillus without a sclerotium, and it is impossible to imagine a Truffle with asci only, and no compact environment. The structure of Truffles will shortly be illustrated in the *Gardeners' Chronicle*.

The structure of the sclerotium in Penicillium, I may say, is foreign to all Truffles and resembles Ergot; the sclerotium of Claviceps purpurea, Tul. Germinating Ergot produces asci and ascospores, but these are generally protruded from the central mass of the Ergot on a short stalk. In infancy the head of the Claviceps may sometimes be seen within the Ergot. In such an instance we have a sclerotium containing asci exactly in the style of Penicillium. The growing Claviceps with its asci absorbs the substance of the Ergot exactly in the style of the asci and their mycelium in Penicillium. It would be less unreasonable to place Penicillium with Ergot than with Truffles. Moreover—and this fact is of the highest importance—no Truffle has ever been seen to produce conidia either from its simple cells or its sporidia. In Truffles the asci are formed during the gradual growth of the Truffle itself; they do not come into existence by the internal germination of special organs after the plant is fully formed, as is the case with the asci of the sclerotium of Penicillium; neither is the interior of a Truffle consumed by the mere production of asci within its substance, any more than a common Mushroom is consumed by the production of its spores.

There is only very remote affinity between any Truffle and the sclerotium of Penicillium; there is not

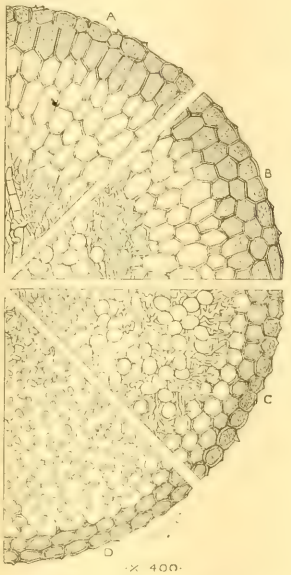



Fig. 58.—Penicillium crustaceum, Fr.

Section of part of a sclerotium, showing the gradual development of asci and spores. Enlarged 400 diam.

even a genuine resemblance, and most certainly there is no identity of structure.

Mr. Dyer, in his essay on the "Classification and Sexual Reproduction of Thallophytes," published in the *Quarterly Journal of the Microscopical Society*, in 1875, adopted Brefeld's views, and placed Penicillium crustaceum, Fr., amongst the Tuberaceæ, or true Truffles. Mr. George Murray has also given Penicillium the same position in the article on fungi published in the *Encyclopædia Britannica*; and in 1878 Penicillium was so placed in Henfrey's *Botanical Course of Botany*.

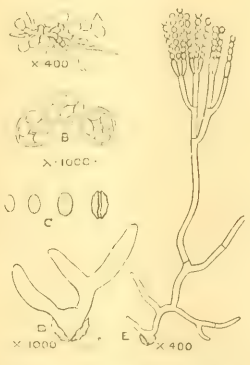



Fig. 59.—Penicillium crustaceum, Fr.

Asci, containing spores and germinating ascospores, enlarged 400 and 1000 diam.

Other writers have said that the yeast fungus, Torula Cerevisiæ, is a mere vegetative form of Penicillium developed under peculiar conditions. According to the *Encyclopædia of Agriculture*, article "Yeast," this "fact" has actually been "proved." Dr. Oscar Brefeld has in turn said that one condition of the smut of corn, Ustilago carbo, is not to be distinguished from yeast.

If these startling statements are to be all accepted, it follows that blue mould, Truffles, yeast, and the smut of corn (to which ergot may be added), are all forms of one fungus. They are probably completely and entirely distinct; there may be certain specious resemblances, but a resemblance, however close, must not be accepted for identity. The untenable positions just mentioned reached their maximum point of weakness when Carnoy asserted that every species of fungus was at one period of its growth a Penicillium.

It is difficult to prevent the growth of Penicillium on fruit, preserves, &c. The spores can be killed with chlorine gas, but this gas has no effect on the spores if they are dry. When the spores are moist, however, the fumes of chlorine gas set up a change of colour from grey-green to dirty yellow, and when thus operated upon they will not germinate. The amount of cold and heat requisite for killing the spores has already been mentioned. A 1 per cent. solution of carbolic acid will kill the spores of many fungi, and paste made with water saturated with salt will not support blue-mould. *Worthington G. Smith, Dunstable.*

# The Propagator.

## CHINESE PRIMULAS: DOUBLE FLOWERING VARIETIES.

This is a most valuable group of plants, and, with the exercise of some care and skill, they may be so kept as to produce flowers from November to the following September. The present is a very good time to put in a good batch of cuttings, and finish up the propagation of all the varieties required for next season's blooming.

The first step to take is to prepare the plants for cuttings; that is, all the yellow leaves should be cut off close to the plant, and all the old dried-up leaf-stalks should be trimmed off the main stem. Any green that may appear on the surface of the soil should be removed, and any plants which are dry should be watered. When these things have been done the plants should be placed in the warm house, where it is intended to propagate them. They should be stood on the front platform as near the glass as possible for about eight days before taking the cuttings. Here they must be watered as they become dry, and lightly syringed morning and afternoon. The house should be ventilated a little and lightly shaded from the sun. In taking the cuttings about an inch of the old stem should be left to each one.

After cutting off a few of the bottom leaves and removing any scales or dried remains of leaf-stalks, and having cut the base of the main stem level, each cutting can be potted into a long thumb-pot. Care should be taken to keep the centre of the cutting well above the surface of the soil; they should be pegged-in firmly with small deal pegs, and the soil should be firmly pressed around the cutting as well as in the pot generally. The leaves should be loosely tied up to a stick. A little sand should be sprinkled over the surface of the soil, and the cuttings should be well watered with a fine-rose pot. They must be placed in a cutting-case or frame upon a gentle bottom-heat; but before they are moved the material in which they are to be plunged should be well turned and watered, and made level again. In the case the cuttings must never be allowed to flag, and to prevent this they must be shaded from the sun, and the lights of the case must be taken off for a short time only every night and morning. At these times of the day the cuttings should be carefully examined to see whether there are any spots of decay on the foliage, and if any such spots are detected they should immediately be cut out, in order to prevent it spreading.

The cuttings should be watered with a fine spout pot as soon as they become dry, but the whole of the cuttings should be sprinkled very lightly overhead morning and evening, or at any other time when symptoms of flagging appear. When the cuttings have rooted a little air should be left on the case for a few days to prepare them for removal from the case. For a few

days they should be stood outside the cutting case and kept well sprinkled with water, and at the end of that time they should be potted into large 60-pots. After having been watered they should be placed on the front bed of the house or platform; care must be taken never to allow them to become dry. They must be sprinkled overhead three times a day (only just enough to moisten the foliage) and shaded from the sun. A little air should be given them every day—the quantity being increased as the plants gain strength. When the plants have rooted they should be removed to a cold ash bottom in the front of the house and as near the glass as possible. The instructions as to watering and shading should still be observed. The plants require a good supply of fresh air, but the house must be so ventilated as to prevent a draught playing upon them. All the flower-spikes that appear while the plants are in 60-pots should be picked off so as to form strong plants before they flower. As soon as they are strong enough they can be potted into well drained large 48-pots, and after being watered they can be replaced upon the cold ash bottom. When the plants get a little stronger it is advisable to discontinue sprinkling them overhead.

Primulas require very little heat, only just enough to keep the house in which they are wintered up to 45° to 55°, and care should be taken that this be not much exceeded, or the plants get weak. During the winter they require to be very carefully watered; it should be done in the morning, and as soon as it is finished, or while it is being done, the house should be ventilated in order to dry up any moisture that may have settled on the foliage. Primulas very readily "damp off" during the winter months if this matter is not attended to.

There is still one point to be noticed with regard to watering—the spout of the pot should be turned towards the centre of the flower-pot and not towards the centre of the plant.

The soil for the cuttings should be composed of equal quantities of good loam, peat, leaf-mould and sand, with the addition of a small quantity of finely broken potsherds. These must be well mixed together and sifted and rubbed through a fine sieve, and if it is dry it must be moistened before it is used.

When the cuttings are potted into 60-pots, and for the older plants, the following compost should be used, viz., half good turfy loam, the other half being made up with peat, leaf-mould, and river sand. Small quantities of potsherds finely broken up, charcoal in pieces of Hazel-nut size, and a sprinkling of Clay's Fertiliser, should be added. *T. O'B.*

## ERYTHRINA SUBEROSA.

IN March this leguminous tree becomes covered with bloom. The disposition of the blossom is in horizontal, closely set racemes, resembling spikes, of about ninety or more flowers, all looking upwards. They begin to open from the base. They are of the Pea-shape section, and owe their brilliancy to the shell-like vexillum, which is 1⅜ inch long, and of an intensely vivid vermilion, with transparent parallel veins. The colour approaches that of a velvety-red sealing-wax, only it is far more brilliant. The alæ are abortive, and scarcely visible. The carina is small, shovel-like, and of a transparent pale green. It simply supports the nine united stamens. This bundle of stamens is very like a diminutive hand, of the colour of pale coral, with five diminutive fingers, the anthers tipping the fingers, like nails. There are four other shorter stamens in the spaces between the fingers. In the palm of this microscopic hand, which is lengthened, lies the pistil. The tenth, or vexillar stamen, is quite separate, and rests upon the pistil.

This is one of the charming flowering trees of India, which natives call "Nasoot." It has a spongy bark, covered with small and permanent stipular thorns. It drops its leaves in the winter, and as soon as it feels the returning warmth of spring it glows with its marvellous masses of vermilion flowers. The unexpanded blossoms are not unlike the tips of neatly-pointed red pencils. If I were a poet I should like to pen a description of this fine tree in verse.

To get up at sunrise towards the end of March and cast your eyes on a group of these trees, with their scarlet bouquets illumined by the morning sun, is a great treat. This is not all. On each tree there is an assembly of elegant birds—the "Goolabi maina" or Pastor roseus, with their salmon-pink breast and jet black head, neck, and wings. They are all twittering, fussing, and merry-making, while they discuss the merits of the nectar. Often attracted, no doubt, by the fuss, comes a solitary crow on the scene, which, like a "bobby," fancies it is keeping order. These pretty Pastors are not often seen at other seasons; as soon as this Erythrina is in bloom, every morning they assemble in crowds. No other bird appears to patronise this tree while in flower.

I have seen the pods, and the seeds also, although they are sparingly produced as a rule; they are eaten while green by parrots. They are not unlike French Beans. This tree strikes readily from cuttings: I have seen large branches, taken at the proper season, root and grow, as if nothing had happened. I do not know that any economic use is made of this tree. Its wood is soft and spongy, and is only used as an inferior firewood. As an ornamental tree, however, there are few that come up to it.

The leaves are trifoliolate, about 18 inches long, resembling those of French Beans. The odd leaflet is 6 inches across, and nearly four-cornered. The petiolets are short, and have a pair of glands at their base. The colour of the leaves is a greyish-green, paler underneath, and rusty green and downy, when young. At the base of the leaf is a pair of sharp stipular thorns.

The E. indica is more spreading, flowers later, and is of a darker red. In my opinion it is not half so beautiful as the suberosa. The latter is a fine tree, fit for avenues, alternating with some dark-foliaged tree. When the flowers cease, and the leaves come out, it is still a fine tree. One would, however, enjoy its charming flowers infinitely more if they were not the forerunners of "punkahs," flies, and mosquitos. *E. Bonavia, M.D., Etawah.*

## Florists' Flowers.

### THE AMARYLLIS.

THE plants have now arrived at the period when they require rest. The treatment must of course be different from what it has been since the plants were in flower. The house must be more freely ventilated, and no artificial heat will be required; neither will they have any more water at the roots. If the plants had all the roots confined in the pots where they were grown it would scarcely do to quite give up watering them; but the roots have run out freely into the tan bed, and even if no water should be applied from now until January the roots will not die—in fact, they will remain in a healthy state, and ready to start into good growth as soon as they are potted.

We have a number of plants growing under Vines which have done remarkably well. Indeed, those who have no other convenience to grow their plants may succeed well by starting them in the vinery, when the house is started, about the end of January. The good old-fashioned way of making up a bed of leaves and fermenting manure in the early vineries supplied an excellent medium in which to plunge the pots of Amaryllis bulbs, and many other plants, for forcing. Keep the leaves free from red-spider and black thrips by washing with tobacco-water. When the plants are plunged in a tan bed the leaves have to be washed with a sponge, but when they are merely growing in pots it is best to dip the entire plant in a large pail of the diluted tobacco-water.

### THE AZALEA.

The flower-buds are now well formed, even on the plants that have not been forced. The leaves ought to be kept quite free from insect pests; indeed, the plants are seldom attacked by anything except red-spider and black thrips, but these troublesome pests cannot do much mischief during the summer months, when the plants are being daily syringed. I like to place all the large and medium-sized specimens out-of-doors after this time; it promotes a more perfect development of the buds. This is seen in a week or two after the plants have been placed in a favourable position out-of-doors; the leaves speedily become stiffer, and their deep green colour takes a slightly reddish tinge.

There are frequently heavy dewfalls during the month of September, and the nights are chilly, so that no insect pests will interfere with the leaves. I like to go into the garden at 6 o'clock in the morning and see the leaves saturated with dew. The flower-buds on some varieties set too thickly, and if they are not thinned out there is quite a mass of blooms crowded together so closely that they cannot open out to their full extent, and the leaves cannot be seen at all when the flowers are open. It may in some cases be necessary to thin out nearly the half of the buds. If the plants have not been repotted, a dressing of some rich compost is necessary on the surface. Clay's Fertiliser, or Standen's Manure, mixed with an equal portion of sandy peat, is as good as anything. *J. Douglas.*

## ATHROTAXIS CUPRESSOIDES.*

SOME time since we were favoured by Mr. Noble with cones of this plant which, so far as we know, have not previously been produced in this country, and which, therefore, we are glad to have an opportunity of figuring.

Athrotaxis is a small genus of Conifers closely allied to Sequoia, but differing in the scales of the cone being provided with a conical point near the apex. The species are confined to the mountains of Tasmania and were first described by Don. Subsequently they have been investigated by Sir Joseph Hooker and others. The three species described are A. cupressoides, A. laxifolia, and A. selaginoides. The plant we now figure (fig. 60, p. 273) is in our experience named in the nurseries A. selaginoides, but an inspection of native specimens, or even of the illustration cited, shows that this is an error. A. selaginoides has looser, larger leaves, lanceolate, and much more acutely pointed. A. laxifolia is in some respects intermediate in regard to the shape of the leaves between A. cupressoides and A. selaginoides; so that, bearing in mind the known variability of the leaves of allied species of the order at various stages of growth, it is not improbable that there is in reality only one species of variable habit. Time and cultivation will show whether this be true or not. In the meantime we may say that A. cupressoides as seen in English gardens is a hardy, low-growing tree, of dark green colour and singular habit, the loosely arranged younger terete branches resembling whip-cord, so rigid-looking are they, and so closely appressed the leaves. Sir Joseph Hooker speaks of it as a conical tree, 40—50 feet in height, with a trunk 15 feet in circumference at 3½ feet from the ground, branches ascending, with spreading distichous branchlets obscurely 4-farious. Leaves minutely ciliated, rhomboid ovate, blunt, bluntly keeled. Cone generally cernuous."

Gunn (n. 365), in the Kew Herbarium, has a manuscript note to the effect that "the tree is very plentiful on the margin of Lake Saint Clair, growing 23—30 feet high, and with trunks 18 inches to 2 feet in diameter. One very old and hollowed trunk measured 15 feet round at 3½ feet from the ground. The trunks taper rapidly from the root upwards, so that to cut a walking-stick you have one end unreasonably thick and the other disproportionately small." A microscopic examination of the leaf shows a single layer of hypoderm cells beneath the epidermis, and surrounding a loose mass of branching cells containing chorophyll, and traversed by one central rather large resin canal, which is surrounded by a double layer of strengthening cells. Bertrand states that each leaf receives a single fibro-vascular bundle from the stem; but in the cultivated plant we examined we were unable to find any trace of vascular bundle in the leaves. The generic name, often erroneously written Arthrotaxis, is derived from ἄθρόος, crowded, in allusion to the overlapping leaves, and τάξις, arrangement.

## PINUS EDULIS AND P. MONOPHYLLA.

PINUS MONOPHYLLA, Torr. and Frem., was described in Fremont's *Report of the Exploring Expedition to the Rocky Mountains in the Year* 1842, *and to Oregon and Northern California in* 1843 *and* 1844 (Washington, 1845, House Doc. No. 166, p. 319, pl. 4). The specimens upon which the description was based were obtained from "Northern California, longitude 111° to 120°," mostly from an area now included in the State of Nevada. Among the speci-

* *A. cupressoides*, Don, in *Linn. Trans.*, xviii, t. 13, f. 2; Hook. f., in *Ic. Pl.*, t. 359, and in *Flor. Tasmaniæ*, i, 354.

mens brought in by Fremont were some in which the leaves were both single and double, but the double leaves were rare exceptions to the general rule.

In the years 1857, '8, and '9, and later, I passed in many directions through most of the country occupied by Pinus edulis and the so-called P. monophylla, in the Northern States of Mexico, Arizona, New Mexico, Colorado, Utah, and Nevada, and I found the facts in regard to the relations of these two forms to be essentially these :—

The chosen habitat and home of Pinus edulis is the belt or area of dry country lying between the saline and treeless portion of the "Great Basin" in Nevada and Utah and the higher and better watered mountain ranges which border or divide the desert areas.

In Southern Utah, between the summits of the Wasatch and the Western Sage plains in Western New Mexico and Eastern Arizona, as well as some portions of Northern Mexico, the Nut-Pine attains the largest size, and stands thickest on the ground. Here it ranges from 20 to 50 feet in height, has a trunk sometimes 2 feet in diameter, and is universally two-leaved. In Nevada and Western Utah the trees are smaller in size, more scattered, and usually have but a single cylindrical leaf. Where the areas of these two varieties meet it is very common to find trees in which the foliage is about equally divided between the single and double forms. Hence it would seem that the single-leaved variety is a somewhat dwarfed and depauperate form, the effect of aridity of climate ; and the single solid leaf is apparently an exhibition of the tendency so conspicuous among desert plants to reduce the ratio of surface to mass in the leaves, or the parts of the plant which perform the functions of leaves. In Cactus, Holocantha, Canotia, Ephedra, &c., we see the extreme form of this self-protective modification,—no leaves, but an epidermis which does what little there is for leaves to do, and in Cactus, Holocantha, &c., a formidable array of spines to protect this from possible injury. Dr. Torrey, to whom more than twenty years ago I showed my specimens of Pinus monophylla and P. edulis, agreed with me in considering them only varieties of one species. Mr. Thomas Meehan, in his interesting note lately published on this subject, considers the two forms as of common origin, but as constituting distinct species. It seems to me, however, they are typical varieties of common origin and shading into each other, and of unusual interest, since their relationship can be easily traced, and, if I am right, the causes which have produced the differences are easily comprehensible. *J. S. Newberry, in "Bulletin of the Torrey Botanical Club."*

# Plants and their Culture.

## CLIMBING PLANTS FOR THE CONSERVATORY.

Should the Camellias in the open border, and to which we alluded in our last Calendar, be situate in the conservatory the present will be a capital time either to renew the soil around their roots, or to plant fresh stock where any are giving indications of vital exhaustion. It will be advisable also to take into consideration the extirpation of insect pests that may be giving any serious trouble ; when such an excellent opportunity presents itself by all means make the best of it, and if necessary summon up courage and destroy the climbers rather than be troubled with either mealy-bug or white-scale another season. Young plants of healthy growth will soon make rapid progress, and by the end of another year no regret will be evinced that the old ones were destroyed and advantage taken of the new soil wherein to start a fresh lot.

When this is decided upon, and prior to replanting, some two or more coats of paint may be necessary both to add to the appearance and to more effectually exterminate the insects we have named. Consider well the temperature at which the conservatory is maintained during the winter months ; if kept slightly warm beyond ordinary greenhouse culture some few climbers may be introduced that would not otherwise succeed. Bignonia venusta is an instance of this. Hexacentris lutea, Bougainvillea speciosa, and the Tacsonias will all thrive well in such a case. If the temperature is only maintained at a few degrees above freezing-point in sharp weather then choose the plants accordingly, never omitting the Lapagerias, giving them a cool, moist, and, if possible, a slightly shaded position. Lonicera semperflorens minor, Bignonia Cherere, Acacia Riceana, and Chorozema Chandlerii or C. Lawrenceana would be among the best to select in such a case, and give far better satisfaction than the more tender kinds.

## GREENHOUSE HARD-WOODED PLANTS.

The stock of these that have now for some time been past their best in regard to bloom should have all faded flowers removed, and young growth encouraged in every instance. In some cases this will already be considerably advanced, such plant, therefore, should be thoroughly exposed to the genial warmth of the sun, to ripen up the wood to that condition which is requisite to ensure a successful crop of flower another season. Where repotting is contemplated lose no time in getting the same completed. Avoid large shifts ; an extra inch all around the old ball is enough for any plant of this class.

Keep a watch on any attack of red-spider upon the Pimeleas and Chorozemas. Mildew will also attack several of the Ericas ; this insidious enemy will soon seriously affect the health of the plant. Preventive measures with the sulphur duster, or by means of mixture in water to the denser growing kinds, will be the safest plan to follow. Epacris for autumn and winter blooming must also be exposed to the full sunshine now until housing time is to hand again. If the condition of any of these at the root is not so satisfactory as one would wish, it is not too late to repot such : it may possibly save their lives or at the least it will start them into renewed vigour another season.

The stock of Lachenalias should be repotted without delay, root-action will soon commence, and if performed then a check to the bulbs will be the result. After potting we advise them to be placed in a frame with a south aspect, but the lights entirely removed therefrom both by night and day till any danger from autumn frosts is apprehended. L. luteola is a most desirable addition, so also is L. Nelsonii, and both should be thought of when the regular bulb order is being made out for the season. *James Hudson, Gunnersbury House Gardens, Acton, W., Aug.* 25.

# Fruits Under Glass.

## FIGS.

The second crop of Figs on the trees which was started into growth at an early period in the current year will now be ripening, or fast approaching this condition, assuming the trees have had the treatment as advised for them after the first crop of fruit was gathered, namely, a brisk heat, with plenty of moisture combined. This condition should, as soon as signs of ripening are indicated in the fruit, be somewhat abated, and replaced by a slightly arid and more airy state ; for this purpose it will at certain times be necessary to use a little fire-heat, in order to maintain constantly in the house a degree of heat of about 70° at night, and 80° in the daytime, with a little air at both the top and front of the house always on, otherwise the fruit will be insipid, and almost colourless. In the usual course of treatment it is customary, just prior to the fruit taking the second swelling, to give the trees an abundant supply of water, and, if needful, a little stimulant with it. If this matter has not been attended to, defer it no longer, but copiously water the borders in which the trees are growing, and keep the mulching material which is on the surface-roots well supplied with it too. As soon as this crop of fruit is gathered attention should be given to the maturation of the wood. Go over the trees and remove all superfluous growths, and others where they are too thickly placed, leaving only those that will be required to yield the fruit the subsequent year. The growths should be brought up near the glass, where, by the direct operation of sunshine, heat, and air they will become hardened and fruitful. Trees in pots which now are placed out-of-doors should be kept free from insects by a frequent use of the syringe. Abundantly supply water at the roots whenever the trees need it, and as soon as they are in a dormant state the necessary preparations before starting them into growth again should be executed, which consists in examining the state of the drainage, the shifting of those trees which need it into larger pots, and in disrooting such as may need it before starting them again. *G. T. Miles, Wycombe Abbey.*

# The Hardy Fruit Garden.

The most important work here will be the gathering and storing of Apples and Pears. Apple trees of such varieties as Lord Suffield, Lane's Prince Albert, Cellini, &c., bearing heavy crops, should be gone over two or three times, gathering the largest and ripest fruits each time ; by doing this the trees will be able to bring the fruit to greater perfection, and it will also considerably prolong the season of each variety. Pears should be treated in the same manner. By adopting this plan such varieties as Williams' Bon Chrétien and Winter Nelis may be had in season for six weeks or even two months, and many others in the same way. It is a great mistake to leave the fruit on the trees till perfectly ripe and then gather all at one time.

Now is a good time to make a thorough examination of the orchards by making notes of the free-bearing varieties, and also marking those which should be cut-back for grafting in spring with the varieties which have proved most suitable for the district. It is waste of ground and labour to continue growing year after year varieties which seldom produce anything but wood and leaves. It is not timber that should be our object in growing orchard trees but healthy free-bearing varieties. As instance —here Waltham Abbey Seedling, although recommended as a free bearer, is almost worthless, and is now condemned, and again Cellini on the Paradise stock is a grand cropper, and as an orchard tree is a failure. The same with Plums : Orleans, Victoria, and Jefferson's, produce more fruit taking one season with another than any other kinds grown here, although we grow a great many.

## STRAWBERRIES.

A space of ground should now be prepared for making fresh plantations, the size of plantation must depend on the space available and the demand. When the ground is limited they may be planted 6 inches apart in the rows, and 18 inches from row to row, this would allow for the plants being destroyed as soon as the fruit was gathered next season. *J. Smith, Mentmore Bucks.*

# The Kitchen Garden.

## FRAMES.

The late sowing of French Beans growing planted out in unheated frames for the purpose of giving a fortnight or threee weeks' supply between the last outdoor gathering and the first indoor gathering from plants grown in pots in heated houses should now have the lights placed over them at night. Should the plants not yet be showing flower the lights may be placed over them for good, giving ample ventilation during favourable weather, and syringing and closing with sun-heat in the afternoon, otherwise they may be too late to do any good. At the beginning of September a batch should be planted in pots ; the Beans will come up well if the pots are placed in an unheated frame, and closed with sun-heat, from whence they can be top-dressed and placed in a warmer position.

## CUCUMBER-HOUSE.

As the nights are now getting chilly care should be taken that the night temperature and bottom-heat do not fall too low. The plants should now be making good progress, and as the sun wanes in power earlier syringing and closing should be practised, in order that the afternoon temperature may run up to 85° or 90°. *G. H. Richards, Somerley Gardens, Ringwood, Hants.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Aug 31 | Sale of Bulbs from Holland, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms |
| TUESDAY, | Sept 1 | Sale of Plants at Horn Lane, Acton, by Protheroe & Morris<br>Glasgow and West of Scotland Horticultural Society's Show at St. Andrew's Hall, Glasgow.<br>Bath Autumn Show (two days). |
| WEDNESDAY, | Sept. 2 | Sale of Bulbs from Holland, at Stevens' Rooms<br>Sale of Stove and Greenhouse Plants at the Ceylon Nursery, Eastbourne, by Protheroe & Morris<br>Alnwick Horticultural and Botanical Society's Annual Show |
| THURSDAY, | Sept. 3 | Sale of Established Orchids, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Sale of the Freehold of the Whetstone Nurseries, at The Mart, by Protheroe & Morris |
| FRIDAY, | Sept 4 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Sept. 5 | Sale of Bulbs from Holland, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris Rooms. |

THE notes on the approaching PEAR CONGRESS by our correspondent "X.," at p. 202, are timely, and suggestive as to what a really representative Conference on Pears might accomplish. Perhaps the article savoured a little too strongly of the market element, and did not lay sufficient stress on the fact that Pears, however cheapened, can never take an equal position with Apples or Plums as culinary fruits for the million, and therefore it is hardly worth while to bestow much attention on this phase of the question. It might be well if the Conference confined its deliberations, firstly, to deciding on the best kinds of Pears for certain districts and soils, naming the kinds that should be grown in those districts on walls, and those that do well as standards, bushes, cordons, &c., and those that are best on Quince or Pear stocks. Secondly, the best modes of training and pruning—root and branch—in summer and winter; and, thirdly, the correction of nomenclature and the reduction of the long list of varieties to, say, thirty for each district from which we may rely on a supply of dessert fruit from the beginning of August to the end of February.

Supposing that the Conference decides on taking all or but one of these phases into consideration it is obvious that the decision must be based on observations made by persons in different districts, and, therefore, every gardener interested in Pears ought to make it a point of conscience to render what assistance he can by notes to the gardening papers before the Conference takes place, and at the time of it, by sending specimens of fruit with notes as to soil, site, &c, in which the fruit has been grown. Mr. WILDSMITH, writing to us on the subject from Hampshire, says:—

"I have under my charge, perhaps, as good and large (too large) a collection of varieties of Pears as there are in the majority of private gardens, and from notes made of most of them under varying conditions of weather, stocks, pruning, training, soils, and manures, I may be able to aid in some degree the determination of varieties, &c, best suited for growing in the south-eastern group of counties that your correspondent 'X.' suggests—a suggestion that, with certain modifications as to soil, is the best that can possibly be made. I divide my notes as follows:—First, stocks, soils, manures, and when and how to apply the same. Secondly, pruning, training, aspects and forms that are best suited to certain varieties; and thirdly, a general list of varieties, their season of ripening, &c., with allusion to the merits and peculiarities of each.

"First: Stocks and soils.—Well, in some measure the one must determine the other. For the light sandy soil of this district the Quince—speaking generally—may be said to be unsuited and short-lived—fruits to death in fact: and yet some varieties on this stock in this soil grow much larger, ripen better, and colour more perfectly, than they do even when double grafted on the Pear stock; and that they are more productive, or rather, I should say, bear full crops at earlier stages of growth, goes without saying. To such varieties allusion will be made at another time, for the present it must suffice to say, that for light soils generally the Pear stock is by far the best, but it requires more skilful treatment in regard to pruning and general management, to induce young trees to bear full crops at a very early period after first being planted, but it can be accomplished, as it is solely a question of labour.

"Any one accustomed to observe the differing forms of root formation made by trees of all descriptions, will at once understand why Pears on the natural stock should be longer in attaining fruitfulness than they are when grafted on the Quince. The roots of the latter are invariably to be found on, or perhaps I should say, immediately under the surface of the soil; but Pear roots will go down, and unless we go after them—that is, root-prune—a full fruiting state is an impossibility. This natural deep rooting of the Pear furnishes the reason why, in a general way, it is the best stock for light soils, simply because the roots in dry, hot weather are out of harm's way; but unfortunately also their depth excludes them from the benefit they would derive at certain seasons were they within reach of sun and air, and this fact gives the clue as to the lack of colour and size that is sometimes so marked, between the fruit grown on the Pear and of the same variety grown on the Quince.

"In a season like the present the differing conditions may be less marked, for the Pear stock will, this droughty season, have the advantage, though in cases where abundant surface mulchings and waterings have been given, the fruit from the Quince stock may be expected to be finer than ever; and here I may as well confess that my leanings are all in favour of the Quince stock; indeed, given certain conditions as to labour, manure, and renewal of exhausted plantations, and the Pear stock would be nowhere; but (we gardeners are terribly handicapped with 'buts') the attaining of fresh sets of trees, at intervals of from four to six years is not an easy matter, or if it is, sufficient ground is probably not at command for growing two sets, not to mention the additional labour involved, besides the extra manure, particularly as surface mulchings, that trees on the Quince require, if the fruit is to be of the first order. Of course, it is possible so to manipulate natural soils as to make them suitable for either stock, but for the most part it is so expensive a procedure that it is better to keep to the general lines of growing Pears in very light soils on their natural stocks, and in heavy (not undrained clay soils though) on the Quince.

"We have a quantity on this last stock, and when preparing the soil for them, all the heavy soil we could get—which was not much—we mixed with the light, and added as manure a small percentage of ½-inch bones, and wood ashes. Potash, which, for light soils, is an invaluable ingredient for the retention of moisture (for which purpose we use it, rather than as manure), and, by way of substitution for lack of tenacious soil the whole was well pounded, both before and after the trees were planted. Though I have had but slight experience of heavy soils it has been ample enough to enable me to say that by the addition of abundance of opening material, such as mortar rubble, oyster shells, small pieces of brick, burnt earth, and charcoal, a soil in every way suitable for Pears on the Quince may be made by any that are desirous of thus growing them.

"Now, as to manures and time of applying the same: none whatever other than that in the ingredients just mentioned—if any but the bones can be so designated—should ever be used directly with the soil, but always as top-dressings, or what, in gardening parlance, are styled mulchings. The best time to apply them is always—*i.e.*, full-bearing trees should never be without them, but renewal of them is another matter. There are certain stages of growth where additional help is doubly valuable, and the most important of all is immediately after the fruit has set and begun to swell: then it is that fresh mulchings should be applied, and be again renewed early in July, and supplemented by three or four waterings with liquid manure, or, in lieu thereof, over the mulchings may be sprinkled soot, guano, Beeson's manure, Clay's manure, or some other good fertiliser; and in the absence of rain they should at once be washed in by watering over them. Too much stress can scarcely be laid on the importance of giving some one or other kind of manurial dressing during the early stages of the swelling of the fruit—their effect is then most marked; whereas, if delayed till the fruit is nearly full grown, such dressings are all but useless. The veriest novice will understand the necessity of discernment in respect of certain trees between proper feeding and excess. The other part of my subject must be deferred to a future issue."

—— THE ROYAL HORTICULTURAL SOCIETY.—If the show in the conservatory on Tuesday last was not so attractive as some that have preceded it, it had at least the beauty attaching to appropriateness and utility. The main feature of the display consisted in the competitions for the cottagers' and artisans' show of fruit and vegetables. We have heard the Society blamed for catering for the luxuries of the rich and ignoring the necessities of the poor. This is not fair. The Society has its own coffers to look to, and must be just before it is generous, but Tuesday's show is a proof that the interests of the poorer classes are studied as well as of those blessed with a larger share of goods. The collections of vegetables reported on in another column were generally excellent. We might suggest to the Council the desirability of supplementing the money prizes by seeds, plants, and grafts in due season, of the sorts known to be best adapted to particular localities. The diffusion of good sorts, with instructions for cultivation, would be more useful than prizes of 10*s.* downwards to 2*s.* 6*d.* In addition there were interesting collections of fruit, and a miscellaneous lot of things were brought before the Floral Committee, including the singular Æranthus Leonis, two beautiful Lælias, one a hybrid—L. Sedenix, with rosy-lilac segments, and a very deep magenta lip, white on the under-surface; the other an imported plant—Lælia elegans Littleana, a fine variety, in which the segments were of a dull pink or puce colour, the lip rich magenta, with the under-side clear white. Four flowers were open for the first time on August 24. The curious Aganisia cœrulea, with pale blue hooded flowers, and a reddish lip, was also shown, and secured the appropriate award of a Botanical Certificate. A hybrid Gastronema, raised between Vallota purpurea and Gastronema lanuginosum, was interesting; but, apart from its interest, scarcely so noteworthy as its parent. The flowers are broadly trumpet-shaped, pale orange-pink in colour.

—— The following has been forwarded to us for publication within the last few days:—At the general meeting of the Society on July 28, the following persons were, on the nomination of the Council, elected:—

*Honorary Members.*

Edmond Boissier, Geneva.
Professor Asa Gray, Cambridge, Mass., U.S.A.
Lieutenant-General H. E. de Greig, President of the Imperial Society of Horticulture, St. Petersburg.
George King, M.B., F.L.S., Superintendent, Royal Botanic Gardens, Calcutta.
Sir Ferdinand von Mueller, K.C.M.G., F.R.S., Government Botanist, Melbourne.
Dr. Richard Schomburgk, Director of the Botanic Gardens, Adelaide.

*Foreign Members.*

Lewis A. Bernays, F.L.S., Clerk to the Legislative Assembly, Queensland.
Professor Maxime Cornu, Director, Jardin des Plantes, Paris.
Count Oswald de Kerchove de Denterghem, Governor of the Province of Hainault, Mons.
A. De la Devansaye, President of the Horticultural Society of Angers and Maine et Loire.
Professor Du Breuil, Institute Nationale Agronomique, Paris.
Dr. A. W. Eichler, Director of the Royal Botanic Gardens, Berlin.
O. Fenzi, President of the Royal Tuscan Society of Horticulture.
F. de Cannart d'Hamale, Malines.
Dr. A. J. Kerner, Director of the Imperial Botanic Garden, Vienna.
Professor Peter Macowan, B.A., F.L.S., Director, Botanic Garden, Cape Town, South Africa.
Max Leichtlin, Baden-Baden.
Charles Moore, F.L.S., Director, Botanic Garden, Sydney.
Dr. Edouard Morren, Professor of Botany in the University of Liége.
Professor C. S. Sargent, Director of the Arnold Arboretum, Brooklyn, Mass., U.S.A.
Henri L. de Vilmorin, Paris.
Sereno Watson, Keeper of the Herbarium, Harvard University, Cambridge, Mass., U.S.A.
H. Wendland, Director of the Botanic Garden, Herrenhausen, Hanover.

—— THE SUPPLY OF THE PAPER.—The Publisher asks us to request that those subscribers to the *Gardeners' Chronicle* who experience any difficulty in obtaining their copies regularly, should communicate at once with him at the Office, 41, Wellington Street, Strand, W.C.

—— THE "FLORA OF BRITISH INDIA."—The twelfth part of the *Flora of British India*, completing the fourth volume, has just been issued. This important instalment contains the remainder of the Acanthaceæ, and the Verbenaceæ, monographed by Mr. C. B. CLARKE, while Sir JOSEPH HOOKER, the editor, himself contributes the description of the Selaginaceæ, Labiatæ, Plantaginaceæ, Nyctaginaceæ, Illecebraceæ, and Amarantaceæ. It will thus be



BRIDGE, OSTERLEY PARK, MIDDLESEX.

seen that this represents an important addition to this standard account of the plants of British India.

—— Potatos.—A cultivator of Bruges, Antoine Verhulst, was, if not the first to grow the Potato in Belgium, the one, according to the *Revue de l'Horticulture Belge*, who first undertook its culture on an extended scale. He distributed tubers to the members of the Brotherhood of Gardeners of Bruges, otherwise called the Confraternity of St. Dorothy. This was in 1702, and in 1740 the Potato was sold in abundance in the Bruges markets. In France the introduction of the Potato into general use as an article of diet dates from 1785, when Parmentier, who had been encouraged by the King, Louis XVI., offered his Majesty at the Tuileries a bouquet of Potato flowers on August 25, 1785. The King placed one of the flowers in his button-hole, caused the Potatos to be served at his table, and warmly congratulated Parmentier. In this way the prejudice against the tuber was ultimately dispelled, and now Parmentier is to have a statue.

—— The Pyracantha as a Hedge Plant.—This plant may be recommended as forming an impenetrable hedge. It grows rapidly, is indifferent to soil, and in most seasons bears a profusion of berries, which give it a handsome appearance, and by means of which it can be reproduced.

—— Tigridia grandiflora alba.—The species of this American genus are few, but popular favour is almost or quite confined to T. grandiflora and its varieties. This is easily accounted for by its being by far the largest flowered member of the group. The so-called white variety is peculiarly handsome, and forms a striking contrast to the type. The ground colour is indeed pure white, but the interior of the broad saucer-shaped base is heavily maculated by large crimson spots. The effect of this, combined with the huge dimensions of the flower, may be more easily imagined than described. It is rather disappointing that the duration of the flowers is so ephemeral; this, however, is partly compensated by several flowers being produced in succession

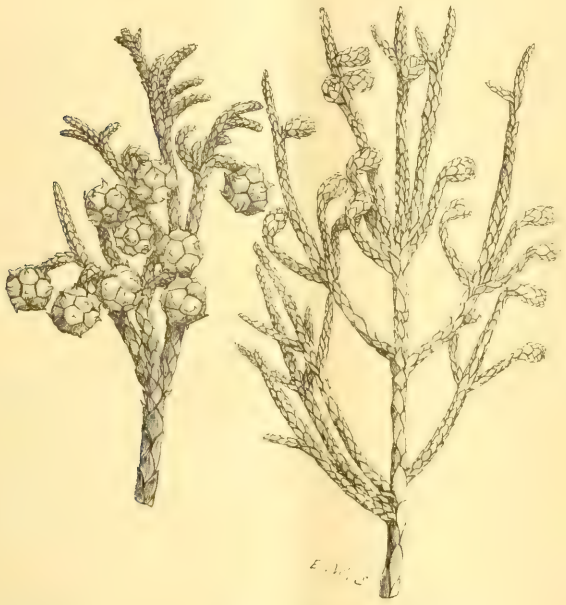


Fig. 60.—Cones and male spikes of Athrotaxis cupressoides. (see p. 270.)

—— Cones.—We have lately received from Mr. A. D. Webster cones of Abies (Picea) grandis, of a dull olive-green colour. We do not remember to have heard of this tree coning in the country before. In the grounds of the Cranston Company at Hereford we hear that A. magnifica is producing cones, while Mr. George Paul tells us that A. concolor is to be seen in cone at High Beach. Pinus macrocarpa is in cone at Bayfordbury, as mentioned some time since. These are fortunate occurrences, not only that they add to the beauty and interest of our plantations, and furnish means of increasing our supply by seed, but also because they enable us in some cases to throttle the confusion that was inevitable in olden time, and in some measure to do away with, or bring into order, the complicated synonymy that has arisen.

—— Araucaria imbricata.—The *Times* ought to have a horticultural editor, and a geographical "sub." In mid-silly season it has been entertaining its readers by recording a Chilian tree as tropical, and publishing the production of cones on Araucaria imbricata almost as if it were an unheard of phenomenon.

from the same spathe. A fine clump of bulbs has been flowering freely in a border at Kew along with a large collection of Cape bulbs, with which it associates very well, although a native of Mexico. T. grandiflora is synonymous with T. Pavonia, and figured in the *Botanical Magazine*, t. 532.

—— Floriculture in the City.—Dogberry, in the *City Press*, describes a visit to the roof of the hall of the Armourers and Braziers' Company, in Coleman Street, where the unexpected sight of a well-kept miniature garden of no mean order repaid his curiosity. Here in the open air were cultivated the sweet-scented Heliotrope, Lobelia, Calceolaria, Nasturtium, boxes of Mignonette in full bloom, Pelargoniums of varied hues, with Tobacco plants in bloom. In a small conservatory were Cucumbers ready for the knife, and many specimens of choice Ferns. Such a garden shows what can be done with energy in this direction even in the City.

—— The Tomato.—Tomatos are grown exclusively for their fruits, and compared with some other plants they are young in cultivation, that is, they have not been subjected for ages to the selective agency of man. Hence we might expect to find considerable variation in the fruit, as in truth we do, but fewer variations in the other parts of the plant. Thus in the series of varieties grown at Chiswick the calyx is alike in all cases, though the foliage is different—the leaflets in "Chiswick Red," for instance, being distinctly stalked—and the inflorescence, cymose in all cases, forms two distinct types, one in which it is spreading, the other in which the flowers are arranged in long zig-zag racemes. The latter type would seem to be preferable for cultural purposes. The principal differences, omitting those of purely botanical interest, may be thus marked :—

*Fruits Red.*

| | | | |
|---|---|---|---|
| Globose | smooth | *e.g.*, | Trophy |
| | ribbed | ,, | Large Red |
| | proliferous | ,, | Turk's Cap |
| Pear-shaped | | ,, | Fig Tomato |

*Fruits Yellow.*

| | | | |
|---|---|---|---|
| Globose | | ,, | Green Gage |

In addition, account must be taken of the early or late ripening, the abundance or paucity of fruit, the size of the berries, which varies from the size of a Currant, as in the Red Currant Tomato, to that of a medium-sized Apple. In the proliferous forms a second row of carpels is formed within and above the first, so that the ripe fruit is in two storeys, upper and lower.

—— Catalogue of Rose Species.—Mr. Baker asks us to insert the following, which was accidentally overlooked in the catalogue at p. 199 :—

7. *R. setigera*, Michaux, = R. rubifolia, R. Brown.—North America.

—— Preserving Vegetables in France.—The old saying that "It is an ill wind that blows nobody good" is being verified in France in the Department of Morbihan, where the principal industry is that of preserving sardines and tunny fish in oil, there being no less than seventy establishments on the coast, employing 20,000 fishermen, and over 10,000 workmen, consisting of the plate-workers, labourers, and women who preserve the fish. As is well known, the production of the sardine and tunny fisheries has been decreasing for the last five years, and it is estimated that during the present year not more than twenty-five out of the seventy workshops will be in operation owing to the want of funds. The catch of sardines on the coast of Morbihan, which formerly sufficed to provide on an average of about 400,000 cases of preserved fish, representing a value of about 14,000,000 francs annually, has decreased of late years to about 70,000 cases of the value of about 3,000,000 francs. The consequence of this depression has been the cause of stimulating the cultivation of various kinds of vegetables, and several manufacturers have erected large works for the preserving of vegetables, such as green Peas, French Beans, &c. This increased consumption of vegetables has greatly benefited the farmers and cultivators, and gives employment to a large number of women who earn on an average 1 fr. 60 c. per day.

—— Picea Engelmanni and P. pungens.—These two species are very much alike, at any rate in the young state, as seen in gardens. Of each there is a green form, and of each a glaucous form with intermediate variations. The very glaucous form of P. pungens is that known in gardens as Parryana glauca, and it is the handsomest of all. The young shoots of P. Engelmanni have greyish bark, the bud-scales form a tube round the base of the young shoot and are flattish, not recurved at the tips; the leaves are slender and straight. P. pungens has reddish-brown bark (on the young shoots), bud-scales falling off in a little cup, each markedly reflexed at the tips; leaves shorter than in P. Engelmanni, stouter, curved like little scimitars, and with a longer stiffer point. P. Engelmanni is sometimes called P. commutata.

—— Bignonia purpurea.—It is a little puzzling to account for the paucity of representatives of this large genus in gardens, seeing that their cultural requirements are by no means beyond the skill of horticulturists at large. Considerably over 200 species are known to science, although probably not a third of them are in cultivation at the present time in the gardens of this country. Possibly one of the chief objections to the various members of this genus is the amount of space required in order to get them into

flowering condition, but this inconvenience is more than counterbalanced by the gorgeous display of flowers when produced. The particular species under notice is seldom seen in cultivation, although introduced as early as 1822, probably by Loddiges, of Hackney, by whom it is named. A splendid specimen trained up close underneath the curvilinear roof of the Palm-house at Kew, shows off its long, pendent, floriferous branches in the best possible manner to visitors passing underneath. The great secret to be kept in view is to allow these slender laterals to hang down, while at the same time due attention to regulating the leading shoots is made. The leaves are medium-sized and evergreen, while the clear, uniformly purple flowers are borne in two to five-flowered axillary cymes, producing a pleasing and attractive effect.

—— Vegetable Products of Nice.—In a report from the British Consul on the trade and commerce of Nice for the past year, it is stated that the Olive crop suffered considerably from the long droughts. As the harvest commences in October, and lasts till March, when the drought is very prolonged, the Olives shrivel up and drop off before coming to maturity, while when suffering from drought they seem to be more easily affected by the ravages of the "keiron" insect. The damage done to agriculture in this department by the wholesale destruction of birds is said to be incalculable. The subject is attracting the serious attention of the local agricultural society, and is also being ventilated from other motives by the Societies for the Prevention of Cruelty to Animals of Nice, Cannes, and Mentone, and it is hoped that their united efforts may lead to a beneficial change in this respect. Another instance of short-sighted policy referred to is the wholesale destruction of the forests. The wise *reboisement* commenced during the Empire has been discontinued, probably from motives of economy, until the last three years, and the ignorant mountain communes have been growing rich on the profits of the destruction of their remaining timber. The matter has, however, been taken up once more by the Government, and the *reboisement* of some districts is now being energetically carried on. The cultivation of flowers for perfumery purposes and the manufacture of perfumery for exportation have been carried on for years on this coast, but the cultivation of flowers for direct exportation is an industry of quite recent birth, and is due to the additional railway facilities, the accelerated service, and to the establishment of the Parcel Post. They have led to the establishment of the Societi Florala Company, who grow their own flowers, and export them to all parts of Europe. The British Consul expresses himself as being satisfied that this is an industry which is capable of great development, and which will well repay the producer. What is wanted for the local grower is to be put into direct communication with the flower shops of London and Paris.

—— Shrewsbury Horticultural Exhibition.—The attendance at the recent Shrewsbury Show, we understand, exceeded any which this flourishing Society has ever previously had. On the first day a larger number were present than on any previous opening day; on the succeeding day some 22,000 people entered by payment at the gates, the sum taken in shillings and sixpences being over £1074. To this number must be added 10,000, who held tickets purchased before the show, making altogether 32,000, which, we suppose, is a larger attendance than has ever before been known at a provincial horticultural show on one day.

—— Public Improvements at Chepstow.—Every person who has visited Chepstow this summer must have been pleased with the beautiful garden which Messrs. Pillinger & Co., the local horticulturists and seedsmen, have laid out immediately adjoining the railway station. The triangular patch of ground, opposite to the nurseries, was until recently filled with rank grass and rubbish, and occasionally "enlivened" by the presence of a "Gospel tent," or a "threepenny theatre;" and most people were glad to get past it as soon as possible. Mr. Hay, the managing partner in the firm of Pillinger & Co., has taken the unpromising "patch" in hand, and converted it in a short space into a delight for the eye, and a continuous spring of delicious perfume. The show of Roses a month or two ago was glorious; and now that the golden harvest time has come there is a display of other flowers, so nicely arranged that quite a jewel-like effect is produced. In the avenues some pleasing contrasts are caused by introducing the silvery foliage of the variegated Maple amid the darker shades of Irish Yews and deciduous trees, while the ground glows with the bright colours of the borders and beds of Gladioli, Verbenas, Pelargoniums, Petunias, Calceolarias, Lobelias, Nasturtiums, and other favourites. Every one who has seen the place will endorse this tribute to Mr. Hay.

—— "Bulletin of the Royal Botanical Society of Belgium."—The fascicle for 1885 contains a list of the Cryptogamic plants of Belgium, by M. E. Pâques; a further instalment of M. Marchal's description of the Coprophile fungi, with illustrations; and an elaborate monograph of the species of the genus Thalictrum, by M. J. C. Lecoyer.

—— Abies morinda as a Hedge Plant.—This plant, though somewhat "spring-tender," grows rapidly and in some seasons produces a succession of new growths. Its thick-set, sharply pointed leaves make good shelter.

—— Seedling Dahlia Prizes.—In addition to the Turner Memorial Prize for Dahlias, which is represented by a handsome Silver Cup value ten guineas, the overflowings of the subscription, which was necessarily limited to Dahlia fanciers, have been devoted to three prizes (£1, 12*s.* 6*d.*, and 7*s.* 6*d.*) for the best seedlings exhibited at the Crystal Palace Show on September 4 next. The prizes are to be additional to the Certificates offered in the schedule. The growers of Dahlias should note that this Grand National Show will soon be upon us.

—— Presentation to Mr. James MacLean.—The name of MacLean is so well known in Leicestershire to the lovers of horticulture, that it is almost superfluous to state that he has for a great number of years occupied the onerous position of head gardener at Beaumanor Hall, near Loughborough, which post, in consequence of his declining years, he is compelled to vacate. On Thursday evening last occasion was taken of his retirement from active service to pay him a well earned compliment, and at a supper at the "Cherry Tree" Inn the veteran was presented by Mr. D. Roberts, gardener, Prestwold Hall, on behalf of Mr. MacLean's numerous friends who had contributed towards it, with a gold watch and chain and a framed illuminated address as a small token of their respect for him. The address bore the names of upwards of forty subscribers, and was the work of Mr. James Walkup, Secretary of the Loughborough Horticultural Society, in which Society, as well as in the Quorndon Society, Mr. MacLean ever took a deep and active interest both as a member of the committee and a judge.

—— Vegetable Culture at Mobile.—Under the above head Mr. Consul Cridland reports that this industry has not yet received the attention or assumed the proportions which its value and importance should command. The excellent water and mild climate of the district for eight months of the year, the average healthy condition of the farm lands, and other advantages, clearly demonstrate what profits can be derived from the industry. The present small area under cultivation is in the immediate vicinity of the city, and there are 600,000 to 700,000 acres of just such lands in the country of Mobile awaiting cultivation. An increased acreage was planted in vegetables during the past year, and good crops were realised, except in Cabbages, which were most seriously damaged by most unusual and severe weather in January, and a general replanting was necessary, resulting in a very short yield as compared with former seasons. The large production of Peas, Beans, and Tomatos, in a measure counterbalanced the partial loss of the Cabbage crop. The vegetables cultivated consist besides, those mentioned, of Potatos, Turnips, Tomatos, Cucumbers, Water Melons, &c., the total value of which amounted in 1884 to over 178,532 dols.

—— Gardening Appointments.—Mr. A. Stevens, of Moor Park Gardens, Farnham, Surrey, has been appointed Gardener to G. Tolhurst, Esq., Northfleet House, Northfleet, Gravesend, Kent.—Mr. A. Greaves, late Foreman at Brantingham Thorpe, as Gardener to A. K. Rollitt, Esq., Thwaite House, Cottingham, Hull.

## Home Correspondence.

**Tribulus platypteris as a Poison.**—As it seems not to be known that any species of Tribulus have poisonous effects, it may be worthy of notice that Mr. Henry Cooke informs me of poison cases on his sheep-run at the Ashburton River, ascribed to this plant. This gentleman writes as follows:—"I have sheep constantly dying in the neighbourhood where it is growing. It will kill pigeons, as the natives in their wild state steep the bark in water and lay it close to springs; the birds then come and drink out of the yandus that hold the water, and die. It also stupefies or kills fish, so that the natives can get them." As other Zygophyleæ, at least some Zygophyllums, have proved poisonous to pastoral animals both in South Africa and various places in Australia, we can hardly doubt that species of Tribulus are deleterious also. To overcome this difficulty in North-Western Australia, I have sent seeds of the Teosinte, which giant grass I first introduced into the Australian colonies and Polynesia, and which on the Ashburton River would thrive to perfection, so as to soon overpower the Tribulus. *Ferd. von Mueller.*

**Pear Congress.**—I hope something will at least be attempted at the forthcoming Pear Congress to classify the good varieties by their flavour. It is a point which I have again and again urged on the attention of pomological authorities, but hitherto they have not responded to any useful extent. Every one who eats Pears knows that as regards flavour they include several very distinct types—not the variations arising from good or bad soil, good or bad seasons, or good or bad situations, but intrinsic differences of a most marked character, of which the musky lusciousness of Williams' Bon Chrétien and the honied sweetness of Seckel are familiar instances, and others with the Almond, the Pear, and the Noyeau flavour are not far to seek. Those who are about to plant or to regraft their trees would find such a classification extremely useful, and I cannot understand—obtuse though I may be—that there is any great difficulty in making it. *T. Moore.*

**Gloxinias at Rangemore.**—One of the most pleasing sights may be seen at the present time at Rangemore, Burton-on-Trent, the seat of Sir Arthur Bass. Mr. Bennett, the energetic head gardener, has a splendid collection of well grown Gloxinias. Instead of, as is usually the case, cramming together these useful and showy plants, he has arranged in a span-roofed house a quantity of Adiantum cuneatum, and dotted here and there Gloxinias in bloom amongst them. On the roof the house is a white Lapageria in full bloom, covering one half, and a red Lapageria covering the other half: the effect produced is most chaste and novel. The Grapes this season at Rangemore are a sight: Mr. Bennett has especially in a house 60 feet long and 15 feet wide, a splendid lot of Muscat of Alexandria, the bunches and berries unusually large and good. It is not often, if ever, that such a house of Muscat has been seen in any part of the country. *H. E. C., Highgate.*

**Dahlias.**—Dahlia shows are now taking place in many parts of the country: that is to say, flower shows are taking place in which are to be found classes for Dahlias. The annual exhibition of this fine flower takes place on September 4 and 5: but having regard to the character of the season, it can scarcely be expected that so fine a display as that which was seen last year will be forthcoming at the Crystal Palace on the above date. The season has sorely tried the plants owing to the prolonged drought; but little rain comparatively has fallen during the past six or seven weeks, while the Dahlia being a vigorous growing succulent plant, requires plenty of moisture at the roots, as well as overhead. When looking through Messrs. Keynes, Williams & Co.'s at Salisbury, I noticed that, for want of rain, the Dahlia ground had not been mulched as usual; heaps of manure were lying by the side of the quarters, but the rain which was needed to thoroughly saturate the soil had not fallen, and the plants were kept growing only by means of copious waterings overhead and at the roots daily. Other growers are in a like predicament, and the earwig, and especially the black-fly have infested and disfigured the blooms. On the whole, the flowers in not a few instances, and especially

in the case of those amateurs who cannot give much close attention to their plants, must be small. Those who grow Dahlia blooms for exhibition need to watch closely the opening buds, and the instant they detect any defect in the opening flowers, they should be removed. Every flower that opens weakens the plants, except in the case of some few varieties that may be allowed to carry a good quantity of blooms to ensure some free from coarseness. But the grower for exhibition will not allow a single flower to remain on the plants if they are not likely to be of service to him. There is urgent necessity for as constantly hunting after vermin. I have already stated they are unusually plentiful this season. A single earwig can soon destroy a promising bloom by nibbling some of the petals. The black-fly is infesting the flowers to a remarkable degree; it is an unwelcome visitant, difficult to get rid of. In the case of all delicately tipped flowers, close shading is necessary. A few days since I saw a bloom of Lady Golightly that was exquisitely pure and delicately tipped, but it must have been closely shaded. Lastly, copious supplies of water are necessary, so long as the weather keeps dry. *X.*

**Tomato Culture.**—Tomatos are cultivated by Mr. Vallance in the Tresco Abbey Gardens in a manner which will be new to a number of your readers. The first consignments of new Potatos to English markets are grown in frames. By the middle of April the long lines of frames stand empty. The same soil used for the Potatos is levelled and planted with Tomatos, the plants having been reared from seed sown in pans in the preceding January and potted off singly when old enough. No fresh manure is added, the intermixture previous to the planting of the Potatos being deemed sufficient. The fertilising matter then introduced into the soil is taken from a pile composed of seaweed and farmyard manure. To this is added a quantity of artificial manure in the proportion of 14 cwt. to the acre. This latter admixture consists of 8 cwt. of guano, 4 of bonedust, and 2 of superphosphate of lime. Two plants are allowed to each light. After planting, the treatment, excepting bottom-heat, almost identically corresponds to that of Cucumbers. To keep the fruit clean a matting of reeds is spread on the surface of the ground. The all-important items of ventilation and watering are strictly attended to. Air is given directly the men come to work, *i. e.*, between six and half-past; and if the day turns out hot, the lights are lifted off. At four a copious watering is given, and the lights replaced, so as to shut in the sun-heat. By this method of treatment ripe fruit was cut before the end of June. At the present moment the plants are as healthy as could be wished, and the show of fruit enormous. It is needless to say what a good and economical plan this is. Frames that have been used for forcing Asparagus and Seakale can be turned with little extra work to the same use. For small villa gardens what could be better? If carefully managed, a three-light frame would supply quite a sufficient quantity. Growing Tomatos in frames is doubtless often adopted, but nevertheless is not so frequent as the unvarying success under proper treatment demands. In the matter of manuring caution is necessary: a superfluity only induces foliage, not fruit. *C. A. M. C.*

**The German Grass Crops.**—Information received from the grass-growing districts of Darmstadt show that in the early part of the season there was a time of unfavourable weather, which created fears that the crops would be unsatisfactory, but a change for the better worked a corresponding improvement in the outlook, and at present prices rule lower than at this period last season. But a recent personal inspection leads to the opinion that the expected crop will be smaller than was at first supposed. The crops of Cocksfoot in the United States of America, as well as in Germany, have turned out to be very small, and as the consumption of this leading sort is now very great on account of the Ray-grass (Lolium perenne) not being so much used in grass mixture as formerly, for the past few seasons large supplies of Cocksfoot came into Germany from New Zealand; but recent crops having been light and of poor quality, the importations now made are scarcely worth consideration. Next to Cocksfoot, the grass most extensively used is Meadow Fescue, of which very heavy quantities are now consumed. Reports from the United States made mention of very heavy crops, but when threshed the yield was much less seed than that expected. The crops in Germany are large, but scarcely large enough to supply all demands should America fail to export larger quantities than last season. Hard and Sheep's Fescues, Meadow Foxtail and Poas have been harvested in good condition. The smallest crop is Poa nemoralis, Poa trivialis is rather more plentiful. It is reported that large quantities of these are forthcoming from the United States, but they are not true, only Poa pratensis being grown there. Small-leaved Sheep's Fescue is forthcoming only in very small quantities, and high prices are demanded for true seed. The crops of Alsike are smaller than last season, but quality is decidedly satisfactory. The same is reported of white Clover; on the other hand red Clover is a fair crop, but the samples are poor in colour. Sainfoin has been harvested in such quantities and such good quality that a good deal will this season be available for exportation. *D.*

**Erucastrum inodorum.** — This new British plant has been found at Saffron Walden, Essex, in abundance this season. *J. Clarke, F.L.S.* [Can our correspondent oblige us with a specimen? Ed.]

**Narcissus poeticus var. stellaris.**—Some time since we were favoured by Mr. Morse, of Epsom, with a bloom of this variety, originally figured in Sweet's *British Flower Garden*, ser. ii., t. 132, but nearly, if not quite lost sight of since that time. The



Fig. 61.—Narcissus stellaris.

illustration (fig. 61) gives a good idea of the flower, which has narrow segments, a pale cup, and is further remarkable for the late period at which it blooms. *M.*

**Rhus Cotinus.**—A large clump of this beautiful shrub is just now an object of great beauty in the pleasure grounds of the Bishop's Palace, the Close, Salisbury. Planted some years ago, it has grown into large dimensions, and at the present time it is a huge mass of large panicles of a feathery inflorescence of a peculiar reddish tint and very striking in appearance. *R.*

**Extraordinary Crop of Filberts.**—I send you a bunch of Nuts taken from one of the trees in the grounds of the Rev. Mr. Fletcher, of Bicker, Lincolnshire. He says that it is not a specially selected one, but quite an average, and the branches laden with fruit. The bunch referred to is certainly an extraordinary one, containing 18 Nuts. The reverend gentleman is to be congratulated upon his sucessful crop. *W. H. C.* [The specimen suggests that the male catkin has assumed female dress, so numerous are the Nuts. Ed.]

**Mildew on Roses.**—A friend of mine had lately to submit to a surgical operation and used as an antiseptic the last one which has come into use, viz, a solution of one-half in a thousand ($\frac{1}{2000}$) of deutochloride of mercury (*sublimé corrosif*). When he could begin to move, he went to his garden to see the Roses he is passionately fond of, and found them covered with mildew. On the principle of the gander and the goose, he sprinkled them with a very thin spray of his disinfectant and cured them perfectly. I have not got the blight and cannot try it actually. You may object to the use of such a potent poison in careless hands. The best way to prepare it, as it does not dissolve well in water, is to have it in a strong alcoholic graduated tincture, and to dilute it with water when wanted for use. *Jean van Volxem.*

# Reports of Societies.

## ROYAL HORTICULTURAL: Aug. 25.

### Floral Committee.

Present: Mr. J. Fraser, in the chair; Messrs. M. T. Masters, M.D, G. F. Wilson, Shirley Hibberd, T. Baines, H. Cannell, E. Hill, H. Turner, F. R. Kinghorn, W. Wilks, W. Bealby, J. Child, J. James, H. Bennett, G Duffield, C. Noble, J. Dominy, H. M. Pollett, H. Williams, J. Hudson, J. O'Brien, A. Perry.

The subjects brought before the committee were somewhat numerous, the most noteworthy being two splendid hybrid Orchids, Lælia Sedeni from Baron Schroeder's collection, and Lælia elegans Littleana from that of Mr. Little.

Angræcum Leonis was shown by no less than five different growers.

From Sir Trevor Lawrence, Bart., came an interesting bulbous plant of hybrid origin named Gastronema hybrida, raised from G. sanguinea × Vallotta purpurea, and a fine form of Blandfordia flammea.

Mr. W. Bull showed a good variety of Odontoglossum Insleayi named splendens. It is an improvement upon Insleayi in all its parts, broader in sepals and petals, and more distinctly marked on the lip. Three Caladiums were likewise sent from the same establishment, in each case the leaves were almost void of chlorophyll; C. Comtesse de Maille with foliage suffused with rosy-red midribs and veins on a light ground, and C. Ibis Rose with leaves of a salmon colour, slightly edged with green were both distinct kinds. Mr. Bull also sent Aerides flavidum like A. suavissimum, but not so freely spotted; and also a good form of Cattleya crispa, likewise Dion edule lanata with a well developed tuft of leaves (certificated in 1881).

Cattleya majenta from Mons. Linden, Ghent, was considered to be a good variety of C. splendidissima.

A cut spike of Stanhopea inodora was shown by Mr. Little.

From G. F. Wilson, Esq., came a finely flowered spike of Lilium auratum, with twenty blossoms in good condition; also L. tigrinum splendens of very fine colour and most distinctly spotted—a good spike; Lilium superbum, and a sport from it called L. superbum rubro-striatum: the latter variety was requested to be seen again. Mr. Wilson also showed, on the part of Herr Leichtlin, a pretty form of Androsace lanuginosa var., with pale coloured flowers and a purple eye, and some tall spikes of Gentiana asclepiadea, and its white variety.

Messrs. Veitch & Sons exhibited three hybrid greenhouse Rhododendrons of considerable promise, R. Pearl being almost a pure white and of good habit; R. The Dyak, with a fine truss and well formed flowers of great substance, orange shaded with scarlet; R. Gloria Mundi, deeper in colour than R. Princess Royal, and a vigorous grower. The same firm again exhibited some distinct forms of the hardy race of Gladiolus, which will prove valuable additions to our herbaceous borders; G. Masque de Fer is a fine dark kind, and G. Alsace, a pale yellow, with dark centre, being also very distinct. Some novel varieties of Salpiglossis were in the same collection, and a robust growing South African Asparagus, called A. verticillata.

From H. J. Buchan, Esq., Southampton, came Agapanisia cœrulea, with one flower of a pale slaty-blue colour—a distinct species.

A new Eucharis with one spike and two expanded flowers was shown (the exhibitor's name did not transpire), supposed to be identical with E. Mastersiana.

Some few new varieties of Dahlia were exhibited, one from Messrs. Cannell, of the decorative type, called Germania nova, bids fair to become a promising kind; in form more compact than the Cactus Dahlias, in colour deep rosy-pink. Messrs. Cannell also showed a fine boxful of Mrs. C. Hawkins, a pleasing flower of the same type, pale primrose in the centre, shading off to a buff.

From Messrs. Kelway came some fine new kinds of Gladioli, with well formed spikes and robust habit, the best being Prince Henry, light centre, shading off to purplish-crimson; Sir H. D. Wolff, very intense scarlet—a fine variety; Princess Irene, rosy-carmine, and light centre; Viscount Cranbrook, deep crimson; Prince Albert Victor, bright scarlet; and Princess Olga, a flaked rose on light ground.

#### First-class Certificates.

To Baron Schroeder, for Lælia Sedeni.

To Mr. Little, for Lælia elegans Littleana.

To Sir Trevor Lawrence, Bart., for Blandfordia flammea, Gastronema sanguinea ×, and Angræcum Leonis.

To. W. Vanner, Esq., for Angræcum Leonis.

To C. Dorman, Esq., for Angræcum Leonis.

To R. H. Measures, Esq., for Angræcum Leonis.

To. Mr. W. Bull, for Angræcum Leonis.

To Mr. W. Bull, for Odontoglossum Insleayi splendens.

To Mr. W. Bull, for Caladium Comtesse de Maillé.

To Messrs. Veitch & Sons, for Rhododendron Pearl.

To Messrs. Veitch & Sons, for Gladiolus Masque de Fer.

To Messrs. Cannell, for decorative Dahlia Germania nova.

To Messrs. Kelway & Son, for Gladioli Prince Henry, Sir H. D. Wolff, Princess Olga, Viscount Cranbrook, Prince Albert Victor, and Princess Irene.

To Max Leichtlin, Esq., for Androsace lanuginosa var.

To Messrs. Rawlings, for show Dahlia Mr. Geo. Walker.

BOTANICAL CERTIFICATE.

To H. J. Buchan, Esq., for Aganisia cœrulea.

Medals were awarded as follows:—Silver-gilt Banksian, to Messrs. Kelway & Sons for a collection of 144 spikes of Gladioli, consisting of the choicest and best varieties in commerce, being a finely grown group that formed a great attraction to the show. The same medal was also awarded to Mr. Ware, for Dahlias (shows, fancies, pompons, decorative, and single kinds), forming a most varied assortment of clean, well-developed blooms; Liliums, consisting of L. auratum in variety, L. tigrinum, L. longiflorum, and L. superbum; herbaceous and bulbous plants, prominent amongst which were Hyacinthus candicans, Gaillardia grandiflora in variety, Phlox (herbaceous), Statices (hardy), very attractive, Harpalium rigidum, Tritoma uvaria, Pentstemons and Helianthus in variety; six varieties of dwarf Veronicas from New Zealand, suitable for rockwork, and Zauschneria californica, orange-scarlet, bearing a close resemblance at a distance to a highly-coloured form of Libonia.

Bronze Banksian to the New Plant and Bull Company, Colchester, for a varied assortment of Liliums (including some well marked forms of L. auratum), and Gladioli (hybrids of G. Lemoinei).

Dahlias (show and fancy) were shown in good condition by Messrs. Turner of Slough, and Keynes, Williams & Co., of Salisbury; several promising seedlings were included in the collection from the latter firm, of which we shall hear more without doubt a little later in the season.

## Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. Harrison Weir, J. Willard, J. Ellam, J. Roberts, Dr. Hogg, W. Paul, R. D. Blackmore, J. Woodbridge, G. T. Miles, and F. Rutland.

Mr. Rivers, who showed a fine collection of twenty dishes of fruit, was accorded a letter of thanks. In the collection, Pears Clapp's Favourite was very good in size and colour. The Peaches included Baltet, which had been forced, and Rivers' Crimson Galande, grown in a cold house. Plums formed by far the largest division, and were very fine; among them were Oullin's Golden Gage, Prince of Louvain, and the small Cherry Plum. Rivers' Dryden Nectarine was also shown.

From the Society's gardens at Chiswick also came a collection of Plums, consisting of twenty-six varieties, among which Damas' Musqué, a small yellow Plum; Large Black Imperial, Prince Engelbert, Belgian Purple, and others were noticeable for their good appearance.

The Society also showed three dishes of Apples, in which Lord Suffield and Duchess of Oldenburg were well grown specimens. Both these exhibits obtained a Cultural Commendation.

Cultural Commendations were also given to G. F. Wilson, Esq., for Plum Transparent Gage, which had been grown in a house. The fruits were over more than half their surface red, only the lower part retaining its usual appearance. The following received the same awards:—Messrs. Kelway & Sons, for three varieties of Cucumbers; Messrs. W. Paul & Son, Waltham Cross, for three varieties of Pears; and Mr. Ward, Longford Castle, for three bunches of Buckland Sweetwater Grape, which were very fine, weighing over 4 lb. each. A Bronze Banksian Medal was awarded to this exhibit.

A Silver Banksian Medal was awarded to Mr. G. Bunyard, Maidstone, for a collection of sixty-five dishes of fruit, chiefly Apples, all very well grown. Cellini Pippin was very large, Cox's Orange, Oslin, Stirling Castle, Lady Henniker, Ecklinville, Lord Derby, Stone's Apple, and others were fine fruits. Some had been grown under cover. The Pears in this collection included Marie Louise d'Uccle, Triomphe de Vienne, very large, and Bijou, which was thoroughly ripe. Pond's Seedling Plum was well shown, and also four varieties of nuts.

Mr. G. W. Cummings, the Grange, Wallington, Surrey, received a letter of thanks for an exhibit of Plums, Apples, and Pears.

"Mrs. Gladstone" Currant, a variety with large berries and an abundant cropper, was shown by Mr. P. Robertson, Hartrigg Gardens, Jedburgh.

## Cottagers' and Artisans' Exhibition of Vegetables and Fruits.

ANOTHER opportunity offered to the cottagers and artisans of the United Kingdom to exhibit in the metropolis the best of their fruit and vegetable products has now been afforded, and in a highly satisfactory manner to all those concerned in the arrangements.

In some classes the exhibits, in point of number, far exceeded those of last year, whilst in others, particularly in the Potato classes, a slight falling off was visible, doubtless owing to the dryness of the season—this crop at certain places being materially affected by a diminished yield. It is scarcely saying too much to affirm that finer samples of some kinds of vegetables could hardly be found, even in the collections from the most noted growers; and it is to be hoped, for the credit sake of those most interested, that the produce is the result of their own labour and attention in the way of cultivation. In looking over the awards the historic county of Buckingham is seen to take the foremost position this year, no fewer than twenty prizes out of a total of ninety-four which were offered falling to the lot of residents in this county, and among these was from the premier prize in the show, for six dishes of distinct kinds of vegetables, which, in a competition of thirty-three lots, was awarded to Mr. A. Beckett, of Tyler's Green, near High Wycombe, Bucks. Small collections of fruits or vegetables in general were well and keenly contested, and on this occasion the task of the judges was somewhat an onerous duty, the judges having to resort even to half-points to determine the final issue.

Class 1. Collection of six distinct kinds of vegetables. In this, the premier class in the show, a marvellous display was made, occupying more than a fourth of the centre table, including over thirty lots, many of which comprised very fine individual dishes of different subjects and favourably comparable with the same subjects that are to be seen in the collections of most eminent gardeners. After much discrimination the 1st prize was given to Mr. A Beckett's collection' from Penn, near High Wycombe, Bucks. His dishes consisted of fine Giant Rocca Onions, excellent Long Red Carrots, good Cauliflower, Veitch's Autumn Giant, Scarlet Runner Beans, Excelsior Tomatos, and a superb dish of Woodstock Kidney Potatos. Mr. G. North, Mitre Street, Buckingham, was a good 2d with fine Carrots, &c. Mr. W. Cooper, Rose Cottage, Shrivenham, Berks, was 3d; this lot included the best dish of Giant Rocca Onions in the show. Mr. J. S. Pallett, 50, Russell Street, Loughborough, came in 4th, having excellent Cauliflowers and good Intermediate Carrots; the 5th and 6th prizes going to Mr. B. Gillam and Mr. J. Kite, both of Sherborne, Dorset, in the order named. In addition to these prizes four other exhibitors had Commendatory Cards for their collections.

Class 2. Potatos, three varieties, round, nine tubers of each.—Twenty-seven lots were staged in this class, most of them of good quality. Mr. G. North, Buckingham, took the first prize with nice even dishes of Vicar of Laleham, Sutton's Giant King, and Adirondack; Mr. G. Beckett, Penn, coming 2d, with Reading Russet, Radstock Beauty, and Vicar of Laleham, somewhat smaller; 3d, Mr. G. Castle, Nettlestead, Kent; 4th, Mr. R. Hall, Dartford; and 5th, H. Gibbs, Sevenoaks.

Class 3. Potatos, three varieties, kidney, nine tubers of each.—Out of twenty-one exhibitors Mr. H. Gibbs, Sevenoaks, won the 1st prize with good dishes of Beauty of Hebron, Essex Challenge, and Trophy; the 2d award fell to Mr. J. Divers, Petworth, with three very even white kinds; 3d, Mr. S. North, Buckingham; 4th, J. Willard, Eynsford; and Mr. J. Conway's exhibit was Commended.

Class 4. One variety, of nine tubers, round.—Mr. J. Diver, Petworth, took 1st with a fine dish of red, unnamed; Mr. J. Munn, 2d, with Reading Russet; 3d, Mr. S. Cronk, with a good dish of Schoolmaster; 4th, Mr. J. Fasham; and to Mr. Wm. Dredge was awarded a Commendation for his Vicar of Laleham.

Class 5. One variety kidney, nine tubers.—1st, Mr. Diver, Petworth; 2d, Mr. Ixall, Dartford; 3d, Mr. North, Buckingham; 4th, Mr. Davey, Walton Place, Aylesbury.

In looking over the varieties in the foregoing classes, the suitableness and popularity of some kinds were manifest, as, for instance, in Class 2, which contained eighty-one dishes of Potatos, no fewer than twenty of these were Vicar of Laleham and thirteen of Reading Russet. Again, in Class 4, for single dishes, thirty-seven lots, there were eleven dishes of each sort, Vicar of Laleham and Reading Russet.

Class 6. Peas, two varieties, fifty pods each.—A weak class. 1st, Mr. Burrows, Lutterworth; 2d, Mr. Jacob, Petworth; 3d, Mr. Cooper, Shrivenham; 4th, Mr. Diver, Petworth.

Class 7. Peas, one variety, fifty pods.—Mr. Burrows was 1st; Mr. Monroe, Dingwall, 2d; Mr. Harris, Bradenham, 3d; Mr. Kite, Sherborne, 4th.

Class 8. Onions, twelve.—This class contained some remarkable specimens: Mr. T. J. Pallett, Loughborough, took 1st, with Giant Rocca, fine; Mr. T. Nunn, Malden, 2d, with Giant Rocca, fine; Mr. W. Cooper, Shrivenham, 3d, with Improved Reading; 4th, Mr. G. Hacker, Coleshill, with Improved Reading.

Class 9. Cabbages, three.—There were mostly old and very coarse, excepting the prize lots: Mr. H. Gibbs, Sevenoaks, 1st, with three very fine heads; 2d, Mr. Richardson, Enfield; 3d, Mr. Peacock, Hemel Hempstead; 4th, Mr. North, Buckingham.

Class 10. Lettuces, three heads.—1st, Mr. Warren, Shrivenham; 2d, Mr. D. Nunn; 3d, Mr. J. Gardner, Yalding; 4th, Mr. Burrows, Lutterworth.

Class 11. Scarlet Runners, thirty pods.—1st, Mr. J. F. Harvey, Hertford; 2d, Mr. W. Cooper, Shrivenham; 3d, Mr. Neale, Great Brickhill, Bucks; 4th, Mr. Kite, Sherborne.

Class 12. Kidney Beans, thirty pods.—All the prizes in this class were secured by that fine variety, Canadian Wonder. 1st, Mr. G. Kirkland, Bletchington; 2d, Mr. H. Matthews, Brockham; 3d, Mr. Burrows, Lutterworth; 4th, Mr. Kite, Sherborne.

Class 13. Broad or Longpod Beans, thirty pods.—Weakest class in the show. 1st, Mr. D. Munroe, Dingwall; 2d, Mr. S. Saunders, Sherborne; 3d, Mr. G. Hacker, Coleshill; 4th, Mr. W. Dredge, Shenley.

Class 14. Turnips, six.—1st, Mr. J. Diver, Petworth; 2d, Mr. Gibbs, Sevenoaks; 3d, Mr. J. Kite, Sherborne; 4th, Mr. T. J. Pallett, Loughborough.

Class 15. Carrots, six.—Prize dishes in this class were as near perfection as possible. Mr. G. North, Buckingham, took 1st prize with fine specimens of a beautiful colour; Mr. Kite, Sherborne, coming in a close 2d; and Mr. Kirtland, Bletchington, and Mr. B. Gillam, Sherborne, taking 3d and 4th prizes respectively.

Class 16. Beet, three.—1st, Mr. S. Saunders, Sherborne; 2d, Mr. Warren, Shrivenham; 3rd, Mr. Gillam, Sherborne; 4th, Mr. J. Diver, Petworth.

Class 17. Cauliflowers, three.—Mr. J. Diver, Petworth, 1st, with compact heads; 2d, Mr. T. J. Pallett, Loughborough, with three very large heads; 3d, Mr. Beckett, Penn; 4th, Mr. Munroe, Dingwall, with small compact heads.

Class 18. Cucumber, one.—Mr. Beckett took 1st honours, with a good example of Tender and True; Mr. Dredge, of Shenley, was 2d, with Telegraph; Mr. G. Fasham, 3d, for the same kind; Mr. S. Kirtland, Sherborne, 4th, for a large rather coarse prickly variety.

Class 19. Vegetable Marrows, two.—A very large class, requiring much discretion; ultimately the 1st prize went to Mr. H. Gibbs, Sevenoaks; 2d, Mr. J. Kite, Sherborne; 3d, Mr. Neal, Ealing; 4th, Mr. Beckett, Penn.

Class 20. Tomatos, six.—Mr. G. Kirtland took 1st prize with an even dish; Mr. Cave, Ealing, 2d; Mr. White, High Wycombe, 3d; and the 4th prize went to Mr. Beckett, of Penn, for a dish of Chiswick Red.

Class 21. Herbs, six bunches, distinct kinds.—Mr. Beckett, Penn, 1st, with Parsley, Sage, Marjoram, Mint, Thyme, and Savory; 2d, Mr. Nayhorn, Allington; 3d, Mr. Peasey, Ealing; 4th, Mr. Peacock, Hemel Hempstead.

Class 22. Salad, four kinds.—A fair class of ordinary merit. 1st, Mr. T. Wallis, Maidenhead; 2d, Mr. S. Rutland; 3d, Mr. T. Diver; 4th, Mr. F. Beck, Hemel Hempstead.

FRUIT CLASSES.

In class 23, for three dishes of dessert Apples, Mr. W. Jacob, Petworth, took 1st, with Duchess of Oldenburg, Lady Sudley, and Devonshire Quarrenden; the first two were very good samples of fruit. 2d, Mr. T. J. Pollett, Loughborough, who showed Red Astrachan and Irish Peach in good condition. Mr. J. Willard, Eynsford, Kent, was next; and Mr. J. Conway, of Boughton Monchelsea, took 4th.

In class 24, for three dishes of kitchen Apples, Mr. Conway took 1st, with Stone's Apple as his best. 2d, Mr. J. Willard, with good specimens of Keswick Codlin and Warner's King; and Mr. T. J. Pollett and Mr. W. Jacob took 3d and 4th with fair fruit.

Class 25 was for one dish of any sort of Apple, and Mr. G. Cronk, Maidstone, took the lead with Lord Suffield. Mr. Pollett and Mr. Hook, Chertsey, both took 2d, with the same variety. Mr. Bowers, Eynsford, followed; and Mr. J. Conway made the 4th, all running closely together.

For class 26, one dish of Gooseberries, Mr. J. Gardner, Yalding, came out 1st, with a small red berry; 2d was taken by Mr. J. Kite, Sherborne, with a yellow fruit; and 3d and 4th were taken by Mr. J. Willard, and Mr. T. Munn, Heybridge, near Maldon, both with red varieties.

For one dish of Currants, class 27, Mr. W. Jacob was best, with a dish of fine large red Currants; Mr. W. Peasey, Ealing, followed with some good specimens of a white variety; 3d, came Mr. G. W. Kentish, Bedmont, Herts, with black; and Mr. Bowers took the last place with a dish of white.

In class 28, for thirty Morello Cherries, Mr. W. Waghorn, Allington, Kent, was 1st, with some magnificent fruit.

In the class for nine Plums, Mr. W. Newman, of Yalding, Kent, was 1st, and Mr. J. F. Dobson, West Wycombe, Bucks, followed. Mr. J. Conway's exhibit was Commended. The fruit in this competition was all good,

MISCELLANEOUS.

In this class there was a large collection of fruits and vegetables. The 1st prize was taken by Mr. C. Beckett with a dish of fine Apricots and some very fine heads of Celery. The second place was won by Mr. W. B. Gillam, Newland, Dorset, who showed a dish of enormous Parsnips. The 3d was given to Mr. S. Saunders, Sherbourne, Dorset, for Shallots and Celery; and the 4th place was occupied by Mr. J. Kite with three heads of Celery. Mr. G. H. Hazzard's exhibit of Celery and Mr. T. J. Pollett's of Apricots were both Commended.

## THE NATIONAL CARNATION AND PICOTEE (Northern Section).

This Society held its annual show in the new Town Hall, Manchester, on August 11. The following is the list of awards:—

For twelve Carnations, all dissimilar.—1st, Mr. R. Lord, with Curzon, John Harland, Ranger Johnson, Hextall, Sybil, E. S. Dodwell, James Douglas, Clipper, Mrs. Dodwell, E. Adams, Unexpected, Mercury; 2d, Mr. B. Simonite, with Sybil, Sarah Payne, Florence Nightingale, A. Medhurst, H. Cannell, Master Fred, J. Douglas, seedling (Simonite), seedling (Horner's No. 6, rose flake), Jos. Crossland, Sportsman, and a seedling; 3d, Mr. G. Geggie, whose best flowers were Master Fred, W. Skirving, Sybil, and J. Douglas; 4th, Mr. F. Law, whose best flowers were Squire Meynell, J. D. Hextall, Sybil, and J. Douglas.

For twelve Picotees, all dissimilar.—1st, Mr. R. Lord, with Mrs. Lord, John Smith, Ann Lord, Thomas

William, Clara Penson, Master Norman, Liddington Favourite, Miss Wood, Mrs. Niven, Zerlina, R. Scott, and Elise; 2d, Mr. B. Simonite, with Constance Heron, two seedlings, Mrs. Gorton, Brunette, John Smith, Princess of Wales, Dr. Horner, Mrs. Nevin, Muriel, J. B. Bryant, and Mary; 3d, Mr. G. Geggie, whose best flower was Clara Penson; 4th, Mr. F. Law, whose best flowers were Clara Penson and Mrs. Gorton.

Twelve Carnations, nine to be dissimilar.—1st, R. Gorton, Esq., with E. S. Dodwell, Skirving, Merryweather, Foster, R. Johnson, Master Fred, Harrison Weir, E. Adams, and F. Nightingale; 2d, Mr. J. Bleachley, with Master Fred, J. Douglas, Sybil, Sportsman, Falconbridge, Curzon, Clipper, Keats, Lord Napier, Squire Llewellyn, and M. Nottingham.

For twelve Picotees, nine to be dissimilar,—1st, Mr. J. Bleachley, with Brunette, Zerlina, Thos. William, Edith D'Ombrain, Alliance, Her Majesty, Liddington Favourite, Miss Wood, and another; 2d, Mr. J. Whitham, with Zerlina, J. B. Bryant, Clara Penson, Miss Horner, Thos. William, Miss Wood, Brunette, John Smith, Ann Lord, and Edith D'Ombrain; 2d, R. Gorton, Esq.; 4th, Mr. W. Slack.

For six Carnations, all dissimilar,—1st, Mr. J. Whitham, with E. S. Dodwell, Lord Raglan, Tim Bobbin, H. Cannell, J. Douglas, Admiral Curzon; 2d, Mr. G. Thornley, with Curzon, Raglan, Squire Trow, J. Douglas, Clipper, and Keats.

Six Picotees, all dissimilar.—1st, Mr. E. Shaw, with Daisy, Clara Penson, Alice, Her Majesty, Miss Horner, and Miss Wood; 2d, Mr. G. Thornley, with Mrs. Rudd, Nymph, Miss Horner, Mrs. Prescott, Burdett Coutts, and Norfolk Beauty.

Extra class for twelve fancies.—1st, Mr. R. Lord; 2d, Mr. F. Law.

Premier Carnation.—Mr. R. Lord, with Curzon.

Premier Picotee.—Mr. J. Bleachley, with Zerlina.

### Single Specimens.

Scarlet bizarre Carnation.—1st, 2d, 3d, 4th, and 5th, Mr. R. Lord, with Curzon.

Crimson bizarre Carnation.—1st, R. Gorton, Esq., with Harrison Weir; 2d, G. Geggie, with Master Fred; 3d, J. Bleachley, with E. S. Dodwell; 4th, G. Geggie, with Master Fred; 5th, R. Lord, with Master Fred.

Purple bizarre Carnation.—1st, J. Whitham, with E. S. Dodwell; 2d, S. Barlow, Esq., with Sir G. Wolseley; 3d, J. Whitham, with Harrison Weir; 4th and 5th, R. Gorton, Esq., with H. Weir and W. Skirving.

Scarlet flake Carnation.—1st, G. Geggie, with H. Cannell; 2d, B. Simonite, with Tom Powell; 3d, J. Bleachley, with Sportsman; 4th, J. Chadwick, with Ivanhoe; 5th, B. Simonite, with seedling.

Rose flake Carnation.—1st, R. Low, with J. Keats; 2d, W. Taylor, with Crista-galli; 3d, G. Geggie, with Christa-galli; 4th and 5th, W. Taylor, with Christa-galli.

Purple flake Carnation.—1st, B. Simonite, with J. Douglas; 2d, G. Geggie, with M. Nottingham; 3d, F. Law, with J. Douglas; 4th, J. Bleachley, with M. Nottingham; 5th, G. Thornley, with Squire Trow.

Heavy red Picotee.—1st, G. Geggie, with Master Norman; 2d, R. Gorton, Esq., with John Smith; 3d, W. Taylor, with John Smith; 4th, W. Taylor, with Brunette; 5th, G. Geggie, with Haversley.

Light red Picotee.—1st, 2d, 3d, 4th, 5th, R. Lord with Thomas William.

Heavy purple Picotee.—1st, R. Lord, with Mrs. Nevin; 2d, J. Whitham, with Zerlina; 3d, J. Bleachley, with Mrs. Nevin; 4th, R. Gorton, Esq., with Mrs. Nevin; 5th, J. Bleachley, with Zerlina.

Light purple Picotee.—1st, J. Whitham, with Ann Lord; 2d, G. Geggie, with Clara Penson; 3d, R. Lord, with Alice; 4th, J. Bleachley, with Clara Penson; 5th, E. Shaw, with Clara Penson.

Heavy rose Picotee.—1st, 2d, 3d, R. Lord, with Mrs. Lord; 4th, G. Geggie; 5th, F. Law, with Miss Horner.

Light rose Picotee.—1st, 3d, 4th, 5th, R. Lord, with Miss Wood, Elegant, and Miss Horner; 2d, J. Whitham, with Miss Wood.

## TROWBRIDGE HORTICULTURAL: August 19.

This is one of a few highly popular and extensive, as well as high-class flower shows held in the West of England; in the case of Trowbridge it is the thirty-sixth consecutive annual exhibition, continued through good and bad seasons, and it is the twenty-second year the office of Hon. Secretary has been held by Mr. James Huntley, to whose efforts a great deal of the success of the Society is due. The exhibition took place as usual in the show field close to the railway station, and the day being fine an enormous throng of people attended it from Bath, Bristol, Bradford-on-Avon, and the district round. The financial results were most satisfactory in every respect. The town was profusely decorated with bunting, and had a gay and animated appearance.

### Stove and Greenhouse Plants.

In the class for nine plants, a local grower, Mr. Matthews, gr. to W. R. Brown, Esq., J.P., Trowbridge, was in good form, showing very good specimens of Allamanda Hendersoni, A. nobilis, Rondeletia speciosa major, Lasiandra macrantha floribunda, a very fine plant, superbly grown and flowered, supplying a colour much wanted among stove and greenhouse plants; Erica Marnockiana, E. Aitonia hybrida, E. MacNabiana rosea, Ixora aurantiaca, and Bougainvillea glabra; 2d, Mr. G. Tucker, gr. to Major W. P. Clark, Trowbridge, whose best specimens were Bougainvillea glabra, Eranthemum Andersoni, Dipladenia Brearleyana, Allamanda Hendersoni, Ixora Williamsi, and Plumbago rosea; 3d, Mr. W. C. Drummond, nurseryman, Bath.

Mr. Tucker had the best six plants, staging very good examples of Bougainvillea glabra, Clerodendron Balfourianum, Allamanda nobilis, Anthurium Scherzerianum, Dipladenia amabilis, and Ixora Fraseri; 2d, Mr. H. Pocock, gr. to J. P. Haden, Esq., Trowbridge, who had Dipladenia Brearleyana, D. amabilis, Allamanda Hendersoni, Lapageria alba, Ixora coccinea, and I. Williamsi; 3d, Mr. J. Matthews.

In a class for three plants Mr. Matthews was 1st, and Mr. Tucker 2d.

### Fuchsias.

As usual, these were numerous, and very fine; those who attend the show regularly state they were the finest plants ever seen. On this occasion Mr. J. Matthews was 1st in the class for six specimens with magnificent examples of Charming, Poet's Favourite, and the Hon. Mrs. Hay, dark; Rose of Castille, Arabella, and Marchioness of Bath, a white corollaed variety, light. 2d, Mr. H. Pocock, with very fine plants of Doel's Favourite, Charming, and Bountiful, dark; Arabella, Beauty of Hillvare, and Beauty of Wilts, light. 3d, Mr. J. Lye, gr. to the Hon. Mrs. Hay, Clyffe Hall.

In the class for four varieties, Mr. Matthews was also 1st with superb specimens of Doel's Favourite, the Hon. Mrs. Hay, a seedling, light, and Wiltshire Lass. Mr. George Tucker was 2d with Load-me-Well, Doel's Favourite, Charming, and Arabella; 3d, Mr. J. Lye.

### Miscellaneous Flowering Plants.

These included the fine Petunias and Verbenas for which Trowbridge is so famous; Pelargoniums, Balsams, Gloxinias, &c., all of which were well and numerously shown.

### Foliaged Plants.

The best collection of nine plants came from Mr. H. Clack, gr. to C. E. Colston, Esq., Roundway Park, Devizes, who had Seaforthia elegans, Latania borbonica, Chamærops humilis, Croton variegatus, C. picius, &c.; 2d, Mr. W. C. Drummond, nurseryman, Bath, whose best plants were a fine Cycas revoluta, Latania borbonica, Thrinax elegans, &c.

### Ferns.

These are always a very fine feature at Trowbridge, the leading class being for fifteen specimens, including mosses. The best—and a very fine lot it was—came from Mr. Tucker, whose plants showed the highest cultivation. The leading plants were Asplenium nidus avis, Gymnogramma sulphurea, G. chrysophylla, Adiantum farleyense, A. cuneatum, A. gracillimum, Gymnogramma peruviana argyrophylla and peruviana cristata, Nephrolepis tuberosa, Dicksonia antarctica, &c Equal 2d prizes were awarded to Messrs. Clack and J. Cope, gr. to A. P. Stancourt, Esq., Trowbridge, both of whom had remarkably good groups; Mr. H. Pocock was 3d.

### Table Decorations.

These were a very pretty feature indeed, and it is satisfactory to know that this department of the exhibition has materially improved during the past few years.

Button-holes and bouquets were also a very pleasing feature, and it is observed that the cottagers have abandoned the absurd devices in garden and wild flowers they used to set up a few years ago, and produce now something elegant, light, and pleasing.

### Cut Flowers.

Messrs. Keynes, Williams, & Co. had the best twenty-four Dahlias, staging a lot of very fine blooms; Mr. Thomas Hobbs, Lower Easton, Bristol, being 2d. Messrs. Keynes & Co. also had the best twelve fancy Dahlias, putting up a very even and well finished lot of flowers; Mr. George Humphries, Kingston Langley, Chippenham, being 2d.

In the class for seedling Dahlias of 1884, six blooms of each, First-class Certificates were awarded to Messrs. Keynes & Co., for Richard Dean, a very fine purple-shaded self-form of the best quality; and to Salamander, a fancy flower of the General Gordon type, but flaked with crimson instead of scarlet, very bright and pleasing. Eric Fisher was also shown, a fancy form, heavily striped and flaked with deep scarlet on a buff ground, very bright and pleasing.

In the class for seedling Dahlias of 1885, First-class Certificates were awarded to Messrs. Keynes & Co., for General Grant, the centre petals were crimson, the basal petals heavily tipped with purple, fine petal and centre, and very promising; and to William Slack, a singularly bright scarlet flower somewhat reflexed, but of full substance, and likely to be very useful; Geo. Sanger (fancy), J. W. Cross, and Thomas Hobbs—the two latter plum-shaded seedlings were very promising also.

Mr. A. A. Walters, of Bath, had the best stand of single Dahlias.

The best stand of twelve Roses (trebles) came from Messrs. Geo. Cooling & Son, of Bath, who had capital blooms of La France, E. Y. Teas, François Michelon, A. K. Williams, Merveille de Lyon, Louis van Houtte, Madame Victor Verdier, Comte d'Oxford, Alfred Colomb, Charles Lefebvre, &c.; 2d, Messrs. Keynes & Co. The best twenty-four varieties, single blooms, were from Messrs. Keynes & Co., who had a very fine lot of blooms; Messrs. Geo. Cooling & Son being 2d.

### Fruit.

This department is always a good one at Trowbride, but this season it was remarkably fine; not only was the fruit numerous, but the quality was very high throughout. There were five collections of ten dishes, and as the number composing a dish is an unlimited one, and imposing looking quantities are staged, the effect is greatly heightened.

The best collection came from Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, who had very fine Alicante, Black Hamburgh, and Foster's Seedling Grapes, Barrington and Bellegrade Peaches, very fine Washington Plums, Hunt's Tawny Nectarine, Moor Park Apricots, Best of All and Eastnor Castle Melons; 2d, Mr. Ridge, gr. to James Derham, Esq., Bristol, who had Muscat of Alexandria and Black Hamburgh Grapes, Early York and Ford's Seedling Peaches, Downton Nectarine, Shipley Apricot, Jargonelle Pears, Green Gage Plum, and Morello Cherries; 3d, Mr. Thomas Smith, Bath. A collection shown by Mr. G. Garraway, of Bath, was highly commended.

The only exhibitor of a Pine was Mr. Miller, who had a very fine Queen.

The best two bunches of Black Grapes were large and finely fruited bunches of Black Hamburgh, shown by Mr. A. Young, gr. to B. Thomas, Esq., Clifton; 2d, Mr. G. Hodges, Bath, with the same, in excellent form; 3d, Mr. H. Gay, gr. to L. Dobney, Esq., Bath, with the same.

In the class for black Muscats Mr. H. Clark, gr. to C. E. Colston, Esq., Roundway Park, was 1st, with two very fine bunches of Madresfield Court; 2d, Mr. E. J. Hill, Westbury-on-Trym, with the same.

Mr. A. Young had the best two bunches of white Grapes (Muscats excluded), staging fine examples of Foster's Seedling; Mr. A. Miller being 2d, with the same—also very good; 3d, Mr. G. Hodges, with the same.

In the class for white Muscats, Mr. G. W. Shelton, gr. to W. K. Wait, Esq., Bristol, was 1st, with well finished Muscat of Alexandria; 2d, Mr. F. Smith, the Palace Gardens, Salisbury, with the same; and 3d, Mr. J. Loosemore, gr. to E. Cooper, Esq., with the same.

Apricots were largely shown. There were twenty-one dishes of very fine fruit, mostly Moor Park.

Single dishes of Peaches and Nectarines, and also of Green Gage Plums were numerous and very fine, so were dessert and culinary Apples, Lord Suffield and Warner's King among the latter being very fine.

Jargonelle Pears were largely and finely shown.

The best centrepiece, composed of flowers and fruit, was shown by Mr. E. Cole, gr. to W. Pethick, Esq., Bristol, executed in admirable taste; 2d, Mr. E. J. Hill, also with an excellent stand; 3d, Mr. Hoskins, Clifton.

### Vegetables.

The display of these was remarkably fine, and they were very numerous. It would be difficult to find a better display in any part of the country than that produced at Trowbridge, and especially by cottagers.

Potatos were a remarkable sight, numerous, fine, clean, and handsome.

The cottagers' plants (which in some respects are much better than are frequently seen staged by gentlemen's gardeners) are remarkable for their high culture, and the cottagers' tent at Trowbridge is an interesting show in itself.

## CHEADLE FLORAL AND HORTICULTURAL: August 21 and 22.

The eighteenth annual exhibition of this Society was held on the above dates in a large meadow kindly placed at the service of the committee by Dr. Godson. In many respects this show was a decided improvement on previous exhibitions held on the same ground, notably in regard to the stove and greenhouse flowering plants, the splendid show of fruit, and the miscellaneous groups of plants arranged for effect. There were eighty-eight classes in the schedule, and in almost every case the prizes were well contested, while in some of the classes the number of exhibits ran up to six, eight, and even beyond that number.

In the open class for ten stove and greenhouse plants, J. Leigh, Esq., J.P. (J. Kirk, gr.), came well to the front, with fine examples of Croton angustifolius and C. Disraeli, well grown, and of good colour; Anthurium Andreanum, Eucharis amazonica, with thirty-six spikes of bloom; Dipladenia amabilis, covered with flowers; Clerodendron Balfourianum, and Erica æmula. The 2d prize was awarded to S. Baerlein, Esq. (G. Williams, gr.), who had Croton Queen Victoria, C. Evansianus, Kentia australis, Ixora Williamsi, Erica Irbyana, and Allamanda grandiflora, covered with bloom, among his best plants. The 3d fell to J. Watts, Esq. (R. Mackellar, gr.), in whose collection we observed Ixora Colei, with over fifty trusses of bloom.

In the class for amateurs of the same number and description of plants, J. Watts, however, was a long way ahead. Mr. Mackellar here staged some excellent examples of Ixoras, certainly the best that have been seen in the neighbourhood of Manchester for the last few years, for since Messrs. Cole, Baines and Samson have ceased showing, Ixoras have not been very frequent at our shows. Ixora Prince of Orange had 120 good trusses of bloom, and I. Williamsi over 200; these stood well out against clean and healthy foliage, and were much commented upon; Eucharis amazonica, with forty-six spikes; a Stephanotis, covered with flowers; and Dipladenia amabilis, with forty trusses. For foliage, Cocos Weddelliana, Cycas revoluta, and Croton Queen Victoria, were well grown and promising; J. Leigh came 2d, showing Allamanda Hendersoni and Franciscea calycina in good form; Mrs. Hodgkinson (D. Boardman, gr.) was 3d, in whose group we observed good plants of Dipladenia boliviensis and amabilis, and Rondeletia speciosa major.

For six stove and greenhouse plants in bloom, Mrs. Sykes (G. Kemp, gr.) came well to the front with Statice

profusa, well-flowered gloriosa superba, Stephanotis, and Eucharis, among his best plants. D. Adamson, Esq. (J. Brierley, gr.), was 2d.

For six fine-foliage plants S. Baerlein was 1st, showing Cycas revoluta, Dasylirion acrotrichum, Encephalartos Lehmanni, Cordyline indivisa, and Pritchardia pacifica, in excellent condition; Mrs. Sykes was 2d, having Alocasia Lowi, Croton irregulare, Dracæna Mooreana, Yucca filamentosa, &c.; J. Leigh was 3d.

Six exotic Ferns were shown by S. Baerlein, who was 1st with Dicksonia antarctica, Cyathea dealbata, Cibotium Schiedei, Gleichenia flabellata, Microlepis hirta cristata, and Polystichum capense; Mrs. Sykes was 2d, with Dicksonia antarctica, Goniophlebium subauriculatum, Davallia Mooreana, and Alsophila excelsa, in good form; J. Watts was 3d, who had Pteris scaberula and Davallia Mooreana, and Alsophila australis among his best plants.

Caladiums were numerous and good, D. Adamson winning with good examples of Meyerbeer, Prince Albert Edward, bicolor, splendens, and Chantini; Mrs. Sykes was 2d, and J. H. Sykes (W. Ferneyhough, gr.) 3d.

The zonal and bronze Pelargoniums were scarcely as good as on previous occasions—with the former J. Judgson (E. Sherd, gr.) was awarded 1st prize with plants of Alice Spencer, Lady Sheffield, Laura Strachan, &c., 4 feet across; J. E. Platt (C. Nixon, gr.), 2d; and J. G. Smith, 3d. J. H. Schill (G. Coulson, gr.) was 1st, with four bronze and tricolor Pelargoniums. Mr. J. Hill came in 1st with three table plants. J. Watts 2d, and G. W. Mould (A. Macdonald, gr.) 3d.

A capital lot of hardy Ferns were shown, but since so many exhibitors have two or more Athyriums in almost every group, it might perhaps be worth while having a class for Athyriums only, and another where this genus with its varieties were excluded. Mrs. Deakin was 1st; G. W. Mould 2d, showing good plants of Adiantum Capillus-veneris and Onoclea sensibilis; 3d, J. Watts, who had a good example of Osmunda regalis cristata and Onoclea sensibilis.

Mrs. Deakin was 1st with two pots of Lilium auratum, J. Watts 2d: whilst with four pots of Lilium lancifolium Mrs. Sykes was 1st, with well flowered and very dwarf specimens.

D. Adamson showed three pots of Achimenes, and was 1st; H. Schill coming in 2d.

Three Lycopods were shown by G. W. Mould, who was 1st: in this group was a large plant of Selaginella lævigata; W. Hudson (G. Gass, gr.), being 2d.

Tuberous Begonias were well represented; clean healthy specimens 3 feet high, covered with large flowers, were to be seen in several groups. H. Schill was 1st with three, and also with a single specimen; H. Hudson was 2d in the former class, and G. Wilkes 2d for one specimen.

Fuchsias were well represented, H. Schill taking 1st for four plants; D. Adamson 2d, and J. E. Platt 3d. H. Schill was also 1st with a single specimen, showing a fine plant of Arabella; J. H. Sykes was 2d, with a plant of Charming.

Four Adiantums were shown by Mrs. Hodgkinson, having A. cuneatum, A. gracillimum, A. decorum, and a fine plant of A. farleyense: these secured the 1st prize; the 2d falling to Mrs. Sykes with A. gracillimum, A. tenerum, A. decorum, and A. farleyense.

A number of Draccenas were staged, clean and well grown, and mostly very fine in colour: Mrs. Sykes was 1st, D. Adamson 2d, and H. Schill 3d. Examples of Baptistii, Mooreana, amabilis, Regina, excelsa, and Bausei were met with in the collections.

H. Schill took 1st with four pots of Celosia pyramidalis plumosa; Major Turner (R. Murray, gr.) was 2d, and D. Adamson 3d.

A capital lot of single and double Petunias were staged, healthy and vigorous, and full of bloom. With the singles W. Hudson was 1st, H. Schill 2d, and J. C. Jones 3d. J. Watts was 1st with one single Petunia, and also for one double.

A numerous lot of Coleus were shown, but among them were some sadly deficient in colour. J. H. Sykes was 1st with four plants, W. Hudson running a very close 2d.

Gloxinias were shown by J. Leigh and J. G. Silkenstadt (C. Humphrys, gr.), and were awarded respectively 1st and 2d.

A good lot of Cockscombs were staged, some measuring 20 inches over. For three plants Mrs. Sykes, Major Turner, and J. C. Jones were competitors, and were awarded prizes in the order in which their names appear.

With a single specimen Geranium D. Adamson was 1st, with a good plant of White Wonderful; W. Hudson coming 2d.

For a single Orchid H. Schill took 1st with a capital plant of Miltonia spectabilis, with thirty-six blooms; J. Watts 2d, with Peristeria elata, a large plant bearing eight spikes of flower past their best.

J. Watts was 1st with a single pot of Eucharis amazonica, also with a single Chrysanthemum, Madame C. Degranges, having thirty large flowers open. The same exhibitor was 1st with an ornamental fruited plant, showing an Orange full of fruit.

Several good plants of Yucca filamentosa variegata were shown, Mrs. Sykes being 1st, with a single specimen; Major Turner 2d.

In the nurserymen's class for groups of plants to be arranged in a circle 10 feet in diameter, no staging being allowed, J. Horley, Edgeley Road, near Manchester, was 1st; J. Burnet 2d.

In the amateurs' class for similar plants, the same conditions being observed, S. Baerlein was 1st, with a capital arrangement; very few flowering plants were used, but foliage plants and Adiantums were judiciously blended and worked in so that a most effective display, far in advance of five or six other competitors, was the result. Mrs. Sykes was 2d, D. Adamson 3d, J. H. Sykes and J. Leigh equal 4th.

A fine lot of stove and greenhouse blooms were shown, Miss Cole being 1st for twelve bunches, J. Watts 2d, H. Schill 3d, and S. Baerlein 4th. Fine bunches were to be seen of Allamanda Hendersoni, A. nobilis, Anthurium ferrierense, Lapageria rosea and L. alba, Ixora Colei, coccinea, Williamsi, Disa grandiflora, Cattleya Sanderiana, C. speciosissima, &c.

Bouquets were well shown; stands of flowers for table decoration, baskets of flowers arranged for effect, were numerous, and very nicely done.

J. Watts was 1st with bouquets, G. Wilkes 2d, and Miss Cole 3d.

D. Adamson was 1st with flowers for table decoration, J. Leigh 2d.

Basket of Roses.—Mr. G. Wilkes was 1st.

Collection of wild flowers was awarded to J. Leigh.

### FRUIT.

In the class for six dishes of fruit there was strong competition; and, in fact, the same may be said of all the fruit classes, the exhibits uniformly were of first-rate character. The Grapes, both black and white, were well done—large in berry, and excellent in finish. J. Watts was awarded 1st for six dishes, showing Muscats and Black Hamburgh Grapes, Peaches, Pears, Cherries, and a Melon, Captain Larks; the 2d prize fell to Mrs. Patterson (T. Ferguson, gr.), who also had good Muscats and Black Hamburgh Grapes, Royal George Peach, Lee's Prolific Fig, Elruge Nectarine, and a Melon; the 3d fell to Mrs. Sykes. J. Watts was 1st with six dishes of hardy fruits, showing Raspberries, Cherries, Strawberries, Pears, Gooseberries, and Peaches; Mrs. Patterson 2d, Mrs. A. J. Grant 3d. For two bunches of Black Hamburgh Grapes, Alderman Raynes (J. Barker, gr.) came well to the front, and was 1st; J. Watts 2d, Mrs. Patterson 3d. Alderman Raynes was again 1st with black Grapes other than Hamburghs, showing fine examples of Madresfield Court; the 2d was secured by J. Evans (C. A. Young, gr.) with the same variety, also very good; while Mr. A. J. Grant was 3d with Gros Colmar. J. Watts was 1st with two bunches of Muscats, which were well done; J. Evans 2d, and J. E. Platt 3d. For the largest bunch of Grapes J. Evans was 1st with Black Hamburghs, Major Dickson 2d with Barbarossa. C. E. Thorneycroft was 1st for Pines, J. Watts winning 1st for a dish of Peaches; D. Adamson 2d; whilst with Nectarines the latter gentleman came in 1st, Mrs. Patterson 2d.

A capital lot of Melons was staged, J. Watts getting in 1st for green-flesh with Best of All; A. J. Grant 2d, with Conqueror of Europe. Mrs. Patterson was 1st with a scarlet-flesh, J. Leigh coming 2d.

Apples, Pears, Cherries, and Currants were shown well—in the Apples Mrs. Patterson winning with Lord Suffield in the culinary, and also taking 1st for dessert Apples.

Cucumbers were staged by A. Greenshields, G. Wilkes, and J. Evans, and were awarded respectively 1st, 2d, and 3d.

### VEGETABLES, &C.

In the class for ten distinct varieties of vegetables no less than eleven collections were put up, and gave the judges no little difficulty; all were good, whilst the stand of A. J. Grant was ultimately considered best; the 2d fell to G. Wilkes, and 3d to H. Schill.

Captain Marsland (S. Lanceley, gr.) was 1st for a dish of Peas. R. Smelt, 1st for French Beans. Mrs. Cruse took the 1st for kidney Potatos with Garnell's Seeding, and Mrs. Deakin a similar award for rounds with Early Oxford.

Capital groups of plants were put up by J. Hooley, nurseryman; W. G. Caldwell & Sons, Didsbury and Knutsford; C. Gleave, Heaton, Norris, and J. Burnett, Edgeley.

The Cheshire Beekeepers' Association held an exhibition and competition in the grounds, and some fine hives and supers of honey were shown by Mr. J. Cotterill, Mr. S. Cookson, and Mr. W. Wright.

The whole of the arrangements were under the management of E. D. Stone, Hon. Sec., who is a thorough enthusiast, and since he never competes in any classes he has no other interest than the pure love of horticulture, and a strong desire to bring together a fine collection of horticultural products for the pleasure of the inhabitants of Cheadle and surrounding districts.

## WESTON-SUPER-MARE: August 18.

THIS Society held its annual show on the above date in the usual place—the Grove. In these times, when there appears to be more exhibitions than there is material wherewith to keep them up to the requisite standard, it was gratifying to see that the productions competing in the respective departments of plants, flowers, fruits, and vegetables were quite up to the mark as regards quantity and quality. Vegetables in particular were so good as to surprise those who have the luck to reside where everything in the way of culinary vegetables has been this summer so burnt up as to scarcely be presentable. Flowering plants were well shown in the open classes, and also in those confined to amateurs and gentlemen's gardeners, both of which latter show a marked improvement in their productions.

### STOVE AND GREENHOUSE PLANTS.

In the open class for twelve, at least four of which must be fine-leaved kinds, Mr. Lock, gr. to B. W. Cleave, Esq., Crediton, was well in front, staging a fine group, the best of which were Erica æmula, E. Fairreana, Allamanda nobilis, Ixora Duffii, Croton Disraeli, and Areca lutescens. Mr. Cypher, Cheltenham, who took 2d, had amongst others well-flowered examples of Statice Holfordii, Erica insignis, Allamanda nobilis, Croton majesticus, Kentia Forsteriana, and K. australis. These Kentias it may be observed are amongst the best of all Palms, either for exhibition or for greenhouse decoration, as they require no more heat than will protect them from frost, they retain their leaves long, and are not liable to become yellow and unsightly in appearance. 3d, Mr. J. F. Mould, Pewsey, with a nice group of fresh-looking stove plants.

With six stove and greenhouse plants Mr. J. F. Mould was a good 1st, his best specimens being Dipladenia amabilis, Ixora regina, Bougainvillea glabra, and Erica Marnockiana, the last named being beautifully flowered and unusually high in colour; 2d, Mr. Cypher.

### FINE-LEAVED PLANTS

were shown in excellent condition by Mr. Lock, who took 1st, his most noteworthy examples were Alocasia Thibautiana, Gleichenia rupestris glaucescens, and Croton Williamsii. Mr. Cypher, who was 2d, had, with others, Croton Sunset, C. Johannis, and Cordyline indivisa.

### STOVE AND GREENHOUSE FERNS.

Here again Mr. Lock took the lead, staging a fresh-looking, well-managed half-dozen, consisting of Davallia Mooreana, D. Tyermanii, D. polyantha, Gleichenia Mendelii, G. rupestris, and Nephrolepis davallioides furcans; 2d, Mr. W. Brooks, Weston-super-Mare.

Adiantums.—These favourite Ferns are always well shown at Weston; in a close run with six, Mr. J. F. Taylor came in 1st; Mr. Rye, gr. to J. Derham, Esq., Sneyd Park, 2d.

Six Hardy Ferns.—1st, Mr. Lock; 2d, Mr. Brooks; both having nicely grown plants.

Lycopodiums.—With these Mr. Matthews, gr. to T. T. Knylton, Esq., had 1st, 2d; Mr. W. Brooks.

### ZONAL PELARGONIUMS, &C.

were well shown by Mr. Adams, gr. to W. Smith, Esq., who took 1st for six, with nicely flowered plants; 2d, Mr. Brooks.

Six Petunias.—1st, Mr. W. Brooks.

Gloxinias.—1st, Mr. Holland, gr. to W. Ash, Esq.; as also with six Achimenes and six Cockscombs.

Fuchsias in sixes came from Mr. W. Brooks, who was 1st; Mr. J. P. Cassell 2d.

Six Lilies.—1st, Mr. W. Brooks.

### NEW OR RARE PLANT IN FLOWER.

Here Mr. Cypher had 1st honours, with the white-flowered Dendrobium leucolophotum; 2d, Mr. Hughes, gr. to W. Pethick, Esq., with Clitoria ternatea, an old Pea-flowered evergreen climber, from India, with very large bright blue flowers—a plant now almost lost sight of, but which deserves a better fate.

In the division confined to amateurs and gentlemen's gardeners there was a very good display of both flowering and fine-leaved plants, the former in particular collectively having a freshness about them not always present on the exhibition stage.

In the class for six stove and greenhouse plants in bloom Mr. Lock once more took the lead with a nicely flowered lot, containing Allamanda grandiflora, Erica Ewerana superba, and Ixora Williamsii; Mr. Rye, who was 2d, had, amongst others, Stephanotis floribunda, Allamanda Hendersoni, and Ixora Williamsii unusually fine in colour; 3d, Mr. Hughes, who also had well-flowered plants.

Fine-foliage plants were forthcoming in good order from several exhibitors, Mr. Lock being 1st with large plants in fine condition. Amongst them was a good example of Gleichenia speluncæ, Croton Warneri, and C. velutinus, both densely clothed with highly coloured foliage; Mr. Rye, who was 2d, likewise had a well grown group.

Six Ferns.—1st, Mr. J. F. Taylor.

Four Adiantums.—1st, Mr. Lock: 2d, Mr. Holland; both staging nicely managed plants.

Zonal Pelargoniums were well done in this division, Mr. Lewis, gr. to J. E. Cole, Esq., taking 1st. Four double varieties.—1st, Mr. T. R. Vicary.

Fuchsias.—1st, Mr. T. R. Vicary; 2d, Mr. J. P. Cassell.

### CUT FLOWERS.

There was an extensive display in this department Roses were shown in good condition considering the season. In the open class for twenty-four varieties, three blooms of each, Mr. S. P. Budd, Bath, was 1st, with a nice stand; Messrs. Perkins & Sons, Coventry, 2d. Twelve Tea varieties.—1st, Mr. S. P. Budd; 2d, Messrs. Parker & Son, Bristol.

Dahlias.—With twenty-four, Mr. A. Hill, Bower Ashton, had 1st.

Twelve varieties of single Dahlia, three blooms of each.—1st, Mr. Carr, Tiverton; 2d, Mr. A. Walters, Bath.

Twenty-four Gladiolus.—1st, Mr. Dobree, Wellington, with fine spikes, comprising many of the best varieties; 2d, Mr. W. Brooks.

Twenty-four bunches of cut flowers.—1st, Mr. Miller, gr. to F. Tagart, Esq., Old Sneed Park; 2d, Mr. W. Brooks.

Hand bouquet.—1st, Mr. Cypher; 2d, Messrs. Perkins & Sons.

Three buttonhole bouquets.—1st, Mr. Cypher; 2d, Messrs. Perkins & Sons.

### FRUIT

was plentiful and most of it in good condition. This not only applies to the better kinds of indoor growth, but also to the hardy sorts, notably Apples and Plums which were largely shown.

With eight dishes, Mr. Iggulden, gr. to the Earl of Cork, Marston House, Frome, was 1st, having finely finished Black Hamburgh Grapes, Muscats in nice order, and Smooth Cayenne Pine, Royal George Peaches, Pine-apple Nectarines, Moor Park Apricots, Hero of Lockinge Melon, and Morello Cherries; Mr. Nash, gr. to the Duke of Beaufort, Badminton, Chippenham, who was 2d, had a good collection containing Muscat of Alexandria and Black Hamburgh Grapes, Grosse Mignonne Peaches, and Black Tartarian Cherries, very well kept, being still quite fresh in appearance; Mr. Rye 3d, also staging a nice collection.

Three bunches of Black Hamburgh Grapes.—Here Mr. Iggulden was 1st, with beautifully finished examples; 2d, Mr. Eliot, gr. to H. W. Tugwell, Esq., Bath, who likewise showed handsome fruit.

In the class for any other variety of black Grapes Mr. Nash had 1st, with excellent examples of Black Alicante; Mr. E. F. Hall taking 2d, with Madresfield Court.

Three bunches of Muscat of Alexandria.—1st, Mr. Shelton, gr. to W. K. Wait, Esq.; 2d, Mr. Whitwell.

Three bunches of any other white variety.—1st, Mr. A. Young, Clifton, with good bunches of Foster's Seedling, splendidly finished; 2d, Mr. Miller, with a promising seedling with a flavour not unlike Ferdinand de Lesseps. The bunches are long and tapering, berries in the way of Muscat of Alexandria.

Eight Peaches.—1st, Mr. Seagers, gr. to Mrs. Temperley, who had Crimson Galande, very well coloured; 2d, Mr. Dafurn, gr. to Mrs. Walker, with good examples of Grosse Mignonne.

Eight Nectarines.—1st, Mr. Dafurn, with a beautiful dish of Elruge coloured to perfection; 2d, Mrs. Woollen, showing unusually large examples of Pitmaston Orange.

Eight Apricots.—1st, Mr. Fear; 2d, Mr. Hill, Bower Ashton.

Dish of Figs.—1st, Mr. Matthews; 2d, Mr. Fear.

Green-flesh Melon.—1st, Mr. Rye; 2d, Mr. Holland.

Scarlet-flesh Melon.—1st, Mr. Miller; 2d, Mr. H. Mardon.

## SHROPSHIRE HORTICULTURAL: August 19 and 20.

THE summer show of this society was, as usual, held at Shrewsbury, in The Quarry, which, notwithstanding the large extent of ground it comprises, afforded no more room than needful to allow free movement to the thousands who were present on the second day, which fact, coupled with the numbers who visited the exhibition on the opening day being largely in excess of the attendance on any previous year, speaks well for the prospects of the Society, which, by the way, has, in the comparatively short time of its existence, attained a position such as is equalled by few similar institutions in the kingdom. The exhibition was not only a success from the essential point of view named—the numbers who thronged the tents and ground—but equally so from a horticultural point of view. Plants, including both hard and soft-wooded flowering kinds, fine-leaved sorts, Ferns, and Palms, were present in large numbers, and, what is more, as fresh as they usually are seen earlier in the summer, most of the exhibitors evidently making especial preparation for the occasion. Fruit was largely shown, Grapes particularly—for which good prizes were offered—being in great force, the greater portion well up in finish.

### Stove and Greenhouse Plants.

In the open class of twenty, half of which were required to be in bloom, there were three exhibitors, the veteran Mr. Cypher, of Cheltenham, taking the lead with a fine lot, containing beautifully flowered specimens of Erica obbata purpurea, Ixora Pilgrimii, Dipladenia amabilis, Statice profusa, Allamanda nobilis, and the brilliant red-flowered Rhododendron Duchess of Edinburgh. Amongst fine-leaved plants associated with these were immense examples of Encephalartos villosus and Cycas intermedia, with Croton Queen Victoria, C. Prince of Wales, and C. Sunset, each 5 or 6 feet in diameter, and densely clothed with highly-coloured foliage; the last-named sort presented a mass of glowing crimson such as rarely seen even under the most skilful treatment; Mr. Roberts, gr. to E. C. Glover, Esq., Highfield Hall, Leek, who was 2d, also had a good collection, the best of which were Ixora Williamsii, I. coccinea, Allamanda Hendersoni, Dipladenia Williamsii, Ptychosperma Alexandræ, Croton angustifolius, and Asparagus plumosus nanus in the form of a loosely-trained bush, in which way it had a light and effective appearance; Mr. Tudgey, Waltham Cross, taking 3d, with a nice group, in which were well flowered specimens of Erica insignis, E. Fairreana, and Statice profusa, with several large Palms and other fine-leaved plants, the best of which were Pritchardia pacifica, Kentia australis, and Cycas circinalis.

Nine stove and greenhouse plants, not less than five in bloom (open).—Here 1st honours went to Messrs. Pritchard & Sons, Shrewsbury, who staged a well grown set of plants, amongst which were Erica Marnockiana, Eweriana superba, Lapageria alba, Croton Queen Victoria, and Kentia Belmoreana: 2d, Mr. Farrant, gr. to Mrs. Jason, Abbey Foregate, Shrewsbury, who, with others, had nicely flowered plants of Ixora aurantiaca, Allamanda Hendersoni, and Clerodendron Balfourianum.

Six stove and greenhous plants in bloom (open).—1st, Mr. Cypher, here again having a nicely flowered collection, the most noteworthy being Allamanda grandiflora, Dipladenia amabilis, and Erica Irbyana; 2d, Messrs. Heath & Sons, Cheltenham, who staged half-a-dozen nicely bloomed Orchids, including Cattleya Gaskelliana, C. crispa, Dendrobium formosum, Pilumna nobilis, Saccolabium Blumei, and Mesospinidium vulcanicum.

Six stove and greenhouse plants, not less than four in bloom (gentlemen's gardeners).—1st, Mr. Roberts, with, amongst others, nicely bloomed examples of Erica Shannoni and Dipladenia amabilis; 2d, Mr. Farrant.

### Ferns

were well shown. In the open class for six Mr. Cypher took 1st, his best examples being Microlepia hirta cristata, Adiantum cardiochlæna, Alsophila australis, and the rare A. elegantissima; 2d, Mr. Roberts, who also had a meritorious exhibit.

With six Ferns in the class confined to gentlemen's gardeners Mr. Farrant was well in front with medium-sized fresh-looking plants; 2d, Mr. Thurtle, gr. to J. L. Burton, Esq.

### Fine-leaved Plants.

Palms.—With six, Mr. Cypher took the lead—Kentia Canterburyana, K. Belmoreana, Pritchardia pacifica, and Thrinax elegans being the best; Mr. Roberts, who was a good 2d, fine specimens of Latania borbonica, Cocos Weddelliana, and C. flexuosus.

Dracænas were well shown in a close run. Mr. Shepherd, gr. to the Misses Bannerman, was 1st for six; Mr. Lambert, gr. to Col. Wingfield, 2d.

Six Caladiums.—With these Mr. Farrant had 1st, staging well managed plants; 2d, Messrs. Pritchard & Sons.

Coleus in sixes came from Mr. Shepherd and Mr. Norris, gr. to W. Laing, Esq., Shrewsbury, who were 1st and 2d in the order of their names.

### Fuchsias, &c.

were forthcoming in good order, Messrs. Pritchard & Sons being 1st with six large well furnished examples, not too stiffly trained, the best being Royal Standard, Mrs. Huntley, and Mrs. Marshall; 2d, Mr. H. Owen, The Cedars, Shrewsbury.

Zonal Pelargoniums.—With six single varieties, Messrs. Pritchard & Sons were 1st and 2d, as also in the class for six doubles.

Begonias.—In the class for six, Messrs. Prichard had 1st, Mr. Shepperd 2d.

Collection of fifty miscellaneous plants in 5-inch pots, not less than thirty in blooms.—1st, Messrs. Pritchard; 2d, Messrs. Jones.

Dinner-table Plants.—1st, Messrs. Jones; 2d, Messrs. Pritchard.

### Groups of Plants arranged for Effect.

These are beginning to present too much sameness as often met with. It was refreshing to see Messrs. Pritchard & Son's arrangement that took 1st in the class for groups occupying 100 square feet, the principal feature in it being that it was devoid of the colour-spotted, overdone appearance which does so much to mar the effect of groups of this kind. Messrs Jones & Sons, Coton Hill, Shrewsbury, took the 2d and 3d prizes, their exhibits also possessing more merit than often to be found in this kind of decoration.

In the division confined to amateurs only there was a marked improvement upon what the plants have been in former years.

With six stove and greenhouse plants Mr. H. Owen took 1st, for a nice half dozen, which included a nicely-flowered Allamanda, and a beautiful variety of Lapageria rosea; 2d, Mr. E. Burd, Shrewsbury.

Four Exotic Ferns.—1st, Mr. W. R. Mansell, Wellington, with nicely grown plants; 2d, Mr. H. Owen.

Three Coleus.—1st, Mr. G. Burd, Mayfield, Shrewsbury; 2d, Mr. J. Baker.

Three Fuchsias.—1st, Mrs. Wace; 2d, Mr. J. Baker.

Zonal Pelargoniums, both double and single varieties, were present in very good condition, Mr. L. Burd taking 1st in the class for three single varieties, and also for doubles, Mr. H. Owen being 2d in each.

Collections of twenty-five miscellaneous plants in 5-inch pots, not less than fifteen in bloom.—1st, Mr. L. Burd; 2d, Mrs. Wace.

### Cut Flowers

were plentiful. With twenty-four Roses, Messrs. Perkins, Warwick Road, Coventry, were 1st; Messrs. Sandy & Son, Stafford, and Mr. R. H. Vertegans, Birmingham, being equal 2d.

Eighteen Roses.—1st, Mr. E. Wright; 2d, Mr. G. H. Berrington, Ludlow.

Thirty-six Dahlias.—1st, Mr. W. Shaw, Kidderminster; 2d, Messrs. Heath & Sons.

Twenty-four Dahlias.—1st, Messrs. Heath; 2d, Mr. West, gr. to E. Wright, Esq., Halston Hall.

Nine Dahlias (amateurs).—1st, the Rev. J. H. E. Charter, Shrewsbury; 2d, Mr. R. J. Niven, Wellington.

Twelve single Dahlias.—1st, Mr. G. H. Berrington.

Eighteen spikes of Gladiolus.—1st, Mr. W. Shaw; 2d, Mr. Lambert.

Twelve bunches of stove and greenhouse flowers.—1st, Messrs. Pritchard; 2d, Mr. Roberts.

Twelve bunches of hardy herbaceous flowers.—1st, Mr. R. H. Vertegans; 2d, Messrs. Jones.

Single stand of flowers (open).—1st, Messrs. Jones; 2d, Mr. Cypher.

Stand of flowers (amateurs).—1st Mr. E. W. Pritchard; 2d, Mr. W. Jones, Montford.

Some beautiful bouquets were shown. In the open class for one bridal bouquet. Mr. Cypher had 1st, Messrs. Perkins 2d.

Ball bouquet.—1st, Messrs. Perkins; 2d, Mr. Cypher.

In the amateurs' classes Mrs. Wace had 1st, with a ball bouquet, Mr. J. Barker 2d.

Bridal bouquet.—1st, Mr. E. W. Pritchard; 2d, Mrs. Bacchus.

### Fruit.

Grapes.—With six bunches of black Grapes, three varieties, Mr. Young, gr. to J. Evans, Esq., Hurst House, Prescot, was placed 1st, with well finished bunches of Black Alicante, Black Hamburghs, large in bunch, but not quite up in colour, and Madresfield Court, fine in bunch and berry, but also wanting in colour; Mr. Goodacre, gr. to the Earl of Harrington, Elvaston, was 2d, with bunches a little smaller than his opponent. They consisted of Black Hamburghs, even in bunch and berry—well finished; Madresfield Court, good; and Muscat Hamburgh, handsome well filled bunches, black, and well up in finish; Mr. Wallis, gr. to the Rev. W. Sneyd, Keele Hall, who was 3d, had also very good bunches.

Three bunches of black Grapes.—These were very well shown by Mr. Lambert, who took the lead with Black Hamburghs; 2d, Mr. Bennett, gr. to the Hon. C. H. Wynn, Rug, Corwen, staging Alnwick Seedling in beautiful condition.

Four bunches of white Grapes, two varieties.—Here Mr. Young was 1st, with Muscat of Alexandria and Foster's Seedling, both of which were good examples; 2d, Mr. Parker, gr. to J. W. P. Corbett, Esq., Droitwich, with Muscat of Alexandria, well finished, and Golden Champion, in beautiful order.

Three bunches of white Grapes.—In this class Mr. Purser, gr. to J. Watson, Esq., Berwick House, Shrewsbury, took the lead with Muscat of Alexandria, well up in colour; 2d, Mr. Shepherd.

Two bunches of black Grapes (amateurs).—1st, Mr. R. Blakeway Phillips, Hanwood; 2d and 3d, Mr. G. Burr, The Oaklands.

Two bunches of white Grapes (amateurs).—1st and 2d, Mr. G. Burr; 3d, Mr. Blakeway Phillips.

Collection of fruit, twelve dishes.—1st, Mr. Goodacre, his best examples being Muscat of Alexandria and Madresfield Court Grapes, Charlotte Rothschild Pine, Goshawk Peaches, and Pine-apple Nectarines; Mr. Parker, who was a close 2d, had, amongst others, Muscat of Alexandria and Black Hamburgh Grapes, Royal George Peaches, Elruge Nectarines, a Queen Pine, and Moor Park Apricot; 3d, Mr. Bennett.

Nine dishes of fruit.—1st, Mr. Shepherd, whose most meritorious examples were nicely finished Muscat of Alexandria Grapes, a good dish of Peaches and Apricots; 2d, Mr. Lambert.

Dish of Peaches.—1st, Mr. W. Shaw; 2d, Mr. J. Meakin, The Hayes, Stone.

Dish of Nectarines.—1st, Mr. Bennett; 2d, Mr. Kennedy, gr. to Sir C. R. Boughton.

Green-flesh Melon.—1st, Mr. Hawkesford, gr. to Sir Vincent Corbet; 2d, Mr. Goodacre.

Scarlet-flesh Melon.—1st, Mr. J. Meakin; 2d, Mr. R. Blakeway Phillips.

Commendations were given to groups of miscellaneous plants contributed by Messrs. Pritchard & Sons, Messrs. Jones & Sons, Mr. Myers, Shrewsbury, Messrs. James Dickson & Sons, Chester; Messrs. F. & A. Dickson, Chester; Messrs. Smith, Worcester; hardy herbaceous flowers by Mr. Vertegans; a fine collection of vegetables by Messrs. Webb, Wordsley; and new vegetables by Mr. T. Laxton.

## SEVENOAKS HORTICULTURAL: August 19.

THIS Society held its eighteenth annual exhibition in Montreal Park, by permission of Earl Amherst, the pleasure-grounds, as well as the park, being thrown open. The weather was fine, and attracted a large number of visitors. The show was a success in every way—quite equal to any of former years, the plants being especially good and well represented in the different classes for flowering, fine-foliage, and Ferns.

In the open division for six stove and greenhouse plants in flower Mr. A. Gibson, gr. to T. F. Burnaby Atkins, Esq., Halstead Place, near Sevenoaks, was 1st, with fine plants of Allamanda nobilis, Dipladenia amabilis, Lapageria alba, Ixora Dixiana, Clerodendron Balfouri, and Statice profusa; Mr. Bolton, gr. to Mrs. Spottiswoode, Combe Bank, Brasted, was a good 2d, with Anthurium Scherzerianum, Allamanda Hendersoni, Clerodendron Balfouri, and C. fallax, &c.

For a single specimen stove or greenhouse plant Mr. S. Cooke, gr. to De B. Crawshay, Esq., Rosemount, Sevenoaks, was 1st, with a fine specimen of Epidendrum prismatocarpum; Mr. Burt, gr. to A. B. Mildmay, Esq., Shoreham Place, was 2d, with a good Cattleya; and Mr. Bolton 3d, with Ixora Williamsii.

Ornamental foliage plants were largely shown, and in fine condition. Mr. J. Goodman, gr. to Mrs. Crawshay, Bradbourne Hall, Sevenoaks, being 1st, with Cibotium regale, Latania borbonica, Phœnix reclinata, Croton Williamsii, Alocasia Thibautiana, and Dasylirion acrostichoides; Mr. A. Waterman, gr. to J. Brassey, Esq., Preston Hall, Aylesford, was 2d, with Cycas revoluta, Brahea filamentosa, Croton interruptus, and C. undulatus, &c.; and Mr. J. Bolton 3d.

Ferns were well represented. For six exotics, Mr. Staples, gr. to H. Oppenheim, Chipstead Place, Sevenoaks, was 1st with Cyathea medullaris, Alsophila excelsa, Dicksonia antarctica, Adiantum cardiochlæna, &c.; Mr. Bolton was 2d, with good plants of Cibotium regale, Dicksonia squarrosa, &c.; and Mr. Goodman 3d. For six British Ferns, Mr. Bolton was 1st; Mr. Meakin, gr. to C. R. Pelle, Esq., Riverhead, was 2d; and Mr. Staples 3d.

With six Fuchsias, Mr. Goodman was 1st; Mr. Huntly, gr. to the Rev. F. S. Curteis, The Rectory, Sevenoaks, 2d; Mr. S. Meakin 3d.

The class for Begonias here admits of the fibrous-rooted kinds being shown with the tuberous-rooted with much better effect: Mr. Meakin was 1st, Mr. Bolton 2d, and Mr. W. Searing, gr. to R. Monckton, Esq., Oak Lodge, 3d.

The classes for Caladiums, zonal Pelargoniums, and Achimenes were also well filled.

Plants suitable for table decoration were contributed by a large number of exhibitors. For the best six, Mr. J. Sharp, gr. to Grove Park, was 1st; Mr. F. Thorne, gr. to K. D. Hodgson, Esq., Ashgrove, 2d; and Mr. Goodman 3d.

In the division for smaller growers for four stove and greenhouse plants, Mr. J. Sharp was 1st; Mr. H. Wallis, gr. to Dr. Worship, of Ryecroft, 2d; and Mr. F. Knight, Ryecroft, 3d. For ornamental foliaged plants Mr. Sharp was 1st, Mr. Wallis 2d; and Mr. Noble, gr. to the Misses Austen, Old House, Sevenoaks, 3d. Fuchsias and zonal Pelargoniums were also exhibited in the division in good condition.

One of the principal features of this Society's exhibition are groups of plants arranged for effect; this year there were more exhibitors than usual, and they were especially well done. Mr. J. Waterman was 1st; Mr. S. Cook, 2d, Mr. Fennell, gr. to Mrs. Cazalet, Fair Lawn, Tonbridge, 3d; and Mr. Meakin, 4th; Mr. Bolton and Mr. Hubbard, grs. to Captain Platt, Dene Park, also put up good groups. For a group of Ferns, Mr. Staples was 1st with a fine group, which was almost entirely of Adiantums; Mr. A. Hatton, gr. to Mrs. Swanzy was 2d, Mr. Goodman, 3d; and Mr. Waterman, 4th; Mr. F. Webber, of Tonbridge, also showed a good group, not for competition. In the second division, for groups of miscellaneous plants, Mr. H. Vallins was 1st, Mr. G. Wood 2d, and Mr. W. Searing 3d.

Roses were shown in much better condition than could have been expected considering the season. For twenty distinct varieties, Mr. R. Grey, gr. to Earl Stanhope, Chevening, Sevenoaks, was 1st; the Westerham Nursery and Seed Co 2d, and Mrs. Seale, Vine Nursery, Sevenoaks, 3d. For twelve, Mr. W. Blundell was 1st, Mr. A. Gibson, 2d; and Mr. J. Hollingworth, Maidstone, 3d. For twenty-four Dahlias, distinct, Mrs. Seale was 1st, with a fine collection, and Mr. Cannell, 2d. For twelve, Mr. A. T. Walton, Orpington, was 1st, Mr. H. Jeal, gr., The Thorns, 2d. For twelve Asters, Mr. T. Robinson, gr., Hollingbourne, was 1st; Mr. Webber, 2d; and Mr. J. Hollingworth, 3d. For Gladiolus, six spikes, Mr. S. Cook 1st, Mr. W. Searing 2d, Mr. Goodman 3d. For Phloxes, six spikes, Mr. Bolton 1st, Mr. Noble 2d, Westerham Co. 3d.

Collections of stove and greenhouse cut flowers were very good. Mr. S. Cook 1st, Mr. Gibson 2d, and Mr. Bolton 3d. For three pieces for table decoration, Mrs. Hatton, The Quarry, Sevenoaks, was 1st; A. Hatton 2d. For single epergne, A. Hatton 1st, Miss Staples 2d, Mrs. Searing 3d, and Mrs. Hatton 4th. For hand bouquet Mr. Meakin was 1st, and for a basket of arranged cut flowers Mr. Hubbard. Arranged groups of wild flowers were also shown. A dinner-table decoration of aquatic flowers and foliage, not for competition, by Mr. F. W. Seale, of Vine Nursery, was especially good, and was much admired. A collection of Dahlias and other cut flowers by Mrs. Seale, not for competition, was exhibited and highly commended; as was also a nicely arranged group of perennials, not for competition, by Miss Worship.

FRUIT was shown in good condition and in quantity. For six varieties, Pines excluded, Mr. Waterman was 1st, with good black and white Grapes, Peaches, and Nectarines, a Melon, and Pears; Mr. Fennell was 2d, Mr. Goodman 3d. For a Pine Mr. A. Henderson, gr., Mabledon Park, Tonbridge, 1st; Mr. Fennell 2d. Grapes were especially good. For three bunches of black Mr. Henderson was 1st, Mr. G. E. Rabjohn, gr., Birling Manor, 2d; Mr. Goodman 3d. For three bunches, white, Mr. Gray was 1st; Mr. Goodman 2d, and Mr. W. Hill, gr., Sidcup Place, 3d. For a collection of Grapes, three varieties, Mr. Gray 1st; Mr. F. Osman 2d, and Mr. A. Henderson 3d.

For a Melon, Mr. Searing, Mr. Hamm, Mr. Thorne. For Peaches, Mr. Goodman, Mr. Hamm, Mr. Abbot. For Plums, dessert, Mr. Waterman was 1st, Mr. Bolton 2d. For Plums, culinary, Mr. Sears, gr., Kippington, was 1st; Mr. Waterman 2d, Mr. Gibson 3d. For dessert Apples, Mr. Waterman, Mr. Staples, Mr. Hubbard. For culinary Apples, Mr. Waterman, Mr. Cooke, Mr. Bolton. For dessert Pears, Mr. Waterman, Mr. Bolton, Mr. Staples. For a dish of Cherries, Mr. Waterman, Mr. Gibson, Mr. Staples.

The Westerham Nursery and Seed Co. also exhibited a collection of hardy fruit and cut flowers, not for competition.

Collections of vegetables were also shown — Mr. Waterman was 1st, Mr. Staples 2d, Mr. Bolton 3d.

The classes for cottagers produced a large competition, the fruit, vegetables, and plants being especially good.

## HASTINGS, ST. LEONARD'S, AND EAST SUSSEX: Aug. 19.

WE have to chronicle another most successful exhibition of this flourishing Society.

### PLANTS.

Size has with some growers been more the object than floriferous examples. On this occasion some few of the best specimens might even have been extended in dimensions, so densely packed were they with their respective flowers, whilst a stale plant could hardly, with the closest inspection, have been picked out in either of the classes.

In the open division Mr. Gilbert, of Hastings, repeated his success of the previous week, winning on this occasion with some of the same plants, adding thereto some most brilliant examples, notably a fine specimen of Kalosanthes coccinea superba, the deepest in colour we ever remember to have seen, and then not fully expanded, and a most floriferous and dense bush of Statice Gilbertii. Erica æmula and Allamanda Hendersoni were still very fresh and fine. Mr. Portnell, gr. to Sir A. Lamb, followed, a capital 2d, having Dipladenia amabilis one mass of flowers, and in vigorous health. Clerodendron fallax, with sixteen fine heads of bloom, was also a striking object, whilst his specimen of Bougainvillea glabra was covered with its mauve-coloured bracts.

In the next class, for six specimens, Mr. Dennis, gr. to C. H. Woodroff, Esq., Silver Hill, occupied the premier position with well grown plants of Bougainvillea glabra, tree, Kalosanthes coccinea superba, and four others; the 2d prize being well won by Mr. Duffin, gr. to S. Green, Esq., Oakwood, Ore, in whose collection was a very fresh example of Gilbert's variety of Statice.

For eight fine-foliage plants Mr. Gilbert was also in the 1st position, with a remarkably healthy collection, the Palms being of that dark green colour that is characteristic of good culture, Brahea filamentosa being especially good, a fine Croton majesticus, highly coloured, and a clean plant of Phormium tenax variegatum were also noteworthy. Mr. Portnell was awarded the 2d place, with a capital lot of plants, having Croton Queen Victoria, very good; so likewise were three Palms in this collection. In the 3d prize collection, from Mr. Dennis, was an unusually fine specimen of Areca sapida, and a Cycas revoluta, very healthy.

Mr. Gilbert also took the premier prize for eight Ferns, with a fine example of Adiantum farleyense, and good specimens of Cyathea dealbata, and Dicksonia antarctica, amongst others. As in the previous case, Mr. Portnell again came in a capital 2d, having a very fine Adiantum formosum.

For six Fuchsias Mr. Portnell won with ease, having a well grown and freely flowered lot among which Beauty of the West, a light coloured variety, was a striking plant.

In the class for six double Pelargoniums, Mr. Portnell, in an exceedingly close competition, succeeded in wresting the premier honours from Mr. Gilbert, both competitors showing first-class specimens of culture, the former exhibitor having Pirate very bright, Madame Thibaut, Candidissima fl.-pl. with five trusses, Madame Léon Dalroy, E. V. Raspail, and Lucie Lemoine, all freely flowered. Mr. Gilbert followed with the five latter varieties, and a fine plant of Guillon Mangilli, very fresh and healthy.

In the next class, that for single varieties, the same two exhibitors ran each other again most closely, the awards being in the same order as given above. The two collections included finely flowered examples of President Thiers, Corsair, Jules Grévy, Eurydice, and Mrs. Ward.

For a mixed collection of six flowering and foliage plants, Mr. Gilbert again took the 1st prize, and Mr. Portnell the second, the flower having compact and floriferous examples of Kalosanthes and Statice, with a good Allamanda, the latter exhibitor showing a healthy vigorous plant of Rhopala corcovadensis not seen in an exhibition tent nearly so often as it deserves to be.

A finely developed Cycas revoluta from Mr. Allen, gr. to Sir Thomas Brassey, Bart., Normanhurst, took the first prize as a foliage specimen, and a very bright example of Statice from Mr. Gilbert that for a flowering plant.

A class for six Ericas produced good competition; it is quite a treat now-a-days to see such capital examples of culture, not over large, but healthy and freely flowered. Mr. Gilbert was, however, an easy winner with a selection of the best varieties, which, as a guidance to intending growers for the autumn season, we now quote, viz., E. Exquisite, dark red, of sturdy growth; E. Aitoniana turgida, one of the best whites; E. Denisoniana, another fine white that is void of the glutinous substance on the flowers, in other respects somewhat after E. Hartnelli; E. cerinthoides coronata, a bright red; E. Fairreana, a bright pink; and E. Lindleyana, something like E. Massoni, but a far better grower. Mr. Portnell was 2d.

For six flowering plants, in the second division, the latter exhibitor again showed a capital set of plants, having finely cultivated and freely flowered examples of Ixora Williamsi with extra trusses, and Lapageria alba, the latter having very fine flowers of the purest colour. In another collection we noted a good example of Euphorbia splendens, a plant now seldom seen exhibited. Some good examples of plants for the decoration of the dinner-table were shown by Mr. F. Bishop, gr. to F. Peak, Esq., Croydon, and by Mr. E. C. Gilbert, The Old Nurseries, Brentwood, Essex.

### CUT FLOWERS.

The competition was keen in most of the classes in this department, particularly was this the case with table decorations, baskets of flowers and bouquets, and several of the unsuccessful exhibitors were highly to be congratulated on their respective productions.

In the class open to lady exhibitors only, Miss Stuart, Orwell House, St. Leonard's, was 1st, with a bold and striking arrangement. This basket was considerably larger than is generally chosen for the purpose, the handle being nearly 3 feet in height. This was draped with Passiflora cœrulea (foliage and blossoms), and the basket itself judiciously filled with appropriate flowers. In many hands such a basket would have been a failure; in this case it was a pronounced success.

Bouquets were shown in considerable numbers. The three chosen for the prizes ran each other closely, though each displayed a different style. These were from Mrs. Bishop, Messrs. Kinmont & Kidd, of Canterbury, and Mr. Gilbert.

Cut Roses were remarkably good for the season, the two best collections of twenty-four blooms coming from Mr. Slaughter, of Steyning, and Messrs. Woollard, of Cooksbridge. The former exhibitor was strong in tea-scented kinds, thus gaining an otherwise close run with his opponents.

The other Rose classes were well filled; so also were those devoted to Phlox Drummondi, Dahlias (show and fancy), Asters, Verbenas, and Gladioli, those of the latter from Mr. Thos. Bunyard, Ashford, were good in spike and selection of variety.

The stove and greenhouse cut flowers were very attractive; the two best sets of twenty-four kinds came from Messrs. Gilbert and Portnell, there being little to choose between either, the former having an advantage in quality over his opponent which carried the day.

A most attractive collection of hardy herbaceous cut flowers, pompon, single and decorative Dahlias, came from Messrs. Cheal, of Crawley; amongst the former was included good examples of Eryngium cœlestinum, Echinops retro, and E. persica, Statice incana hybrida, and Tropæolum speciosum, the latter being very good.

Mr. G. Gilbert, Queen's Avenue, Hastings, showed some well grown dwarf plants of that useful early Chrysanthemum, Madame Desgrange.

### FRUIT.

The fruit classes were well represented, Grapes being the most notable feature. For three bunches of Black Hamburgh, in the open classes, Mr. Allen was an excellent 1st with large bunches, good also in colour and berry, winning the 1st prize also for Muscats, with three good bunches. In the any other black class, Mr. Jupp, gr. to G. Boulton, Esq., Eastbourne, was easily 1st, with three splendid bunches of Madresfield Court, well coloured and free from any symptoms of cracked berries; Mr. Johnston, of Bayham Abbey Gardens, taking the 2d, with Alnwick Seedling in good condition; whilst Black Prince, which a few years back would have won without much difficulty, had to be content with the 3d place.

Cherries were finely shown by Mr. Wilson, Pluckley, Kent.

Two classes provided for Apples brought together some good examples, particularly the premier lot of dessert fruit from Messrs. Woollard, who had White Transparent, very fine; Mr. Jupp being 2d with Red Astrachan. With culinary fruit, Mr. Gilmour took the 1st, having fine samples of Lord Suffield.

Mr. Jupp was in the front with Peaches, in fine fruit of Walburton Admirable; W. Dennis 2d, with Royal George, Early Rivers being also shown in good order; the last-named exhibitor also taking 1st for Plums, with good examples of Kirke's.

### VEGETABLES.

These classes were exceedingly well filled, some high-class examples of culture being displayed.

The 1st prize for nine sorts was well won by Mr. Foster, gr. to Mr. Smith, Ore, near Hastings; he had Peas, Onions, Cauliflowers, and Celery, very fine indeed. The same exhibitor was also prominent in the other vegetable classes with excellent samples.

Potatos were in fine condition from Mr. Sutton, Hollington, and from Mr. Duke, of Battle.

The several classes allotted to amateurs and cottagers were well represented; the plants, flowers, and vegetables from the latter growers bore evidence of the excellence of their culture, particularly during such a long period of drought as we have of late experienced.

The grounds of the Alexandra Park, in which the show was held, were thronged with visitors throughout the afternoon. We also noted that Mr. Stuart, the energetic Secretary, was busy paying the prize-money, instead of leaving this important item in the programme to be gone through at some future period.

## HIGH WYCOMBE HORTICULTURAL.

THE sixth annual show of this Society was held in Wycombe Abbey Park on Wednesday, Aug. 19. A specially ornamental feature of the exhibition was afforded by the entries for the extra prizes given for groups of plants; there were five entries, and the competition was very close. The 1st prize fell to a very handsome group, consisting principally of varieties of Coleus and Begonia. Another extra prize for groups of Ferns, grasses, and mosses, brought out three entries. The other extras included specimens of table ornaments (three vases, stands, or dishes), and buttonholes—the latter competition being for ladies only. The first-named class made a capital show. The 1st prize was given to an entry which was held to have excelled the others in the lightness and natural elegance of its disposal. In the respective half-dozens gaining 1st and 2d prizes, white Roses and Tuberoses were chiefly used; in the 3d, Roses and Carnations.

In the section for plants, embracing eight classes, there was a fair competition, but nothing calling for special notice.

In Section II., for cut flowers, some very fine Zinnias, Asters, and Phloxes were shown. The Roses were also very good, the 1st prize being taken by six very handsome blooms.

Section III.—Fruit—was well-contested in nearly every subject; Grapes, especially the black varieties, deserved every praise, and some of the dishes of Peaches were very fine. Apricots were plentifully shown, though the quality was not high; Plums were good, despite the fact that some of the dishes contained unripe specimens; Cherries, Gooseberries, Currants, and Apples were uniformly good, in fact the whole show of fruit, with few exceptions, gained high praise from the judges.

So far we have spoken of the amateurs' or open classes. In the cottagers' and allotment-holders' department the

window plants were somewhat disappointing in number, only twelve plants being shown in three classes for six plants, three, and one respectively.

For vases and nosegays of wild flowers there was a close competition, somewhat less than last year, owing to the scarcity of hedgerow blossoms, but still meritorious.

Fruit.—The fruit in this portion of the show was excellent in all classes, with perhaps the exception of Green Gages, for which there was only one entry. Apples, Cherries, Gooseberries, and Currants, were on the whole the best classes.

Several exhibits included in the show were not for competition, among them a stand of show and fancy Dahlias, with a collection of bouquet and single Dahlias and Gladioli from Mr. Walker's nurseries, Thame; a lot of show Dahlias grown by Mr. Turner, Slough, including some new and very fine varieties; a stand of French Marigolds from Miss M. Coyle, Springfield; handsome Petunias and Carnations from Mr. J. Wright, Temple End; and a specimen of the curious shrub Rhus Cotinus from Mr. A. Pelly, Loudwater; a collection of field roots from Mr. C. Stone, Marsh Farm.

Turning to the Vegetables it is sufficient to say that both in the amateurs' and cottagers' classes there was a splendid show. Potatos and Onions carried off the palm, but with the exception of Peas there was no class not well represented. Much interest was shown in a collection of Potatos from Sir Philip Rose's gardens at Rayners, sent for exhibition; this included dishes of fifty-two varieties, all in the best condition, and as each was labelled with its name a valuable opportunity was afforded of comparing the merits of different kinds of this indispensable tuber.

## EXETER HORTICULTURAL.

The annual summer exhibition of this Society was held on Friday the 21st inst., in the beautiful grounds of Northernhay, by the kind permission of the Town Council. The exhibition itself was a great success. As we should be thankful for small things the committee should take courage at the slight increase of patronage accorded them on this occasion, and continue to direct their efforts in securing still more.

Messrs. Lucombe, Pince & Co., of the Exeter Nurseries, kindly lent a fine collection, arranged on a 100 feet run of staging in the centre of one of the tents, which added very materially to the attractions of the day. Their Allamandas, of which there were some half dozen specimens, were grand. Clerodendron Balfourianum, and Dipladenia Brearleyana, were also well flowered; Amaryllis, single and double Begonias, with a fine background of tall Palms, and smaller ones interspersed in the collection formed a very pleasing display The same firm exhibited five boxes of cut flowers of the following kinds:—Carnation, herbaceous, Phloxes, Phlox Drummondi, French and Victoria Asters, &c.

Messrs. Veitch and Son, of Exeter, also contributed a very choice collection of plants, including a very fine lot of new double Begonias, Liliums in variety, boxes of very fine double Hollyhocks, which are now rarely seen and quite a treat to see; also boxes of Roses, Carnations, single and double Dahlias, &c.

### Plants

were exhibited in good form, as usual. Mr. Lock, gr. to W. B. Clease, Esq., Newcombe, Crediton, took 1st for ten stove and greenhouse plants in flower, his principal specimen being Erica Fairrieana, Allamanda nobilis, Dipladenia australis, Erica æmula, Ixora Duffi (nearly twenty heads of bloom), a grand plant; Clerodendron Balfourianum, &c., all splendidly flowered; Mr. Rowland, gr. to W. Brock, Esq., Parker's Well House, Exeter, took 2d with a very creditable lot of plants.

For six stove and greenhouse plants in flower, Mr. Teed, gr. to Mrs. Ensor, was awarded 1st honours.

Mr. Lock again secured 1st prize for nine stove and greenhouse foliage plants with Thrinax elegans, Alocasia Thibautiana, Cycas revoluta, a magnificent specimen; Gleichenia rupestris glauca, Croton Warreni, finely coloured, Kentia Fosteriana and Belmoreana, two beautiful specimens Croton Truffautianus and Croton Williamsi; Mr. Rowland again taking second place with a very nice collection indeed, consisting of a fine Thrinax elegans, Areca rubra, Croton Disraeli and Andreanus, &c.

Mr. Lock was again an easy 1st with a capital collection of nine stove and greenhouse Ferns, including Gleichenia speluncæ, 6 feet in diameter; Davallia polyantha, 8 feet diameter; D. Tyermanni, and Mooreana, 8 feet; Nephrolepis davallioides furcans, Gleichenia rupestris glaucescens, and Adiantum cardiochlæna and trapeziforme.

For miscellaneous groups of plants arranged for effect on a stage 25 feet by 5 feet, Mr. Rowland succeeded in taking 1st, with a very beautiful collection indeed, consisting of fine Cocos Weddelliana at back, with some splendid bits of Dipladenia amabilis, D. hybrida, and D. Brearleyana, Oleanders, Valotta purpurea, single and double Begonias, Liliums in variety, with small plants of Cocos Eulalia japonica variegata, Cyperus alternifolius variegata interspersed; the whole with a front of Panicum variegatum, Ferns, &c.

For miscellaneous groups of plants on a stage 15 feet by 5 feet, Mr. Teed was awarded 1st, with a very pretty collection, including, besides Palms, Liliums, Eucharis, Gloxinias, Ericas in variety, Valottas, &c., and was very tastefully arranged.

For six Fuchsias, Mr. J. Staddon was 1st.

For six Lycopodiums.—Mr. A Truman.

For twelve Gloxinias.—Mr. Staddon, who had a very fine collection.

In the class for twelve British Ferns, Mr. Mollon was awarded 1st; and in that for six hardy exotic Ferns, Mr. Mollon was 1st.

Six Cockscombs.—1st, Mr. Mollon, who had very fine heads of bloom nearly 18 inches across.

In the class for nine tuberous rooted Begonias, Mr. Counter and Mr. Rowland were placed equal 1sts, both staging excellent plants; and for six zonal Pelargoniums (single), Mr. Staddon scored 1st honours.

### Cut Flowers.

Messrs. Curtis, Sandford & Co., Torquay, were 1st with a beautiful box of Roses.

Mr. J. Nation, Taunton, was 1st, with very fine fresh blooms of forty-eight Dahlias.

J. Dobree, Esq., Taunton, was 1st, with a very fine lot of forty-eight Gladioli, but not so good as usual, no doubt owing to the dry season.

### Fruit.

Fruit was quite a special feature of the exhibition, especially Grapes, 137 bunches being staged, and each one a credit to the exhibitor.

For a collection of fruit, ten dishes distinct, four competitors entered the lists, all putting up fine collections, and running each other very close.

For six varieties of Grapes, one bunch of each, six competitors entered for competition, and here the contest was very keen. Mr. J. Westcott was eventually declared the winner of the 1st prize, though his collection was considered by many competent to judge not the best. He had Madresfield Court and Lady Downe's, fine bunches, but not coloured well; Alnwick Seedling was good; Golden Champion and Duke of Buccleuch fine in bunch and berry, and ripe; Duchess of Buccleuch rather overripe. Mr. Ward, gr. to Earl Radnor, was placed 2d. He had a fine collection—Gros Maroc, medium size bunch; Madresfield Court, good; Foster's Seedling, and Muscat of Alexandria, fine bunches and berries, but not quite ripe; Black Prince and Alnwick Seedling, fine bunches and well coloured. Mr. James, gr. to Sir J. Walrond, Bradfield, was awarded an extra prize, with a very fine lot of bunches indeed, Alnwick Seedling and Black Alicante being especially good.

The 5-guinea Cup, given by R. J. Veitch & Sons, nurserymen, Exeter, was won by Mr. Ward, gr. to Earl Radnor, Longford Castle, Wilts; 2d, Mr. Powell, gr. to the Earl of Devon, Powderham Castle.

The classes for single dishes of three bunches each were numerously contested.

Three Black Hamburghs.—1st, Mr. J. Langworthy, gr. to P. Benmore, Esq., Exmouth, who had one very large bunch, the largest in the exhibibition, and two smaller ones, but were not well coloured; Mr. James took 2d, with three fine even bunches, good berries, and well finished and deserving of more notice by the judges.

Three bunches of Muscats.—1st, Mr. Stevens, gr. to C. D. Cave, Sidbury Manor, Sidmouth, fine bunches; 2d, Mr. Barnes, with equally fine bunches, but thinned rather too much.

Three bunches any other sort, black.—1st, Mr. Stevens, with fine examples of Alnwick Seedling.

Three bunches any other sort, white.—1st, Mr. Ward, with three perfect bunches of Buckland Sweetwater, weighing together 12¼ lb.; 2d, Mr. Barnes, same variety.

Nine Peaches.—1st, Mr. James, with Crawfurd's Early.

Nine Nectarines.—1st, Mr. Seeward, gr. to Sir H. Davie, Creedy Park, Crediton.

Melon, Green-flesh.—1st, Mr. Seeward, with Hero of Lockinge.

Melon, Scarlet-flesh.—1st, Mr. Mairs.

Nine Apricots.—1st, Mr. Mairs.

Nine Figs.—1st, Mr. B. C. Gidley.

Nine Pears—1st, Mr. Geeson, with Beurré Giffard.

Nine Apples, dessert.—1st, Mr. Mairs; 2d, Mr. Teed.

Nine Apples, kitchen.—1st, Mr. Underdown, gr. to Sir John Kennaway, Escot, with Lord Suffield.

Twelve Plums, yellow.—1st, Mr. Powell.

Twelve Plums, dark.—1st, Mr. Lang, gr. to Lord Poltimore.

One pound of Cherries.—1st, Mr. Powell.

One pound of Red Currants.—1st, Mr. Powell.

One pound of White Currants.—1st, Mr. Powell.

### Vegetables.

These were excellent, also numerously contested. The prizes offered by Messrs. Lucombe, Pince & Co., for collections of twelve distinct kinds, brought six competitors, each showing superb collections. Mr. Sparks, gr. to A. Barnett, Esq., Tiverton, highly deserved the 1st prize awarded to him; he staged splendid Autumn Giant Cauliflower, International Kidney Potato, Goldfinder Peas, Wright's Grove White Celery (remarkably good sticks), Tender and True Cucumber, Snowball Turnip, Golden Globe Onion, Long White Marrows, Student Parsnips, Dedham Favourite Tomato (a beautiful dish), Improved Intermediate Carrot, and an exceptionally fine dish of Scarlet Runners. Mr. Leach took 2d, with a very good collection indeed, his best dishes being Girtford Giant Runner Beans, Red Globe Turnip, Duke of Albany Peas, Sulham Prize Celery (very fine), Hathaway's Excelsior Tomato, International Potato, the Improved Intermediate Carrot, and Carentan Leeks (very fine). 3d, Mr. H. Payne, gr. to Colonel Troyte, Huntsham.

### Honey.

Best six 2 lb. sections.—1st, Mr. Geeson.

### Table Decorations.

These were not competed for so strongly as formerly, Miss Osmond taking 1st, Mrs. Sander 2d—being confined to ladies only.

## A COTTAGERS' SHOW.

It was indeed a surprise at Earley the other day, after noting the excessively dried up aspect of pastures and the apparent suffering of the trees, to find, in the tents set apart in the pleasure grounds of Earley Court, the residence of Captain Hall, and which overlook Reading, a display of cottagers' garden produce, the which, for the season can only be termed remarkable. How it happens that with almost every one complaining of being burnt up, and crops of all kind failing, cottagers in any locality should seem to be so much better off than even private gardeners, can only be explained by the presumption that in their small gardens watering is not an absolute impossibility, and that some either have specially favoured soils, or else trench deeply. At any rate, there could have been seen hardly a severer test of good culture than was found in the singularly perfect and clean samples of the new Intermediate Carrots, about 10 inches long, tapering, and really beautiful. Then there were also some first-class Parsnips as good as good be wished for, although some others, if clean and straight, are conclusive evidence of the severe struggle they had had with the hard-baked soil. Potatos were shown in collections, and in four single dish sections, and in two divisions, and consisted of many scores of plates. These were all, for the season, excellent, and raised doubts whether the reported drought was not after all illusory. There were good Peas, Cabbages, Runner Beans, Onions, really beautiful Celery, and other good vegetables—as good indeed as could be looked for from cottagers anywhere.

Plants, too, are capitally done around Earley, especially Fuchsias, and there seems to be no lack of garden flowers also. The local Society is favoured by having active officials, and numerous parks and gardens in which to hold their annual exhibitions, and it is plainly evident that it is exercising a good influence upon the cottagers of the district.

## CHERRIES UNDER GLASS.

Your correspondent "Cerasus" desires information as to the cost of cultivating Cherries under glass. Although I have for nearly twenty past years grown these in this way very successfully, still I am unable to answer his question in a definite way, simply on account of the produce not being marketed; but if the price, "namely, 10s. per pound," which an eminent fruiterer in Covent Garden Market has allowed me on several occasions early in the month of May, when at his request I have obliged him with a few pounds of them, may be taken as a fair estimate of their value in the market at that date I have no hesitation in affirming, after duly considering the cost of production, that this is a crop that would be remunerative. For this object I should neither grow the plants in pots nor ripen them at their natural season, but, on the contrary, resort to the more natural process of planting the trees in suitable and properly made borders, and train them in the house in a similar way to Peach trees, and, above all, have Cherries ripe and fit for market as early in May as possible, as at this period, owing to the foreign supply not being in an abundance, and from the superior flavour of English as compared with foreign ones, there would doubtless be a fair demand in the market for them at a remunerative price.

The second question, as to the distinctive features on this subject, which, above others, fits it for house cultivation, I consider to be its adaptability for the purpose. Secondly, the small relative cost involved in the operations; and thirdly, of the advantage obtained in having a most luscious kind of fruit ripe and fit for use at a period of the year at which, above all others, it is much required. With these reasons I concur with your correspondent, "Cerasus," and further add, by all means have a Cherry-house as well asa Peach-house.

I have for many years past advocated the erection of Cherry-houses, and at different times furnished in my papers upon this subject full details under which a crop of them may with certainty be secured every year, and to show, not in an individual case, their longevity in houses, I may add that now I am "very reluctantly, through age and exhaustion," about to remove an old favourite tree, a Black Circassian of eighteen years' standing, which covers a surface of trellis of 12 by 16 feet, the fruit from which has carried me through many a contest safely.

The cultivation of Cherries in pots is a very interesting method of culture by which capital crops of Cherries can be secured for commercial purposes. However, the plan is not so simple or safe, because, unless the management is entrusted to experienced and skilful hands, the risk of failure, especially from injudicious, or neglect in, watering, which makes it palpably greater than under more natural conditions of planting out. *G. T. Miles, Wycombe Abbey.*

## NEW HOLLAND PLANTS AT KEW.

It is generally understood that the first New Holland plants introduced to this country were due to the voyage of Captain Cook between the years 1768 and 1780, who was accompanied on his first voyage by Mr. (afterwards Sir Joseph) Banks as naturalist and botanist. The number recorded in Aiton's *Hortus Kewensis* is, however, few. The next introductions were due to the voyages of Captain Vancouver, who was accompanied by Archibald Menzies as surgeon and botanist. The ship touching at King George's Sound afforded Menzies the opportunity of collecting seeds of many new plants, which were transmitted to Kew in 1794, and considerably increased the collection, especially in Proteaceæ. The next introductions were due to the voyage of Captain Flinders, who surveyed the coast of New Holland, accompanied by Robert Brown as botanist, and Peter Good, a young gardener, as assistant and seed collector. By their labours great additions were made to the Kew collection—Good's dated 1803, and Brown's 1805.

The next special collector was George Caley, a professional horse doctor, who became interested in botany through collecting plants for his horse medicine. He became known to Sir George Banks, who in 1801 appointed him botanical collector in New South Wales for Kew. He remained about ten years in the colony, botanising chiefly in the country about Sydney and the Blue Mountains, and a considerable number of plants were introduced by him. The above introductions and a number introduced by Messrs. Lee & Kennedy, of the Hammersmith Nursery, and a few by private individuals, are all recorded in the second volume of the *Hortus Kewensis*, 1813-14, the total number being 350.

In 1814 James Bowie and Allan Cunningham were appointed botanical collectors for Kew. After spending two years in Brazil, they parted, Bowie proceeding to the Cape of Good Hope, and Cunningham to New South Wales. Arriving at Sydney, 1816, during part of that time he accompanied Capt. King in four voyages of survey of the coast of New Holland; after this he not only botanised in all parts of the Sydney district, but also into the interior, over the Blue Mountains, and visited Moreton Bay and Norfolk Island. By these voyages and journeys he made large collections of herbarium specimens and seeds, and sent many cases of living plants to Kew. At that time Australian plants were much patronised by amateur collectors, which led the proprietor of the Clapton Nursery (which had just been established) in 1823 to despatch William Baxter to Australia as seed collector for that establishment. On arriving at Sydney he hired a vessel to convey him to King George's Sound, where he made large collections of seeds, especially Proteaceæ, and through this the Clapton Nursery became famed for Australian plants.

He made a second voyage from Sydney to King George's Sound and Lucky Bay, and made large collections of seeds, which by purchase became the property of Mr. Knight, the nurseryman at King's Road, Chelsea, whose establishment for a short time was famed for Australian plants. From both these establishments collections of the new plants were presented to Kew.

In 1828 the Swan River Colony was founded, and Captain Stirling was appointed Governor. He took with him William Morrison, a gardener, from Kew, who became a seed collector, and forwarded collections to this country for sale. Other collections were from time to time made in that colony, the principal being made by James Drummond, a trader, who forwarded many collections to this country for sale. By the above means and other sources the Kew collection became greatly increased.

In 1823 the whole of the collections came under my charge, and the introductions of Allan Cunningham and those above mentioned were raised and cultivated by me up to 1864, the collection at that date numbering 1037 species, of which a large number were figured in the *Botanical Magazine*, and other horticultural periodicals of the day. Among them were:—

| | Species. | | Species. |
|---|---|---|---|
| Anadenia .. .. | 1 | Isopogon .. .. | 14 |
| Banksia (about) | 40 | Lambertia .. .. | 4 |
| Bellendena .. .. | 2 | Lomatia .. .. | 4 |
| Conothamnus .. .. | 1 | Persoonia .. .. | 5 |
| Conospermum .. .. | 3 | Petrophila .. .. | 4 |
| Dryandra .. .. | 17 | Stenocarpus .. .. | 3 |
| Grevillea .. .. | 9 | Telopea .. .. | 1 |
| Hakea .. .. | 9 | Xylomelum .. .. | 1 |
| Hemiandra .. .. | 1 | | |

Of the above list sixty-four species were recorded prior to the publication of Aiton's *Hortus Kewensis* in 1814. In 1823 they were with the general collection of greenhouse plants grown in two lean-to houses Dr. Lindley in his report laid before Parliament in 1840, says:—"A Botany Bay house, 110 feet long, crowded with magnificent specimens of New Holland and other plants, especially the former, and a greenhouse (Cape-house), 60 feet long, chiefly filled with specimens of Cape of Good Hope and New Holland plants, among which are some noble Banksias." Consequent on the stage arrangement of these houses none of the plants could exceed 6 feet high, and the largest pots they were grown in were 20 inches to 2 feet. In 1848 the house called No. 1 Conservatory became empty, consequent, on the removal of its contents to the Palm-house, and they were succeeded by a collection of Proteaceæ (Australian and Cape) and other tall-growing plants. From year to year they increased in size. By 1862 many of the Banksias and Myrtaceæ were growing in boxes 3 feet to 4 feet square; many of the Banksias and Dryandras having become large plants and flowering abundantly, of which the following are the sizes of a few of the principal:—Banksia australis, height 24 feet; girth of stem, 2 feet 5 inches; spread of branches, 12 feet; aged 40 years. B. integrifolia, height 22 feet; girth of stem, 2 feet 6 inches; spread of branches, 12 feet; aged 40 years. B. compar, height 23 feet; girth of stem, 1 foot 3 inches; spread of branches, 7 feet; aged 27 years. B. Solandri, height 20 feet; girth of stem, 1 foot; spread of branches, 13 feet; aged 29 years—a grand plant, the only specimen in Europe. B. serrata, height 18 feet; girth of swollen base, 2 feet; spread of branches, 10 feet; aged 40 years. B. spinulosa, height 6 feet; girth of stem, 1 foot 3 inches; spread of branches, 4 feet; aged 35 years. B. Cunninghamii, height 16 feet; girth of stem, 1 foot 8 inches; spread of branches, 15 feet; aged 38 years. B. ericifolia, height 10 feet; girth of stem, 1 foot 6 inches; spread of branches, 6 feet; aged 35 years. B. latifolia, height 12 feet; several stems; aged 35 years; B. elatior, height 12 feet; B. Caleyi, height 9 feet. B. littoralis, height 8 feet, spreading, aged 40 years; B. media, height 5 feet, thick bush, spread of branches 4 feet, aged 38 years; B. grandis, height 10 feet, girth of stem 1 foot 6 inches, aged 38 years; B. Baueri, height 4 feet, bushy, aged 38 years; B. repens, stem creeping, producing stiff Fern-like leaves 15 inches in length, aged 62 years.

Dryandra.—The larger growing species of Dryandra were bushy plants, 3—5 feet high. The dwarf species were represented by D. senecifolia, D. obtusa, D. pteridifolia, and D. nervosa, the latter being almost stemless, forming a compact hemisphere of rigid leaves, 3 feet high and 3 feet in diameter, being 38 years old. Grevillea robusta, the original plant, 13 feet high, 34 years old; Stenocarpus Cunninghami, height 10 feet, 33 years old.

With the exception of Bellendena montana and Cenarrhenes nitida, Grevillea Banksii and gibbosa, the whole of those in the list were in the garden in 1862. In the autumn of that year the Proteaceæ and the whole of the collection of greenhouse plants were removed to the new conservatory in the pleasure-grounds, but as this was beyond my jurisdiction as Curator of the Botanic Garden, I never saw the plants again. I have, however, learnt that, in consequence of the different treatment they were necessarily subjected to, most of the Proteaceæ died, and few remain. *J. Smith, Ex-Curator, Royal Gardens, Kew.*

## SEED RAISING.

Temperature.—The extremes of cold and heat which seeds are known to bear without any loss of vital energy, although not without interest to horticulturists, need not be gone into here; those conditions which are most favourable only being of direct interest to us at present. It is not always safe to turn to Nature for information on how plants may be best managed under artificial conditions. If we could be sure that a certain natural method was the best that Nature employs, then probably to follow her would be our wisest course. But Nature, like gardeners, has often to have recourse to makeshift plans. Plants are found growing under conditions which do not more than supply the barest necessaries of existence. There are numerous instances on record of gardeners having been led astray through copying what appeared to be Nature's plan for the management of certain plants. Orchids have been found growing on the ground in moist shaded forests, and it was, therefore, assumed that an imitation of those conditions would be most suited to the plants when cultivated in our houses. It was, however, afterwards discovered that the plants found on the ground had been blown down or otherwise removed from their more favoured position on the tops of the trees, where they were exposed to the fierce action of an equatorial sun. In like manner seeds are found germinating in all sorts of untoward situations. If we consider for a moment how various must be the conditions in which the seeds of plants are placed in a wild state, how they become widely disseminated through the agency of birds, water, wind, &c., it is easy to see how mistakes might be made if we were to be guided in our treatment of plants by our knowledge, often only very fragmentary, of how they sometimes exist in Nature.

Nature is a safe guide when we really understand her. In the case of the Orchids above-mentioned she showed us the best treatment for the plants. It was the misjudgment of her imitators that led them to look upon the *first* conditions under which the plants were found as the most suitable. Mistakes of this kind are only made when the plants are new and their nature unknown. The majority of cultivated plants, for the reproduction of which seeds are relied upon, are well enough understood to prevent errors of treatment. It may be laid down as a general rule to be observed in the treatment of all seeds, that the temperature most suited to their germination and vigorous development should never be below the mean ground temperature in which the plant grows naturally, but if possible should exceed it by several degrees. Many seeds will germinate, though very slowly, in a lower temperature than is good for them. A high temperature will, on the contrary, force all seeds into quick activity. Thus Peas, Beans, and numerous other seeds of quick-growing herbaceous plants which grow out-of-doors with us, will in a temperature of 80° germinate in about one-sixth the time they take when sown in a more natural temperature. With proper care, a degree of heat much in excess of what would prove sufficient may be applied to seeds and plants, often to their advantage. The limits of high temperature for plants are not so strictly defined as the lower limits of temperature are. It is possible that plants do not object so much to extreme heat as to extreme cold, a possibility explained by physiological laws. For horticultural purposes a high temperature often proves of service in the raising of plants from seeds. By sowing seeds of hardy plants and trees in a stove temperature, much time is saved, without any injury to the seedlings resulting. A high temperature will induce old seeds to germinate, which in a lower or more natural temperature would not be excited into growth. "Trial" seeds of vegetables, Wheat, &c., when sown in a warm house to test their health have germinated satisfactorily, but seeds of the same sample when sown out-of-doors remained inactive. Their vital force had become weakened by some cause or other, and it was only under the exciting influences of a high temperature that this could be remedied, and the seeds made to germinate.

The application of unusual warmth sometimes fails to excite into germination seeds which require to lie dormant for some time, or which do not mature until some months after they have ripened. Thus Acorns, Chestnuts, and other seeds of hardy trees were sown last autumn in a warm house, but refused to germinate, although they remained healthy and apparently uninfluenced by the warmth. Lilium seeds, which out-of-doors often take from one to two years after sowing before they germinate, will, when sown in a warm house, be forced into growth in about three months. On the other hand, some kinds of seed will germinate much more quickly if sown just before they are ripe than if allowed to mature before being sown.

In all cases, however, a moderately high temperature will be found a useful factor in the raising of plants from seeds, and especially when applied to old seeds or those of questionable health. For seeds of tropical plants a temperature of 80° will be found suitable in every case; seeds from temperate climes will germinate freely in a temperature of 65°; those of hardy plants may be sown out-of-doors or in frames in the season at which they would naturally germinate. Where it is found convenient to employ a higher temperature for seeds than they naturally

require, some care is necessary after germination has taken place, as, although the excessive heat is productive of good in so far as quick germination is desired, it would have an injurious effect on the health of the seedlings if they were allowed to remain in a high temperature too long. As soon, therefore, as they are strong enough, they should be gradually hardened off till brought into the temperature most suited to them.

Reference may here be made to the effects of climate on the characters of cultivated plants, and especially of those varieties which are the result of cultivation. Numerous facts are on record, tending to show that such plants often owe their most important characters to changes in the conditions of life, and amongst these climate is a great modifier. Varieties of Asters, Stocks, and Roses, as well as of numerous vegetables, which have originated with Continental growers, often lose the character for which they were distinguished after having existed for a time in English gardens. For hardy plants, therefore, it will be advisable to obtain seeds only from those countries whose climate corresponds with our own. *W. Watson, in "Cassell's Popular Gardening."*

*(To be continued.)*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,* FOR THE WEEK ENDING WEDNESDAY, AUGUST 26, 1885.

| Month and Day | Barometer: Mean Reading at 32° Fahr. | Barometer: Departure from Average of 18 years | Temperature of the Air: Highest. | Lowest. | Range. | Mean for Day | Departure of Mean from Average of 39 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point. | Degree of Humidity. Sat = 100. | Wind: Average Direction. | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 20 | 29.72 | −0.08 | 65.2 | 51.3 | 13.9 | 55.9 | −4.9 | 48.3 | 76 | N. | 0.17 |
| 21 | 29.68 | −0.13 | 61.9 | 52.2 | 9.7 | 55.3 | −5.4 | 49.8 | 82 | N.W. | 0.00 |
| 22 | 29.66 | −0.16 | 61.9 | 51.5 | 12.4 | 55.4 | −5.3 | 52.1 | 89 | W.NW. | 0.02 |
| 23 | 29.73 | −0.10 | 62.5 | 49.3 | 13.2 | 55.7 | −5.0 | 49.6 | 83 | W.NW. | 0.00 |
| 24 | 29.81 | +0.01 | 69.2 | 48.0 | 21.2 | 58.7 | −1.9 | 50.2 | 73 | W.NW. | 0.00 |
| 25 | 29.85 | +0.01 | 72.5 | 47.0 | 25.5 | 59.9 | −1.5 | 48.6 | 68 | E. | 0.00 |
| 26 | 29.83 | −0.01 | 71.3 | 50.7 | 20.6 | 59.3 | −1.1 | 52.9 | 78 | E | 0.00 |
| Mean | 29.76 | −0.07 | 66.6 | 50.0 | 16.6 | 56.9 | −3.7 | 50.2 | 78 | Variable. | 0.19 |

Aug. 20.—Dull morning, fine and bright from 12.30 P.M. to 1.30 P.M., thunderstorm from 2 P.M. to 2.40 P.M., fine afterwards.
" 21.—Dull day, fine about 5 P.M.
" 22.—Rain in early morning, dull day, fine night.
" 23.—Dull day, fine clear night.
" 24.—Fine day, very fine clear night.
" 25.—Fine bright day, very fine clear night.
" 26. Fine day, bright mostly, windy.

LONDON: *Atmospheric Pressure.*—During the week ending August 22, the reading of the barometer at the level of the sea increased from 30.26 inches at the beginning of the week to 30.31 inches by 9 A.M. on the 16th, decreased to 30.05 inches by 5 P.M. on the 17th, increased to 30.13 inches by 9 A.M. on the 18th, decreased to 29.83 inches by 5 P.M. on the 21st, increased to 29.86 inches by 9 A.M. on the 22d, decreased to 29.81 inches by 1 P.M. on the 22d, and was 29.84 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.02 inches, being 0.03 inch higher than last week, and 0.04 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 77°.5, on the 17th, and on the 21st the highest was 61°.9. The mean of the seven highday temperatures was 67°.7.

The lowest temperature was 47°, on the 19th; on the 18th the lowest temperature was 55.°5. The mean of the seven low night temperatures was 51°.3.

The greatest range of temperature in one day was 26°.7, on the 17th; the smallest on the 21st was 9°.7 The mean of the seven daily ranges was 16°.4.

The mean temperatures were—on the 16th, 63°; on the 17th, 63°.1; on the 18th, 58°.5; on the 19th, 53°.9; on the 20th, 55°.9; on the 21st, 55°.3; and on the 22d, 55°.4; of these, the 16th and 17th were above their averages by 1°.6 and 1°.9, respectively, and the rest were below by 2°.5, 7°, 4°.9, 5°.4, and 5°.3, respectively.

The mean temperature of the week was 57°.9, being 1°.3 lower than last week, and 3°.1 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 127°, on the 16th. The mean of the seven readings was 104°.5.

The lowest reading of a minimum thermometer placed on grass was 34°.7, on the 19th. The mean of the seven readings was 40°.3.

*Rain.*—Rain fell on two days to the amount of 0.19 inch.

ENGLAND: *Temperature.*—During the week ending August 22, the highest temperatures were 78°.9 at Cambridge, 78° at Truro, 77°.5 at Blackheath; the highest at Liverpool was 66°.9, at Newcastle 67°, at Preston 67°.5 The general mean was 73°.1.

The lowest temperatures were 40°.4 at Bolton, 41°.2 at Wolverhampton, 42° at Truro and Hull; the lowest at Newcastle was 49°, at Nottingham 48°, at Sheffield 47°.5, The general mean was 45°.2.

The greatest ranges were 36°.4 at Cambride, 36° at Truro, 32° at Hull; the least ranges were 18° at Newcastle, 19°.9 at Liverpool, 21°.5 at Preston. The general mean was 27°.9.

The mean of the seven high day temperatures was highest at Truro 73°, at Plymouth 70°.5, at Cambridge 70°.; and was lowest at Newcastle, 60°.5, at Sunderland 61°.7, at Sheffield 63°.3. The general mean was 66°.

The mean of the seven low night temperatures was highest at Liverpool, 52°.5, at Leeds 51°.4, at Blackheath, 51°.3; and was lowest at Truro, 44°.6, at Wolverhampton 47°, at Bolton 47°.5. The general mean was 49°.5.

The mean daily range was greatest at Truro 28°.4, at Cambridge 22°, at Plymouth 20°.4; and was least at Newcastle, 9°.8, at Sunderland 11°, at Liverpool 12°.4. The general mean was 16°.5.

The mean temperature was highest at Plymouth, 58°.6, at Leeds 58°, at Blackheath 57°.9; and was lowest at Hull and Newcastle, 53°.8, at Preston 54°.2. The general mean was 56°.

*Rain.*—The largest falls were 0.70 inch at Hull, 0.65 inch at Nottingham, 0.31 inch at Cambridge and Sheffield; the smallest falls were 0.04 inch at Preston, 0.06 inch at Brighton and Bradford. No rain fell at Truro or Plymouth. The general mean fall was 0.20 inch.

SCOTLAND: *Temperature.*—During the week ending August 22, the highest temperature was 77°.1 at Paisley; at Aberdeen the highest temperature was 65°.6. The general mean was 42°.

The lowest temperature in the week was 37°.3, at Glasgow; at Aberdeen and Greenock the lowest temperature was 45°.2. The general mean was 42°.

The mean temperature was highest at Paisley 59°.1; and lowest at Aberdeen, 55°.3. The general mean was 57°.1.

*Rain.*—The largest fall was 0.06 inch, at Aberdeen; the smallest fall was 0.02 inch, at Edinburgh. The general mean fall was 0.02 inch. No rain fell at Glasgow, Dundee, Greenock, Paisley, and Perth.

JAMES GLAISHER F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Aug. 24, 1885; issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been again fine and bright over the south-western parts of the kingdom, but generally cloudy or dull elsewhere. Some heavy showers were experienced over England between the 20th and 22d, accompanied by thunder and lightning; but in most places the amount of rain was very slight.

*The temperature* has been about equal to the mean in Ireland, but below it both in England and Scotland, the deficit over eastern, southern, and central England amounting to 4°. The maxima, which were generally registered either on the 23d or 24th, ranged from 65° in "Scotland, N.," and 69° in "England, N.E.," to 75° in "Ireland, S.," and 76° in "England, S.," and "England, S.W." The minima were recorded at most stations on the 19th, when the thermometer fell to 36° in "England, E.," and "England, N.W.," and to between 37° and 44° in all other districts excepting the "Channel Islands," where the thermometer did not sink below 52°.

*The rainfall* has been slightly in excess of the mean in "England, E.," but less elsewhere, the fall in most places being scarcely appreciable.

*Bright Sunshine* shows a decided decrease in most of the English and Scotch districts, but not elsewhere; the percentage of the possible duration varied from 14 in "England, N.E.," and 24 in "England, E." and "England, S." to 40 in "Scotland, E.," 68 in "Ireland, S.," 70 in "England, S.W." and 74 in the "Channel Islands."

*Depressions Observed.*—The only depressions observed in our neighbourhood moved in a south easterly and southerly direction, over Scandinavia, Denmark, and the Netherlands, while over our islands the conditions were generally anti-cyclonic. Light or moderate northerly winds were consequently prevalent during the greater part of the week; on the 20th and 21st, however, they blew freshly on our eastern coasts, while at the close of the period very light and variable winds were reported.

# Variorum.

WHO IS THE LARGEST STRAWBERRY GROWER IN KENT?—Such was the nature of a query which came to hand a few days ago, with a request that we (*Illustrated Gardening World*) would furnish the most reliable information. Our old friend, Mr. Henry Cannell, who resides at Swanley, in the very midst of the Strawberry gardens, tell us that Messrs. H. & E. Vinson, Swanley, are unquestionably the largest growers of Strawberries in the world, and they are at present much too busy to know the exact quantities they have sent away this year, but they despatched 15,000 peck sieves to commence with. It is computed that they grow 500 acres of Strawberries, and probably pick something like 1000 tons. Mr. Cannell states that he has often seen ten and twelve Midland and Great Northern vans in Swanley Station loading fruit, most of which goes to the great northern towns. These vans take the pickings of the early part of the day, and they are despatched early in the afternoon. They employ about 300 pickers resident in the parish of Swanley, and they employ about 1000 altogether. Any one walking through the Strawberry fields at the time picking is in full swing will find the pickers living in tents set up round the sides of the fields, making a journey to the localities for the purpose, just as the Hop-pickers do in the autumn. At the present time a good deal of the fruit is made into jam on the spot. What a prodigious industry is the Strawberry trade while it lasts! And it is singular to note that so much of it is comprised in that fertile part of Kent known as the Cray Valley.

COCA.—We learn from the *Planters' Gazette* that it seems very probable that the preparation of Coca leaves will before long form an important industry both in India and Ceylon. The plant (Erythroxylon Coca) grows well in Malabar, and is easily propagated by seeds and cuttings, while a sample of the dried leaves sent home by Messrs. Hinde & Co., Calicut, was valued at 10*s.* a pound, and a consignment sent by Dr. Trimen from the botanical gardens at Peradeniya, was valued at 13*s.* a pound. At present the supply of Coca leaves sent to the market is, for the most part, of very low quality, as sufficient care is not taken in drying and packing them. The leaves ought to be treated with as much care as Tea, or even more, for cocaine, the active principle in the leaves, is very easily decomposed. A brisk demand for the seed has sprung up in Ceylon, but complaints are made that supplies obtained from the Peradeniya garden have failed to germinate. We happen to know, however, that a packet of seed from that source received in this country proved very successful. From what Dr. Trimen says in his last report it is evident that there is in Ceylon already a closely allied species growing wild, Erythroxylon monogynum, and we would suggest that samples of the leaves of this plant should be sent home to Messrs. T. Christy & Co. for examination. Dr. Trimen says that the leaves are strikingly like those of E. Coca, and it is interesting

to note that in South India they were largely used as food by the poor during one of the late famines, as recorded by Dr. Bidie. They may possibly contain cocaine.

## Answers to Correspondents.

BULBS, CALCEOLARIA *Y. U.* We are afraid you will have a difficulty in finding a substitute. The dwarf yellow Lagetes is very useful, and early in the season some of the yellow Pansies.

BOOKS, DINNER TABLE DECORATION *Y. B. S.* There is a chapter on the subject in Burbidge's *Domestic Horticulture* (Blackwood), but we do not know of any separate book on the subject.

CUCUMBERS *Pitfield.* Your Cucumbers are affected with the root-worm so often described and figured in these columns. Burn your plants, turn out the soil, and begin afresh.

NAMES OF PLANTS *H. H.* The so-called Viburnum variegatum is Spiræa opulifolia. *C. H.* Lysimachia vulgaris, Polygonum persicaria, Caltha palustris, yellow; Cirsium arvensis, white-flowered variety *Landeo* 1, Centaurea nigra; 2, Thalictrum flavum; 3 Cephalanthera latifolia, so far as we can tell without leaves; 4, Phlomis fruticosa. *S. M. D.* Hedychium Gardnerianum. One of the ginger-wort family, remarkable for their beautiful Orchid-like flowers and aromatic properties. Ginger and Cardamoms belong to the order. Stove treatment or even a greenhouse will otherwise not be kept out. *W. Burn.* Ornithogalum luteum. It was figured in GARDENERS' CHRONICLE, p. 736, in 1883. *J. G.* 1, Viburnum Opulus; 2, variegated Sycamore; 3, the wild form of the cultivated Swedish Rose. Of course it is not a Rose!—*W. M.* 1, Hemizonia pungens; 2, Eriocaulon Pollichii was the plant for which the Horticultural Society many years ago gave a Gold Medal, which discovered to be a new British plant! *G. B.* Lapidendrum campylostachys. *J. D. P.* Spiræa Lindleyana. *W. P.* 1, Anemone nemorosa vulgaris; 2, Clematis Siebold; 3, a variety we cannot name. *G. Moss.* Lomeria Lechbourn. *J. U.* Lysimachia nummularia. *J. B.* Rodriguezia suaveolens.—*Ullet Road.* Cattleya Gaskelliana.

PLANT *H. T.* 1, Commelyne Tamy; 2, Windsor.

REMOVAL OF SHEDS, &c. *C. B.* Your question is an intricate one, which a lawyer only could answer. Probably the best way would be to arrange matters, if you can, with your landlord.

### CATALOGUES RECEIVED.

SKIRLEY & HAWKINS, High Street, Stockton-on-Tees—Dutch Flower Roots, &c.

W. PAUL & SON, Waltham Cross—Bulb Catalogue.

CLARK, BROS. & CO., 60, Scotch Street, Carlisle—Spring Flower Roots.

KENT & BRYDON, Darlington—Flowering Bulbs, Roses, &c.

B. S. WILLIAMS, Paradise Nursery, Holloway—Catalogue of Bulbs, Fruit Trees, Roses, &c.

JAMES VEITCH & SON, Kings Road, Chelsea—Hyacinths, and other Bulbous Roots.

LIVERPOOL HORTICULTURAL CO., Garston, near Liverpool—Bulbs.

E. & A. DICKSON & SONS, Chester—Dutch Flower Roots, &c.

WELCH & SONS, Worsley, Stourbridge—Bulbs.

W. DRUMMOND & SONS, Stirling—Bulb Catalogue.

CARTER & CO., 237 and 238 High Holborn, London—Bulb Catalogue.

W. P. BAIRD & SINCLAIR, Dundee—Dutch Flower Roots.

B. S. WILLIAMS, Upper Holloway, London, N.—Bulbs, Fruit Trees, and Roses.

### COMMUNICATIONS RECEIVED.

J. M. J. Dickson—E. F. Daly—Thomas & Co.—R. D. W. H. Y.—Muscati.—R. H.—D. R.—H. L.—W. B. (Corrections made.)—J. D. H.—A. Gibson.—W. R. H.—R. C. D. H.—W. H. W.—R. E. W.—W. R. D.—L. H. Dowrell, G. F. W.—H. J. Ross.

# Markets.

*COVENT GARDEN, August 27.*

HEAVY consignments still to hand and prices lower. Large arrivals of foreign produce. Pears, Grapes, and Plums, also Channels Islands produce. Kent Filberts heavy. *Thomas Heather, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, | | | Lettuce, English | | |
| per dozen | 2 0 | 4 0 | Cos, | 1 0 | 2 0 |
| Asparagus, each | 0 4 | 0 6 | Mint, per bunch | 0 4 | 0 6 |
| Beans, bag, per lb. | 0 4 | 0 6 | Mushrooms, Pickle | 1 0 | 1 6 |
| Beet, per dozen | 1 0 | 2 0 | Onions, per bushel | 5 0 | 8 0 |
| Cabbage, per dozen | 1 0 | 2 0 | Spring, per bun. | 0 6 | 0 8 |
| Carrots, per bunch | 0 6 | 0 8 | Parsley per bunch | 0 4 | 0 6 |
| Cauliflowers, Large | 2 0 | 3 0 | Peas, per quart | 1 0 | 1 6 |
| Irish, per dozen | 1 0 | 1 6 | Radishes, per dozen | 1 0 | 2 0 |
| Celery, per bundle | 1 6 | 2 6 | Small salading, per | | |
| Cucumbers, each | 0 3 | 0 6 | punnet | 0 4 | 0 — |
| Endive, per dozen | 1 0 | 2 0 | Spinach, per bushel | 4 0 | — |
| Garlic, per lb. | 0 6 | 0 — | Tomatos, per lb. | 0 6 | 0 9 |
| Herbs, per bunch | 0 2 | 0 4 | Turnips, new, bunch | 0 6 | — |
| Horse Radish, bun. | 0 4 | 0 6 | Vegetable Marrows, | | |
| Lettuces, Cab., doz. | 1 0 | 1 6 | each | 0 3 | 0 — |

POTATOES.—Magnum Bonums, 50s. to 60s.; Regents, 65s. to 80s.; Myatts, 60s. to 85s. per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per bag | 1 0 | 3 0 | Lemons, per case | 8 0 | 12 0 |
| Currants, red, ½ sieve | 1 0 | 1 6 | Melons, each | 0 6 | 1 6 |
| black, ½ sieve | 1 6 | 2 0 | Peaches, per doz | 2 0 | 6 0 |
| Figs, per dozen | 0 6 | 1 0 | Pine-apples, per lb. | 2 0 | 4 0 |
| Gooseberries, ½ sieve | 1 0 | 2 4 | St. Michael, each | 2 6 | 5 0 |
| Grapes, per lb. | 0 6 | 2 0 | Plums, ½ sieve | 1 6 | 4 0 |

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Arabis Sieboldii, doz. | 4 0 | 6 0 | Ferns, in var., dozen | 4 0 | 12 0 |
| Arbor-vitæ (golden), per dozen | 6 0 | 18 0 | Foliage Plants, various, each | 1 0 | 5 0 |
| (common) dozen | 6 0 | 12 0 | Fuchsias, per dozen | 6 0 | 9 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen | 12 0 | 24 0 |
| Bouvardia, doz. | 6 0 | 18 0 | longiflorum, doz. | 9 0 | 12 0 |
| Calceolarias, doz. | 3 0 | 6 0 | Marguerite Daisy, per dozen | 4 0 | 12 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Marules, per dozen | 4 0 | 12 0 |
| Dracæna terminalis, per dozen | 12 0 | 24 0 | Palms in variety, each | 2 6 | 21 0 |
| Ivies, per doz. | 12 0 | 24 0 | Pelargoniums, per dozen | 6 0 | 18 0 |
| Ivy-geranium, in var., per dozen | 6 0 | 9 0 | scarlet, dozen | 6 0 | 12 0 |
| Evergreens, in var., per dozen | 6 0 | 24 0 | Pelargoniums, per dozen | 6 0 | 12 0 |
| Pelargoniums, each | 1 0 | 3 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Marguerites, 12 bun. | 2 0 | 4 0 |
| Asters, 12 bunches | 2 0 | 4 0 | Mignonette, 12 bun. | 4 0 | 8 0 |
| Bouvardia, per bun. | 0 4 | 1 0 | Pelargoniums, per bun. | 0 2 | 0 4 |
| Carnations, 12 blms. | 1 0 | 4 0 | Roses, 12 blooms | 1 0 | 4 0 |
| Cornflower, per dozen | 0 6 | 1 0 | scarlet, 12 blooms | 0 4 | 1 0 |
| Cardinals, 12 blooms | 1 0 | 2 0 | Pinks, var., 12 bun. | 1 0 | 4 0 |
| Dipsacus, white, 12 blooms | 1 0 | 2 0 | Rhododendr., 12 bun. | 2 0 | 4 0 |
| — red, 12 blooms | 1 0 | 2 0 | Roses (indoor), doz. | 1 0 | 3 0 |
| Eucharis, per dozen | 2 0 | 4 0 | Stephanotis, 12 sprs. | 1 0 | 2 0 |
| Gardenias, 12 blooms | 2 0 | 6 0 | Sweet Peas, 12 bun. | 1 0 | 1 6 |
| Hyacinths, 12 bunches | 4 0 | 6 0 | Tropæolum, 12 bun. | 1 0 | 1 6 |
| Lilium longiflorum, 12 blooms | 2 0 | 4 0 | Tuberoses, 12 blms. | 0 3 | 0 9 |

## SEEDS.

LONDON, *Aug. 26.* The attendance on the seed market to-day was poor, and not much business was done. There is still a good demand for Trifolium incarnatum. White Mustard continues in narrow compass, and full prices are made. New Essex Rape seed is held more firmly; quotations are still very moderate. For sowing Rye there has been a better demand this week; rates remain unchanged. Winter Vetches move off freely; supplies only just equal the demand. It is daily becoming more evident that blue Peas are even a shorter crop than was anticipated, values are consequently advancing. Trading Linseed is quiet. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday English Wheats of the new crop ruled fully 1s. lower, making 32s. to 34s.; quotations for foreign, including American, were 6d. to 1s. lower. Flour was weakened by the position of the Wheat trade, though quotations were not lowered. New malting Barley samples were quoted 35s. as nominal value. Maltsters showed but little hurry to buy. Barley, Beans, Peas, and Maize may be quoted as without essential change. Common Oats tended in favour of buyers, and the trade generally was very slow. On Wednesday, for Wheat, the tone of the market was depressed, although there was not much further change in quotations. The flour trade was stagnant at rates nominal. All spring corn was very quiet. Average prices of corn for the week ending August 22:—Wheat, 33s. 5d.; Barley, 26s. 2d.; Oats, 20s. 11d. For the corresponding week last year:—Wheat, 36s. 4d.; Barley, 28s. 3d.; Oats, 20s. 6d.

## HAY.

Tuesday's Whitechapel Market report states that the supplies were not so large, and prices were firm, except for old hay, which was rather lower. Quotations:—Clover, prime old, 80s. to 110s.; prime second cut, 85s. to 102s.; inferior, 60s. to 75s.; new, 80s. to 95s.; hay, prime old, 70s. to 95s.; inferior, 30s. to 60s.; new, 65s. to 85s.; and straw, 28s. to 39s. per load.—On Wednesday there was a moderate supply, for which there was a dull trade at the recorded rates. Cumberland Market quotations:—Clover, best, 95s. to 100s.; inferior, 60s. to 80s.; hay, best, 80s. to 92s.; inferior, 50s. to 70s.; and straw, 30s. to 36s. per load.

## POTATOS.

The Borough Market report states that the supply is in excess of demand, which continues dull. Quotations:—Regents, 60s. to 100s.; Magnum Bonums, 80s. to 100s.; Early Rose, 80s. to 105s.; Hebrons, 95s. to 105s.; Shaws, 80s. to 90s.; kidneys, 100s. to 110s. per ton. The imports into London last week consisted of 489 bags from Boulogne, 30 from Rotterdam, and 220 from Hamburg.

## COALS.

The following are the prices current during the week:—Bebside West Hartley, 14s. 6d.; Ravensworth West Hartley, 14s. 6d.; Walls End—Hartley, 15s.; Tyne (unscreened), 11s. 3d.; Hetton, 17s.; Hetton Lyons, 15s.; Lambton, 17s.; Wear, 15s.; Caradoc, 17s.; East Hartlepool, 16s. and 15s. 6d.; South Hartlepool, 15s. 3d., 16s., 17s.; Haswell, 17s.; Chilton Trees, 15s.; Dowlais Merthyr, 16s. 6d.; Radford Navigation, 16s. 6d.

**Government Stock.**—Consols closed on Monday and Tuesday at 100⅛ to 100⅛ for both delivery and the account. Wednesday's figures were 100⅛ to 100⅜ for delivery, and 100⅜ to 100⅛ for the account. Thursday's closing figures were 100⅛ to 100⅜ for both transactions.


DEFICIENT CLOVER LEYS

*SPECIAL NOTICE.*

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EXTRA LATE RED TRIFOLIUM

as particularly valuable for mending deficient Clover Leys, it coming in from two to three weeks later than any other Trifolium, and being ready to cut at the same time as the Common Broad Clover.

Price, 18. per pound; 105s per cwt.
2 lbs. and upwards carriage free.

*Seed may safely be sown. Early Orders requested.*

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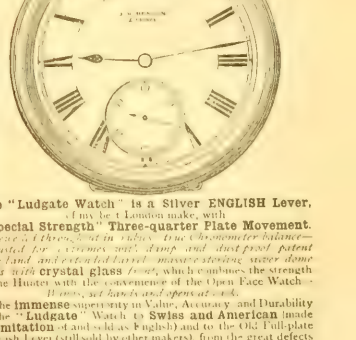
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GOLD, £12 12s.



The "Ludgate Watch" is a Silver ENGLISH Lever, of my best London make, with

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Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

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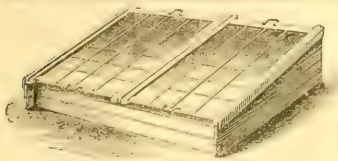
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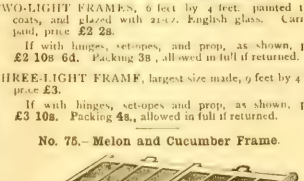
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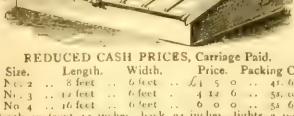
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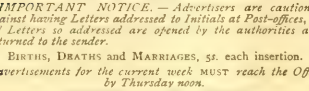


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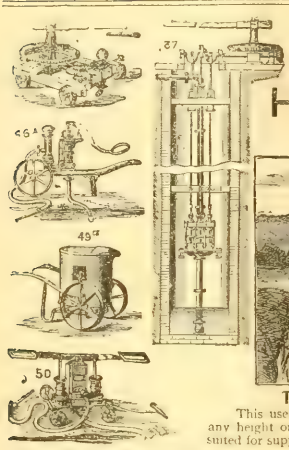
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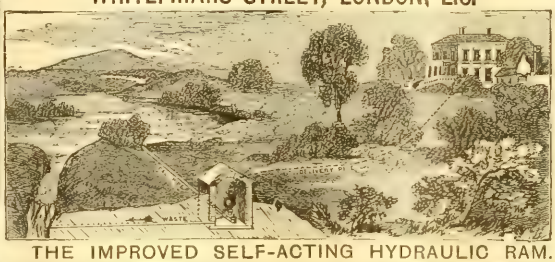
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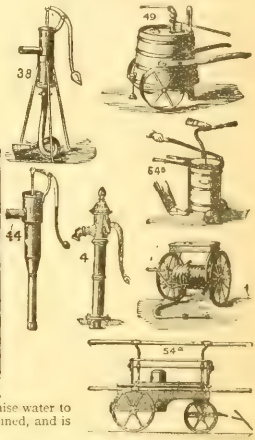



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## SUBSCRIBERS TO

*THE GARDENERS' CHRONICLE who experience any difficulty in obtaining their Copies regularly, are particularly requested to communicate with the Publisher, W. RICHARDS, 41, Wellington Street, Strand, W.C.*

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEE MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory, on TUESDAY NEXT, September 8.

SHOW of GRAPES, DAHLIAS, &c., SEPTEMBER 8 and 9 Open on the 8th from 2 o'Clock to 10 P.M.; on the 9th from 10 o'Clock A.M.

N.B.—Exhibitors' Entrance, east side of Royal Albert Hall.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

SHOW of GRAPES, DAHLIAS, &c., on TUESDAY, September 8, and WEDNESDAY, September 9, in the Conservatory.

Visitors to the International Inventions Exhibition admitted free at 1 P.M.

TEA ROSES in POTS.—Thousands to select from. The beautiful pure white Niphetos, full of buds, Maréchal Niel, Gloire de Dijon, and others; 12s., 18s., to 36s. per dozen.
F. STREET, Heatherside Nurseries, Farnboro' Station, Hants.

To the Trade.

ZONAL PELARGONIUMS. 8000 for Sale. Surplus stock. All the leading varieties. Splendid stuff in 48-pots, about half in full flower, fit for immediate use. The remainder have been disbudded and specially grown for winter flowering. My own selection. Price, 30s. per 100, or £12 10s. per 1000.
Also about 3000 TRITELEIA UNIFLORA, 15s. per 1000.
W. MILES, West Brighton Nurseries, Hove.

CAMELLIAS.—For Sale, Six Extra Large, from 6 to 8 feet high from top of box, two Pink, one Dark Red, one Light, two Double White, flore-pleno. For particulars, apply to
Mr. WRIGHT, Gardener, High House, Thorpe, Norwich.

LARGE FAN-TRAINED PEACH TREES. —Several good Trees for Sale, owing to want of room. Good sorts and fine, healthy trees that move well. For particulars and price call and see, or write to
W. H. DIVERS, Ketton Hall, Ketton, near Stamford.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

Now Ready.

TEA and NOISETTE ROSES, in pots, of best sorts only, in great quantity, and of best possible quality. Priced LIST gratis. A sample dozen, carefully packed for travelling, will be put on Railway on receipt of 13s. 6d.
EWING AND CO., Sea View Nurseries, Havant, Hants.

WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application. It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad.
WAITKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street, Strand, W.C.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s.
BARR AND SON, King Street, Covent Garden, W.C.

"Irradiating the Present, Restoring the Past."

THE "ORIGINAL" LITTLE BOOK of DAFFODILS.—In great variety, Harvested and Ripened well for best results with WM. BAYLOR HARTLAND'S care and culture, on his Private Grounds, TEMPLE HILL, CORK. Numerous "Original" Illustrations and 130 sorts to select from. The Book, one of the best things yet published, post-free, 1s.
HARTLAND'S Old Established Garden Seed Warehouse, 24, Patrick Street, Cork.

PALMS, specially Hardy Grown for Cool Greenhouses and Dwelling-houses.—Latania borbonica and Seaforthia elegans, splendidly foliaged, 20 inches high, 12s. per dozen; sample plants, 1s. 3d.; same kinds, 12 inches high, 25s. per 100; sample 12 for 4s. All packages and parcels post free. Postal orders to GARDENER, Holly Lodge, Stamford Hill, N.

Bulb Catalogue.

LAING AND CO.'S New Price List for this season is now ready, free on application, containing all best selections of Hyacinths, Tulips, Narcissus, Crocus, &c. Also Roses, Fruit Trees, Shrubs, &c. Early Orders are solicited.
JOHN LAING AND CO., Forest Hill, S.E.

The Best Yellow Carnation.

PRIDE of PENSHURST.—A marvellously free bloomer and vigorous grower. Perfectly hardy. Forces well. Plants ready about September. Price 2s. 6d. each, 42s. a pair. Cash with Order. Trade price on application.
F. BRIDGER, Penshurst, Kent.

MYRTLES (broad and narrow-leaved), any size and quantity, for sale cheap. Apply for sample and price to
W. A. CLINGO, Waverley Nursery, Waverley Place, St. John's Woon, N.W.

Ornamental Plant Nursery.

JULES DE COCK, Ghent, Belgium, offers to the Trade:—AZALEAS INDICA, MOLLIS, and PONTICA; DEUTZIA, CAMELLIA, FERNS, PALMS, and SPIRÆA JAPONICA, in large quantities.
CATALOGUE free on application.

NARCISSUS ODORUS (CAMPERNELLI) true, 20s. per 1000. Also a few thousand Sweet-scented JONQUILS, at 15s. per 1000. All selected and good flowering bulbs.
THOS. GELL, St. Lawrence, Ventnor, Isle of Wight.

OUR GENERAL BULB LIST, No. 77, is now in the Press. Send for a copy.
NEW PLANT AND BULB COMPANY, Colchester.

FOR SALE, for want of room, Twenty large CAMELLIAS, some 6 and 8 feet high, well set with buds. Some good white among them. To be seen at
W. A. CLINGO'S, Waverley Nursery, Waverley Place, St. John's Wood, N.W.

FOR SPECIALLY CHEAP GLASS see Last or Next Week's *Gardeners' Chronicle*.
HY. WAINWRIGHT, 8 and 10, Alfred St., Boar Lane, Leeds.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of CHOICE FRUIT and FLOWERS.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., REQUIRE a quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM. ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

WANTED, ACACIAS of sorts, about 6 to 8 feet, well furnished and healthy specimens. Size and price to
IRELAND AND THOMSON, 20, Waterloo Place, Edinburgh.

WANTED, 100 Gold and Silver FISH, from a pond or cold water. Different sizes. State lowest cash price to
W. A. CLINGO, Waverley Nursery, Waverley Place, St. John's Wood, N.W.

To the Trade.

SEAFORTHIA ELEGANS. — Seed just arrived in fine condition. Write for lowest Trade price and sample to
H. DAMMANN, Jun., Breslau, Germany.

A. M. C. JONGKINDT CONINCK begs to offer:—
CHIONODOXA LUCILIÆ.
,, SARDENSIS (Novelty)
SPIRÆA PALMATA ALBA (Novelty) pure white.
Prices on application.
Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Daffodils (Narcissi), and Other Bulbs for Present Planting in Gardens, Meadows, &c.

EDWARD MORSE, Nurseries, Epsom, will send his CATALOGUE of the above Bulbs to any address on receipt of application.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

FOR SALE, a splendid Pair of TREE FERNS (Cyathea medullaris), 6 feet 6-inch stems. In sound tubs. For particulars apply to
Mr. JOHN CARVILL, 53, Algernon Road, Lewisham, S.E.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant. CATALOGUES gratis. KELWAY AND SON, Langport, Somerset.

BULBS TO BE SOLD at Low Prices:—
Double White NARCISSUS, Pheasant's-eye NARCISSUS, and DAFFODILS. A large assortment of these superior Bulbs are offered to the Trade for the Season 1885. Apply to
W. A. BARKER, East Sheen, Surrey.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

CROCUS BULBS. — 100,000 large Yellow Bulbs, in first-rate condition, at 8s. per 1000.
R. GOSLING, Market Gardener, Boston.

AZALEAS, grand large plants of Double White, well set for early bloom, 20s. per dozen.
BOUVARDIAS in eight best kinds, including Doubles, fine bushy plants, 25s. per 100.
GARDENIAS, bushy, some in bud, 25s. per 100.
W. JACKSON, Blakedown, near Kidderminster.

WM. POTTEN can still supply BOUVARDIAS as advertised last week, also the following, post-free:—Good plants of the four varieties of BOUVARDIAS, 2s. 9d. per dozen; choice mixed CINERARIAS, 1s. 6d. per dozen, strong; twelve varieties of CHRYSANTHEMUM, strong, 1s. 6d. per dozen.
Camden Nursery, Sissinghurst, Staplehurst, Kent.

CLEMATIS JACKMANNI ALBA is now in bloom. All interested in this, the most important introduction of modern times, should book to Sunningdale Station (S.W.R.), and call on
CHARLES NOBLE, Bagshot.

PRIMULAS, CINERARIAS, PRIMULAS. Fine plants, ready for single pots, of the same well-coloured and large-flowered strains we have distributed for fourteen years, 1s. 6d. per doz., 10s. per 100, 22s. 6d. for 250.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham, and 12, Market Street, Manchester.

Autumn Planting.

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.
The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

Vines—Vines—Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Price and full particulars on application to the Company,
The Vineyard and Nurseries, Garston, near Liverpool.

The New Raspberry.

LORD BEACONSFIELD. (A Seedling.)
The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.
Strong Canes, £3 per 100; 9s. per dozen.
Usual allowance to Trade, 5 per cent. discount for prompt cash. Orders are now being booked.
A. FAULKNOR, Inkpen, Hungerford.

## SALES BY AUCTION.

**Dutch Flower Roots.**

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

**Thursday Next.**—(Sale No. 6966.)

EPIDENDRUM SCHOMBURGHI.

MR. J. C. STEVENS will include in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, September 10, a fine importation of the beautiful EPIDENDRUM SCHOMBURGHI, now offered for the first time; it is fully described in Dr. Lindley's *Folia Orchidacea*, at p. 70, and Dr. Lindley says that the flowers are rich scarlet and very handsome. This is one of the finest beautiful of Epidendrums, the flowers are scarlet in opening, changing to deep crimson as they get older, and last about two months in perfection. Every plant was collected in flower, and are in splendid order.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6966.)

EPIDENDRUM GLUMACEUM.

MR. J. C. STEVENS will include in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, September 10, an importation in very fine condition of EPIDENDRUM GLUMACEUM; flowers are produced in a Hyacinth-like spike about a foot in length, white tinged with pink, and a rose lip.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6966.)

ODONTOGLOSSUM PLANIFOLIUM.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, September 10, at half-past 12 o'Clock precisely, a fine importation of ODONTOGLOSSUM PLANIFOLIUM; flowers yellow, twenty to thirty on a spike, and Collector saw plants with thirty and more flower spikes. The flowers are finely scented. Also a few plants of the very rare ONCIDIUM ISOPTERUM, O. LEXUOSUM, EPIDENDRUM DIOTUM, a few EPIDENDRUM BURLINGTONIA DECORA PICTA, CYRTOPODIUM ST. LEGERIANUM, Bifrenaria species, and a fine lot of CATTLEYA DOWIANA, in A1 condition, and many other CATTLEYAS and other valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 6966.)

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 10, about 100 Lots of good ESTABLISHED ORCHIDS in variety.

On view morning of Sale, and Catalogues had.

**Orchids in Flower.**

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 17, and he will be glad if Gentlemen desirous of Entering Plants for this Sale will please send particulars of same not later than THURSDAY NEXT.

**St Martin's, Chichester.**

TO GRAPE GROWERS, FRUITERERS, CAPITALISTS, AND OTHERS.

Sale of a FREEHOLD GARDEN, known as The Graperies.

MESSRS. WYATT AND SON will SELL by AUCTION, on THURSDAY, September 17, at The Dolphin Hotel, Chichester, at 3 o'Clock precisely, by direction of Mr. Isaiah Baker, who is retiring from business, a very valuable and productive FREEHOLD GARDEN, known as THE GRAPERIES, ST. MARTIN'S, CHICHESTER, with eight Glasshouses thereon in capital condition, heated with flues and hot-water pipes, having a total length of 518 feet, and an area of 9646 feet of glass. Four of the largest houses are well stocked with the choicest Vines for market produce and in full bearing; the other four are used as Strawberry and Tomato houses. The garden is planted with Plum, Pear, and Mulberry trees, and well stocked with fruit bushes. There is also a plentiful supply of water from a pump in the garden, three large water tanks, and a Fowl-house thereon. The above garden is situated in the centre of the city of Chichester, with a carriage entrance from Little London. It has been for many years in the possession of Mr. Isaiah Baker, who has done a lucrative trade with the London market and trade customers at Southsea, the Isle of Wight, Salisbury, and other places.

Possession will be given at Christmas next, with the exception of the vineries where the Grapes are not then cut, with right of access thereto. One half of the purchase money may remain on mortgage at 4½ per cent.

The garden may be viewed on application to Mr. ISAIAH BAKER, The Graperies, St. Martin's, Chichester; and particulars, with conditions of sale, obtained of Messrs. RAPER AND FREELAND, Solicitors, West Street, Chichester; and of Messrs. WYATT AND SON, Estate Agents, Valuers, and Auctioneers, East Street, Chichester, and Auction Mart, Havant.

**Dutch Bulbs.**

Every MONDAY, THURSDAY, and SATURDAY.

GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each iday, about 800 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, in excellent quality and lotted to suit the Trade and Private Buyers.

On view mornings of Sale, and Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B. The Sale on THURSDAY NEXT will include 1000 GOLD FISH.

**Friday Next.**

A VALUABLE LOT of CHOICE ESTABLISHED ORCHIDS, amongst which will be found fine plants of Odontoglossum Edwardi, Lælia anceps Dawsoni, Dendrobium Ainsworthi roseum, Cattleya aurea, Phalænopsis Schilleriana, Cœlogyne Massangeana, Phalænopsis antenifera, in flower: Epidendrum Cooperianum, Cattleya guttata, C. aurea, Lælia Stelmeriana, several Lælia purpurata, Corianthes macrantha, C. maculata, Lælia anceps var. vestalis, Cattleya Skinneri alba, Masdevallia Schlimi, several Lælia Domingensis, &c. Also a fine lot of IMPORTED and ESTABLISHED ORCHIDS from Messrs. Shuttleworth, Carder & Co., and a quantity of fine plants of Imported DENDROBIUMS, and other ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 11, at half-pas 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Great Horticultural Trade Sale Week.**

MESSRS. PROTHEROE AND MORRIS beg to call the attention of the Trade to the following ANNUAL SALES of WINTER FLOWERING HEATHS and GREENHOUSE PLANTS, for the week SEPTEMBER 14 to 19.

They will be pleased to forward Catalogues on application.

**Lee, Kent, S.E.**

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, adjoining Lee Railway Station, on TUESDAY, September 15, at 11 o'Clock punctually, without reserve, 50,000 WINTER BLOOMING HEATHS, beautifully grown and well set with bloom-buds, including 15,000 Erica hyemalis, 3000 gracilis, 1000 Caffra, and large quantities of ventricosa and other varieties; large numbers of Erica gracilis autumnalis in 60-pots for growing on; 1000 well-berried SOLANUMS, 1000 CYCLAMEN PERSICUM, 1000 GREVILLEA ROBUSTA, 2000 ADIANTUM CUNEATUM, 2000 LOMARIA GIBBA, and other choice decorative Ferns in 48-pots; 2000 GENISTAS, 6000 BOUVARDIAS, including the new double Sangerrain and the old Alfred Neuner and President Garfield; 1000 decorative PALMS, 1000 EPACRIS, double white PRIMULAS, Maréchal Niel and other TEA ROSES, extra strong STEPHANOTIS, HOYAS, English-grown CAMELLIAS and AZALEAS, 3000 CLEMATIS FLAMMULA, one year transplanted, and other stock.

May be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—Messrs. P. & M. desire to call the attention of intending Purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate sale, and the whole will be found in an equally good condition as in former years.

**Lea Bridge Road Nurseries, Leyton, E.**

GREAT ANNUAL UNRESERVED TRADE SALE of WINTER FLOWERING HEATHS and other PLANTS, by order of Mr. John Laser.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION on the Premises, the Lea Bridge Road Nurseries, Leyton, E., close to Hoe Street Railway Station, on WEDNESDAY, September 16, at 11 o'Clock precisely (in consequence of there being upwards of 1200 lots), without reserve, many thousands of winter blooming and other HEATHS remarkably well grown, including hyemalis, gracilis, caffra, hybrida, candidissima, persoluta alba, ventricosas, and others; 2000 EPACRIS of the choicest kinds, 2000 AZALEA INDICA, 4000 CYCLAMEN PERSICUM, 2000 GENISTA FRAGRANS, 400 Double WHITE PRIMULAS in 60-pots, 500 BOUVARDIAS, best sorts; Tea-scented and Noisette ROSES, SOLANUM CAPSICASTRUM in berry, several hundreds of well grown CAMELLIAS well set with bloom, CLEMATIS INDIVISA LOBATA, and other GREENHOUSE CLIMBERS; 5000 well-grown CHRYSANTHEMUMS, 200 Maréchal Niel and other ROSES, from 7 to 10 feet; a large quantity of AMPELOPSIS VEITCHII, a variety of GREENHOUSE PLANTS, fine healthy young plants of LAPAGERIA ALBA and ROSEA SUPERBA, a beautiful lot of about 300 ARAUCARIA EXCELSA, 3000 CLEMATIS JACKMANNI, and other fine varieties; a splendid lot of variegated IVIES, 400 large variety White JASMINE, a quantity of other hardy climbers, 400 HOLLYHOCKS, fine named sorts, and other Stock.

May now be had. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

**Tottenham, N.**

GREAT ANNUAL TRADE SALE of WINTER-FLOWERING HEATHS, LOVE and GREENHOUSE PLANTS, &c., to commence punctually at 11 o'Clock, there being upwards of 1200 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Maller to SELL by AUCTION, on the Premises, the Brunswick Nursery, Tottenham, N., close to the Hart Lane Station, Great Eastern Railway, on THURSDAY, September 17, at 11 o'Clock punctually, without reserve, 20,000 Winter-blooming HEATHS, beautifully grown, and abundantly set with flower-buds, including hyemalis, gracilis, caffra, Wilmorea, assurgens, and other best kinds; 1000 EPACRIS, in fine variety; 1500 remarkably well-berried SOLANUM CAPSICASTRUM, 5000 well-grown FERNS, including Adiantums and Gymnogrammas; 500 FICUS ELASTICA, 4000 TREE CARNATIONS, best varieties; 5000 BOUVARDIAS, including the new double scarlets, Sangerrain, Triomphe de Nancy, and Victor Lemoine; 1000 EUPHORBIA JACQUINIFLORA, large plants of CAMELLIAS and AZALEAS for cutting from, 400 GENISTAS, 1000 Double White PRIMULAS, including Gilbert's new varieties; many thousands of small ERICAS, GENISTAS, FERNS, &c., for growing on; large quantities of AZALEAS, budded CAMELLIAS, GARDENIAS, BEGONIAS, ACACIAS, PALMS, PASSIFLORAS CŒRULEA and CONSTANCE ELIOTT, the new white; and a variety of other remarkably well-grown STOVE and GREENHOUSE PLANTS. AMPELOPSIS VEITCHII, CLEMATIS, EUONYMUS OVATUS AUREUS in pots, and many thousands in stores; and other SHRUBS for potting, suitable for the Trade and other extensive Buyers.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the Stock is in first-rate condition, the ERICAS being especially well set for flower.

**Sidcup, Kent, S.E.**

GREAT ANNUAL TRADE SALE of WINTER FLOWERING HEATHS, and other Plants, forming one of the largest collections ever offered to the Public. The stock of Heaths is unrivalled, the plants being particularly well grown and beautifully set with flowers, and well worthy of an inspection by intending purchasers.

MESSRS. PROTHEROE and MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longlands Nursery, Sidcup, ten minutes' walk from Pope Street Station (S.E.R.), on FRIDAY, September 18, at 11 o'Clock precisely (there being nearly 1100 Lots), an immense quantity of unusually well-grown WINTER BLOOMING HEATHS, and OTHER PLANTS, including:—

| | | | |
|---|---|---|---|
| 20,000 | Erica hyemalis, well set. | 10,000 | Cytissus racemosa, in 48-pots. |
| 10,000 | ,, gracilis. | 5,000 | Adiantum cuneatum, in 48-pots. |
| 5,000 | ,, melanthera. | 5,000 | Solanums, in 48-pots. |
| 5,000 | ,, Cavendishi. | 5,000 | Bouvardias of sorts, in 48-pots. |
| 5,000 | ,, magnifica. | 3,000 | Cyclamen, in 48-pots. |
| 10,000 | ,, coccinea minor. | 2,000 | Grevillea robusta, in 48-pots. |
| All in flowering pots. | | 50,000 | Heaths of sorts, in 60-pots, for growing on. |
| 1,000 | Tree Carnations, in 48-pots. | | |
| 1,000 | double Primulas, in 48-pots. | | |
| 300 | Camellias, well budded. | | |

The stock is in now on view. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

**Acton, W.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Reeves, to SELL by AUCTION on the Premises, The Nursery, Acton, W., on THURSDAY, September 24, about 100,000 FERNS, in pots and store boxes, 1000 ASPARAGUS PLUMOSUS, 2000 CORYPHA AUSTRALIS, 1000 AZALEAS, well set with buds, 2000 AUCUBAS, 2000 EUONYMUS, PELARGONIUMS, &c.

Further particulars will appear.

**Preliminary Notice of Forthcoming Sales of Nursery Stock.**

Important to Noblemen, Gentlemen, Nurserymen, Landscape Gardeners, Builders, and others proposing to Plant during the ensuing season.

MESSRS. PROTHEROE AND MORRIS beg to give notice of their Forthcoming Sales as at present arranged:—

OCTOBER 13, at the NURSERY, CLAPTON, by order of Messrs. Offord & Son, the Lease having expired.

OCTOBER 14 and 15, at the NURSERY, FELTHAM ROAD, SUNBURY, by order of Mr. Dawson.

OCTOBER 27 and 28, at the NURSERY, PUTNEY, by order of Messrs. Mahood & Son, the Lease having expired.

NOVEMBER 3, at the HALE FARM NURSERY, TOTTENHAM, by order of Mr. T. S. Ware.

Other Sales are being arranged, and when the dates are finally settled they will be duly announced

Messrs. P. & M. will be pleased to forward Catalogues on application.

**Flowering Orchids.—Special Sale.**

MESSRS. PROTHEROE AND MORRIS beg to give notice that their next SALE of the above will take place on TUESDAY, September 29, for which they will be glad to RECEIVE ENTRIES in due course.

**London, W.**

TO FLORISTS and GARDENERS.—Commanding position, in one of the principal main thoroughfares Capital FLORIST'S BUSINESS—Show House, 3 Greenhouses, several Pits, Dwelling-house, and Stable. Lease 32 years at a low rent. Price £600. Stock optional. Excellent opportunity.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C. (Folio 6242.)

TO BE DISPOSD OF, a FLORIST, NURSERY, and SEED BUSINESS, near one of the most flourishing towns in the South of England. Stock, Fixtures, Goodwill, &c., about £300. First-rate opportunity for an enterprising man.

For particulars, direct to Mr. HENRY FRY, Romsey Road, Winchester.

FOR SALE, by Private Treaty, the NURSERY, LANDSCAPE GARDENER'S, SEED and FLORIST'S BUSINESS, carried on for the last 18 years by Mr. J. SOUTHALL, of Handsworth, which is now permanently incapacitated by a serious accident from active business pursuit. The Nursery is well stocked with Shrubs of every description, and contains about 2½ acres at a small rent, together with a roomy three-storeyed House, three Glass-houses, Frames, &c., well stocked; also a Stall in West Bromwich Market Hall, the whole now in working order, and will be sold as a going concern. An immediate purchaser will be liberally dealt with, as the place must be sold at once.

Full particulars apply FLEETWOOD AND GOODEVE, Auctioneers, Valuers, and Estate Agents, 42, Cherry Street, Birmingham.

TO BE DISPOSED OF, a genuine FLORIST'S, SEED, and JOBBING BUSINESS, all in thorough working order, with Immediate Possession. Rent £32, with Lease.

Address, READ, 5, Felbrigg Villas, Uxbridge Road, Ealing.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. J. THEOBALD AND CO., 419, California Street, San Francisco, California.

TO SELL or LET (arising through death), a Small NURSERY and SEED BUSINESS, with immediate possession, if required. Direct communication with London by Great Eastern Railway. Distance 80 miles. Ten Acres of LAND can also be had suitable for Seed Growing or Market Garden purposes. Apply to

J. K., Messrs. Hurst & Son, 152, Houndsditch, London, E.

**To Nurserymen.**

FOR SALE, or TO BE LET, an Old-Established FREEHOLD NURSERY, on high road, close to a city. Noted for Roses and Clematises. Nearly 12 acres, 2 acres covered with Fruit Trees and Fruiting Bushes; Dwelling-house, and Seed Shop; convenient Glass Houses, Barn, Stables, Piggeries, &c.

Apply to Mr. G. B. KENNETT, Solicitor, Norwich.

**Fifty Nurseries, Market Gardens, Florist and Seed** BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Lisiria Park, Stamford Hill, N.

LOVEL'S STRAWBERRY RUNNERS.
Strong, healthy, and well-rooted.
Sample of Plants, 3d. Price LIST free.
W. LOVEL AND SON.
Strawberry Growers, Driffield.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and on his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same patronage and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his own free on demand.

**To Nurserymen, Seedsmen, and Florists.**
DUTCH BULBS—Season 1885.
WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited.
Trade CATALOGUES forwarded on application.
The ANNUAL SALE by AUCTION will be held on TUESDAY, September 15.
Burnt Ash Lane Nurseries, Lee, S.E.

NEW STRAWBERRIES, "LAXTON'S KING of the EARLIES," and "THE CAPTAIN." Orders for these remarkable New Strawberries, which are again being largely taken up by Market and Private Growers, should be sent at once, and will be executed in strict rotation, as the continued drought will materially limit the supply. Particulars with prices from
T. LAXTON, Seed and Novelty Grower, Bedford.

**TO COLLECTORS of NEW and RARE, HARDY and HALF-HARDY ORCHIDS.**

The following exceedingly rare species are being collected for us; special prices (if ordered now), as follows:—

**Bletia verecunda**—Height, 3 feet; flower beautiful purple, *2s. 6d.* and *3s. 6d.*

**Calopogon multiflora**—Comparatively unknown, very attractive, *2s. 6d.* and *3s. 6d.*

**Calypso borealis**—Small but uncommonly beautiful species, dark rose, on the lip red dots and rose stripes, a decided acquisition, *1s. 6d.* and *2s. 6d.*

**Corycium orobanchoides**—Flowers in July, when its most beautiful yellow blooms form a splendid sight, *1s. 6d.* and *2s. 6d.* each.

**Cypripedium montanum**—Lovely white and rose, a perfect gem, *2s. 6d.* and *3s. 6d.* each.

**Cypripedium fasciculatum**—New, magnificent, a few plants at *7s. 6d.* and *10s. 6d.*

**Disa barbata major**—Most delicate and enchanting pale blue, *5s.* and *7s. 6d.*

**Disa cornuta**—White and violet with splendid velvety black spots, *5s.* and *7s. 6d.* [*7s. 6d.*

**Disa porrecta**—Very rare and most beautiful, *5s.* and

**Epipactis gigantea**—Stems 1 to 3 feet high, terminating with very large flowers (nine to ten on each), of a splendid purple most beautifully touched with green, *2s. 6d.*, *3s. 6d.* and *5s. 6d.*

**Habenaria pyschoides**—When well treated this will attain a height of from 3 to 4 feet; flowers are most beautiful, "the upper part of which is densely studded with large violet-purple flowers edged with the most delicate fringe; the divisions of the lip are fan-shaped and very pretty." *Garden. 2s. 6d.* and *3s. 6d.*

**Herschella cœlestis**—Magnificent frame, &c., variety, belonging to the same family as the Disas, *3s. 6d.* and *5s. 6d.*

**Pterygodium alatum, catholicum, and cruciferum**—We are open to offer the set of three varieties of this beautiful family at *6s.* for the set.

**Satyrium carneum, candidum, cucullatum, erectum and marginatum**—We are open to offer the set of above five at the low price of *7s.* for the set.

N.B.—We are open to offer the above set of twelve species (Pterygodiums and Satyriums not included), at the reduced price of *25s. 6d.* for the set. *This reduced price only refers to this advertisement.*

Our Autumn Illustrated CATALOGUE of FLORAL GEMS gratis and post-free upon application.

**VICCARS COLLYER & CO.,**
**CENTRAL HALL, LEICESTER** (where all letters are to be addressed), and
**Glenfield Nurseries, near Leicester.**
A. W. CREWS, *Manager.*

# MESSRS. GREGORY & EVANS,

**LONGLANDS NURSERY, SIDCUP,**

Will place before the Trade, at their GREAT SALE in SEPTEMBER, one of the Largest Collections of WINTER-FLOWERING HEATHS and other PLANTS ever offered, including:—

| | | |
|---|---|---|
| 20,000 | **ERICA HYEMALIS**, in flowering pots, well set. | 10,000 **CYTISUS RACEMOSA**, in 48's. |
| 10,000 | ,, **GRACILIS**, in flowering pots, well set. | 5,000 **ADIANTUM CUNEATUM**, in 48's. |
| 5,000 | ,, **MELANTHERA**, in flowering pots. | 5,000 **SOLANUMS**, in 48's. |
| 5,000 | ,, **CAVENDISHI**, in flowering pots. | 5,000 **BOUVARDIAS**, of sorts, in 48's. |
| 5,000 | ,, **MAGNIFICA**, in flowering pots. | 3,000 **CYCLAMEN**, in 48's. |
| 10,000 | ,, **COCCINEA MINOR**, in flowering pots. | 1,000 **TREE CARNATIONS**, in 48's. |
| | | 1,000 **DOUBLE PRIMULAS**, in 48's. |
| | | 2,000 **GREVILLEA ROBUSTA**, in 48's. |
| | | 50,000 **HEATHS**, of sorts, in 60's, for growing on. |

INSPECTION INVITED.

# DUTCH FLOWER ROOTS.



# JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEY HAVE RECEIVED THEIR ANNUAL SUPPLY OF

## HYACINTHS, NARCISSUS, TULIPS, and other BULBOUS ROOTS;

And are pleased to say that they are in exceptionally fine condition.

## BULB CATALOGUE FOR 1885

*Has now been Posted to all our Customers; any one not having received the same, a Duplicate Copy will immediately be forwarded Post-free on application.*

**ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.**

PICTA, NEW, BEGONIA REX TYPE.—Silver centre, bright light green margin with silver spots, very beautiful. Good plant, *2s. 6d.*, post-free.
TEA ROSES, own roots, best varieties, *5s.* per dozen, carriage paid. Strong plants NIPHETOS Marie Henriette, &c.
MAIRIS AND CO., Weston in Gordano, Bristol.

**Season 1885.**
Notice to NURSERYMEN, SEEDSMEN, and FLORISTS.
WHY PAY Freight from Holland to London on DUTCH BULBS when you can buy at a cheaper rate the same quality and get them brought over free by ordering from M. RAINS AND CO., 34, Mansell Street Aldgate, E.C., the Old-established Firm since 1856. Named HYACINTHS, first-size Bulbs, at *4s.* or *5s. 6d.* per 100, or *2½d.* each; bulbs true to name and colours. Price LISTS may be had free on application. Bulbs will be found at this establishment from August until the end of December in each year.
HYACINTHS from *8s.* per 100; Early Romans, *8s.* per 100.

**Bermuda Easter Lily.**
LILIUM HARRISII.—This Lily, coming direct from Bermuda, must not be confounded with the variety generally sent from America under the above name, to which it is much superior, and different in bulb, growth, and flower.
Mr. WILLIAM BULL has just received his usual large importation direct from Bermuda, and can supply good bulbs at *2s. 6d.* and *3s. 6d.* each; gigantic bulbs, *5s.* and *7s. 6d.* each; a few monster bulbs, 1 foot in circumference, *10s. 6d.* each.
LILIUM AURATUM.—Mr. WILLIAM BULL is now booking orders for good plump, sound bulbs at *6s.*, *9s.*, *12s.*, *18s.*, and *24s.* per dozen. All other good Lilies at equally low prices.
Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

**Prize Gooseberries and the National Gooseberry** SHOW.
ON SALE, the heaviest and best sorts of GOOSEBERRIES, that were shown at the above named SHOW, as inserted in the last week's *Gardeners' Chronicle*. Also for Market purposes, CROWN BOBS, LANCASHIRE LADS, ROARING LIONS, KEEPSAKES, and others. They are all on clear legs, and have clean healthy tops, and will be offered at unusually low prices.
A printed LIST, with price per dozen or hundred may be had post-free on application.
EDMUND SALSBURY, Melbourne, near Derby.

**Ferns.—Ferns.—Ferns.**
TO THE TRADE ONLY.
ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, *20s.* per 100, *£9* per 1000.
ADIANTUM LE GRANDE, nice plants, ready for potting on, *30s.* per 100.
ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, *40s.* and *50s.* per 100.
The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

**To the Trade only.**
E. H. KRELAGE AND SON, NURSEYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale Catalogue (No. 379A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1885-86, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out of this specialty. The prices of Hyacinths in general are considerably lower than before. Prices of Tulips and other Bulbs, too, are in many instances inferior to former quotations. German and French editions as well as a separate English edition for America, are published.

**The Success of the Rose Season.**
PAUL AND SON'S
Three New Cheshunt Roses.
H.P. MADAME NORMAN NERUDA—The perfection of a show Rose. First-class Certificate Royal Horticultural Society, July 14.
H.P. LONGFELLOW—The new Moss Rose, vigorous, violet. Charles Lefebvre.
H.P. PRIDE of REIGATE—The finest striped real autumnal flowering Rose. First-class Certificate Royal Horticultural Society, July 14.
The Set of the Three, good Plants in pots, for budding from; or strong good Plants in November; *21s.* the Set. Order at once.
The "Old" Nurseries, Cheshunt, Herts.

DUTCH BULBS.
DIRECT FROM THE GROWERS.
ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.
Intending purchasers of DUTCH BULBS are invited to read ANT. ROOZEN & SON'S CATALOGUE for 1885, and see the large saving effected by DEALING DIRECT WITH THE GROWER. The Catalogue, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants, and also particulars as to FREE DELIVERY, will be sent, POST-FREE, on application to them, or to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

**Strawberry Plants.**
STRAWBERRY PLANTS.—Warranted all from Fruiting Plants, and will produce a large crop of fine fruit next year:—
IMPROVED BLACK PRINCE, ALPHA, CRIMSON PINE, EXQUISITE, TRIOMPHE DE PARIS, VICOMTESSE HERICART DE THURY, KEENS' SEEDLING, and other really fine varieties, *3s.* per 100, carriage free.
LAXTON'S GRAND NEW STRAWBERRY, KING OF THE EARLIES, Fruiting Plants, *2s.* per dozen, free.
S. SHEPPERSON, Florist, Prospect House, Belper, Derbyshire.

**The Rose and Palm Nursery,**
Gentbrugge, near Ghent, Belgium. The Owner,
OCTAVE BURVENICH-DE WINNE, begs to offer his splendid and renowned stock of 50,000 AZALEA MOLLIS—to be seen every day in his place:—

| | | | |
|---|---|---|---|
| Nice bushy stuff, showing from 20 to 30 buds, per 100 | | | £4 0 |
| ,, | ,, | ,, 12 to 20 ,, | 2 10 |
| ,, | ,, | ,, 7 to 12 ,, | 1 15 |

General BELGIAN STOCK, at most moderate prices.
5000 ADIANTUM CUNEATUM and GRACILLIMUM, LOMARIA ZAMIÆFOLIA, at *12s.* per 100.

# BULBS.

## B. S. WILLIAMS

Has much pleasure in announcing that he has this year been entrusted with the whole of the Order for **BULBS** required by the **METROPOLITAN BOARD of WORKS**, for the various Parks, &c., under their jurisdiction in the Metropolis.

Orders for DUTCH and FRENCH FLOWERING ROOTS of all kinds are now being executed

*The quality of the Bulbs is excellent this year, they being unusually large and well ripened.*

**Early Orders Solicited.**

*ILLUSTRATED BULB CATALOGUE* is now ready, and will be forwarded post free to all applicants.

**VICTORIA and PARADISE NURSERIES,**
UPPER HOLLOWAY, LONDON, N.

# BULB GUIDES.

These most interesting and instructive Catalogues are Now Ready, and may be had gratuitously upon application.

**Part 1** consists of HYACINTHS, TULIPS, CROCUS, and a LIST of MISCELLANEOUS BULBS.

**Part 2** consists exclusively of LILIES and NARCISSUS, and includes every variety worthy of cultivation all of which are fully described.

## THOMAS S. WARE,
Hale Farm Nurseries,
TOTTENHAM, LONDON.

# CHOICE IMPORTED DUTCH BULBS.

**JARMAN'S No. 6 COLLECTION** contains 1000 selected and assorted Bulbs, for Indoor and Out-of-door combined. Price 21*s.* cash. Package and Carriage Free. Others at 6*s.* 6*d.* to £4 4*s.*

**ROSES**, 9*s.* per dozen. A big stock and fine Plants.

*Send for large Descriptive LIST of Bulbs, Roses, Plants, Seeds, &c, to*

## E. J. JARMAN,
The People's Seedsman,
CHARD, SOMERSETSHIRE.

# AFRICAN TUBEROSES,

GROWN BY

**WM. RISLEY, Maritzburg, Natal**

(the Original Grower).

Consignments of these beautiful Bulbs have already been landed, and are now offered at very low quotations. They are far away superior in every respect to any hitherto imported, and they have never opened up in such exceptionally fresh and healthy condition.

The undersigned is prepared to show samples at his office, or to give full facilities for inspection of bulk, and to receive orders Intending buyers are advised to make an early application, as the supply is limited.

**Terms—Cash in exchange for Delivery Order.**

## WM. G. MACGREGOR,
LANGBOURN CHAMBERS,
17, FENCHURCH STREET, E.C.

# FLOWERING PLANTS

**For AUTUMN and WINTER.**

*STRONG, HEALTHY, and FULL of BLOOM.*

**Acacias**, 18*s.* to 30*s.* per dozen.
**Azalea indica**, 18*s.* to 60*s.* per dozen.
**Bouvardias**, distinct, Singles and Doubles 15*s.* per dozen.
**Camellias**, 30*s.* to 60*s.* per dozen.
**Cyclamen persicum** (Smith's superb strain), full of buds, 5-inch pots, 18*s.* per dozen.
**Cytisus**, 12*s.* to 18*s.* per dozen.
**Epacris**, best sorts, 18*s.* to 30*s.* per dozen.
**Ericas, hyemalis, Willmoreana, caffra, gracilis, autumnalis, &c**, 6 inch pots, 18*s.* to 30*s.* per dozen.
**Gardenias**, 18*s.* to 30*s.* per dozen.
**Lapageria alba**, 7*s.* 6*d.* to 42*s.* each.
**Lapageria rosea**, 2*s.* 6*d.* to 5*s.* each.
**Libonia penrhosiana**, 12*s.* to 18*s.* per dozen.
**Pimeleas**, very fine, 30*s.* per dozen.
**Primulas**, best Doubles, named, 3*s.* to 42*s.* per dozen.
**Primulas**, Double White and Purple, 18*s.* per dozen.
**Tree Carnations**, 5 inch pots, 24*s.* to 30*s.* per dozen.

**Orange, sinensis** (in fruit), 2*s.* 6*d.* each.
**Greenhouse Climbers**, in variety, 18*s.* to 30*s.* per dozen.
**Grevillea robusta**, 5-inch pots, 12*s.* to 18*s.* per dozen
**Ferns, Maidenhair, &c**, in great variety; also

**STOVE and GREENHOUSE PLANTS.**

*DESCRIPTIVE LIST FREE.*

Selections from above may be made at dozen prices. The plants are remarkably fine and cheap.

## RICHARD SMITH & CO.,
NURSERYMEN and SEED MERCHANTS,
WORCESTER.

# DUTCH BULBS at DUTCH PRICES.

*Our TRADE LIST is now ready.*

If you have not received one, send a Postal Card for it, and on receipt

COMPARE PRICES.

## HOWCROFT & WATKINS,
Hart Street, Covent Garden, London, W.C.



## B. S. WILLIAMS'
**Improved Mushroom Spawn**
per bushel of 14 cakes 5*s.*
Per cake, 6*d.*; per cake, free by Parcel Post, 1*s*
For Outdoor and Indoor Culture.
**Victoria and Paradise Nurseries,**
Upper Holloway, London, N.

HYACINTHS, EARLY WHITE ROMAN. — May be had in bloom before Christmas. The best pure White for Forcing. Fine bulbs now ready.

IRIS KÆMPFERI—in about twenty different shades of colour. This grand Japanese Iris is hardly yet known in this country, but should be grown by every lover of flowers. It is by far the largest flower of this family, with most striking colours. We offer well established English-grown Roots; also many other varieties of Iris.

IXIA CRATEROIDES — Brilliant Crimson. This is about the most showy of this useful family of Bulbs.

IXIA VIRIDIFLORA—a most uncommon colour amongst flowers — very striking, being a decided green with black eye. Also many other varieties of Ixia, a family which only requires to be more widely known to be grown as largely as the Tulip or Hyacinth.

LILIUM CANDIDUM — the Old White Garden Lily. Fine Bulbs now ready for Planting or Forcing.

NARCISS and DAFFODILS — in great variety—Choice and Common.

SCILLA SIBIRICA.—This charming rich Blue variety is now as cheap as the Snowdrop, to which it makes a good companion and contrast.

SEE OUR

**WHOLESALE BULB CATALOGUE**

for prices of above and all other varieties of DUTCH and ENGLISH BULBS. May be had on application.

## *WATKINS & SIMPSON,*
SEED AND BULB MERCHANTS,
13, EXETER STREET, STRAND, W.C.

# BULBS

200,000 DIRECT FROM HOLLAND.

Very Cheap LIST, with interesting Pamphlet on Growing Bulbs, free on application HYACINTHS, from 7*s.* 6*d.* per 100; TULIPS, from 2*s.* 100; CROCUS, from 1*s.* 100; NARCISSUS, from 1*s.* 100. Liberal Discount to Large Buyers.
ROBERT SYDENHAM, Bristol Road, Birmingham.

# CARTERS'
# EARLY BULBS,
## FOR FORCING.

*To produce Beautiful White and Coloured Flowers for Christmas and Easter Decoration.*

**CARTERS' Earliest White Roman HYACINTHS.**
Per 100, 15*s.*; per dozen, 2*s.* 3*d.*

**CARTERS' Double Roman NARCISSUS.**
Per 100, 11*s.* 6*d.*; per dozen, 1*s.* 9*d.*

**CARTERS' Paper-White NARCISSUS.**
Per 100, 11*s.* 6*d.*; per dozen, 1*s* 9*d.*

**CARTERS' Red and Yellow VAN THOL TULIPS.**
Per 100 5*s.* 6*d*; per dozen, 1*s.*

**CARTERS' Extra Large SNOWDROPS.**
Per 100, 3*s.* 6*d.*

**CARTERS' Double Sweet-scented TUBEROSES.**
Per 100, 30*s.*; per dozen, 4*s.* 6*d.*

**All Parcels Packing and Carriage Free.**

CARTERS' COLLECTIONS, SELECTED FROM THE ABOVE BULBS A, price 5*s.*; B, price 7*s.* 6*d.*; C, price 10*s.* All Free by post, packing free, per Parcels' Post.

FOR Full Particulars see CARTERS' ILLUSTRATED CATALOGUE of BULBS, ROSES, &c., is ready and post-free.

Seedsmen by Royal Warrant to His Royal Highness the PRINCE OF WALES.

*Carters*

237, 238, **High Holborn, London, W.C.**

Old Established




# Dutch Flower Roots,

*SUPERB QUALITY.*

The Pick of Holland.

*Prices very moderate.*

**Free Deliveries.**

WRITE FOR CATALOGUE (*Illustrated*).

Reliable always. *Address in full*—

## R. & A. DICKSON & SONS,
The Queen's Seedsmen,
CHESTER.

# FERNS A SPECIALTY.

**THE LARGEST STOCK IN THE TRADE.**

ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1*s.*

SMALLER CATALOGUE, of over 1200 species and varieties, free on application.

Special Descriptive "LIST OF NEW, RARE, AND CHOICE FERNS," free.

Descriptive "LIST OF HARDY NORTH AMERICAN FERNS," free.

## W. & J. BIRKENHEAD,
**FERN NURSERY, SALE, MANCHESTER.**

# CLEMATIS

**JACKMANNI ALBA (Noble).**

"The hardy flowering plant of the season." "Certificated unanimously."

(See *Gardeners' Chronicle*, July 28, 1883.)

*Now being sent out at 7*s.* 6*d.* and 10*s.* 6*d.* each. Cash or reference.*

CHARLES NOBLE, BAGSHOT.

**The Grand New Narcissus.**

**"SIR WATKIN."**

9*s.* each, 21*s.* per dozen, 160*s.* per 100.

The largest and finest known. First-class Certificate Royal Horticultural Society.

Descriptive CATALOGUE post-free. Plant at once.

**JAMES DICKSON & SONS, "Newton" Nurseries, Chester.**

BEAUTIFUL

FLOWERS

AT CHRISTMAS

May be secured by planting

SUTTON'S



FORCING BULBS

For Prices and full particulars see

SUTTON'S AUTUMN CATALOGUE,

Gratis and Post-free on application.

ALL GOODS CARRIAGE FREE (if of 20s. value).

Suttons Sons

THE QUEEN'S SEEDSMEN, and by Special Warrant to H.R.H. THE PRINCE OF WALES, READING.

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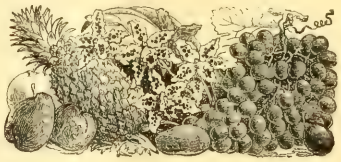
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THE

# Gardeners' Chronicle.

*SATURDAY, SEPTEMBER 5, 1885.*

## DR. VON REGEL.*

WE have already briefly noted the celebration of Dr. Regel's seventy-first birthday, and, to fire the ambition of our young gardeners, we now add a few particulars of his career, which commenced as an apprentice in the ducal gardens of Gotha, and has culminated in the title of Excellency, and the position of Director of the Imperial Botanic Garden of St. Petersburg. Regel's father was a Professor in the Gymnasium or College at Gotha, and garrison preacher at the same time, but it was not considered beneath his son's station to enter the ducal gardens as an ordinary apprentice, which he did at the age of fifteen. Here he spent three years, and during this period he attended the commercial school to improve his knowledge of modern languages, and study the higher mathematics and arithmetic. He very early evinced a love for gardening and botany, keeping his father's garden in order, and taking lessons in botany and entomology at the age of thirteen. When he left Gotha for Goettingen in 1833, at the age of eighteen, he was well acquainted with the flora of Thuringia. For two and a half years he worked in the Goettingen Botanic Garden as a volunteer, and attended the botanical lectures, and then for a year and a half longer worked regularly in the garden, associated with Preiss, subsequently well known for his botanical collections in West Australia. During this period it was his mother's desire that he should devote himself entirely to the study natural history, but Regel demurred, fond as he was of it, preferring to pursue the career he had entered upon of a practical gardener, and devoting his leisure time to scientific studies. Here he benefited greatly from the lectures of and personal intercourse with Bartling. From 1837 he served as journeyman gardener in the botanic garden at Bonn, where he had charge of the hardy plants and seed department. During the day he worked practically, and studied regularly every morning from 2 till 6 before beginning his daily task. Indeed, it is stated that during his stay at Goettingen and Bonn he slept on an average only five hours out of the twenty-four. On holidays and Sundays he made botanical excursions, often starting on Saturday evening, walking six or eight hours' journey before sunrise, and then botanised all day, and walked back on Sunday night, never failing to be at his work at 6 o'clock on Monday morning. Of course, this demanded something more than perseverance; physical strength and a sound constitution were necessary. At Bonn Regel formed an acquaintance with Treviranus, Wichura, Seubert, and J. Schmitz, and jointly with the last published a *Flora Bonnensis*.

In 1839 he proceeded to Berlin, where he remained in the same position as at Bonn until 1842. Here the friendship of Klotzsch and the near herbarium were of great assistance. Link

* Extracted from a memoir by Dr. Wittmack in the *Berliner Gartenzeitung*.

and Kunth, the directors of the garden, troubled themselves little about it. The herbaceous plants, annual and perennial, had been neglected for years, and were in a sad state of confusion, but by dint of labouring from early morning till late in the evening Regel reduced the collection to excellent order. It was during this period, too, that he wrote his *Hauptmomente des Gartenbaues durch Physiologie begründet* ("The Principles of Horticulture based on Physiology") which appear in the *Gardeners' Chronicle* in the form of a translation and preceded Lindley's *Theory of Horticulture.** Among life-long friendships here cemented were those of Warscewicz, H. Wagner, and Dr. Klotzsch.

In February, 1842, Regel was appointed head gardener of the Zurich Botanic Garden, which, although beautifully situated, was poor in plants, and insignificant in every respect. The institution derived its funds from trade in plants, but Regel found no plants to sell—the first year's income therefrom being only 300 francs, against 30,000 francs in 1855, the year he left. Through his friend Warscewicz he obtained many fine novelties from Central America, which he cultivated and described, and which afforded him material for exchange with German and Belgian gardens. The Gesneraceæ were his special favourites, and he succeeded in raising a number of beautiful hybrids. Finally he founded a trade in seeds, and by these various means raised the reputation of the garden, which his successor, M. Ortgies, has well maintained. During this period Regel did not merely superintend others, he worked with his own hands. Here his literary activity may be said to have begun. In conjunction with Professor Heer he founded, in 1843, the *Schweizerische Zeitschrift fur Land und Gartenbau.* Later the agricultural and horticultural parts were issued independently, and Regel continued to edit the latter until 1852, when it was replaced by his well known *Gartenflora*, which he carried on himself until last year. Of his many writings of this period an article on the hybrid origin of Ægilops triticoides is one of the most remarkable, for in this he clearly refuted Lindley's view that Ægilops ovata was the plant from which Wheat had descended. He also demonstrated that hybrids between distinct species are not invariably sterile. Before he left Zurich the University bestowed on him the title of Doctor of Philosophy. In 1845 he married a Swiss lady, and settled down as it were in his adopted country; but in 1855 he was offered the post of Scientific Director of the Imperial Botanic Garden of St. Petersburg, which he accepted though not without many regrets for the beautiful land he was leaving. This post he held until 1867, but in consequence of the administration being in other hands, he was unable to effect so much for the establishment as he wished. On the other hand, in spite of all difficulties, he founded, with the assistance of others, the Imperial Horticultural Society of St. Petersburg, which has now eight affiliated branches in distant parts of the empire. In 1868 Regel's intimate friend, Trautvetter, was appointed Practical Director of the garden, and thenceforward their gradual improvement has proceeded without any check. Since 1875 Regel has been sole Director, and his efforts for the advancement of horticulture and botany generally are so well known as to need no further comment. The success his exertions have attained in Russia must be highly gratifying to him, and the splendid recognition of his services on his seventy-first birthday prove how much they are appreciated. He has further the satisfaction of cultivating and describing the numerous novelties collected by his son, Dr. Albert von Regel, in the most remote parts of the vast Russian empire. Honours and dignities have been showered upon him by the Russian, Prussian, Italian, and Brazilian sovereigns, to say nothing of the numerous learned societies in Europe and other parts of the world; and we wish him many years to enjoy them. He is an instance of what may be effected by untiring industry, and such an example should stimulate beginners to aim at the combination of theoretical and practical knowledge to the fullest attainable extent, and it should stimulate those who have passed the threshold not to relax their efforts, for although few become leaders in their profession, all should strive to do so, as knowledge is of itself a reward and consolation.

* We have reproduced this statement for the purpose of correcting it, especially as a fair influence therefrom is that Lindley may have been indebted to Regel. It would seem that they worked quite independently of each other, whatever the merits of their respective theories; for their writings were published so near the same date as to render it improbable that either was aware of the existence of the other's work. In the first place, Lindley's *Theory of Horticulture* was published in full before any part of Regel's articles on the same subject appeared in the *Berliner Gartenzeitung*, and this fact disposes of the claim of priority for Regel. This assertion is supported by dates. The first edition of Lindley's *Theory of Horticulture* appeared early in 1840, so early, indeed, that it was noticed in Loudon's *Gardener's Magazine* for February, 1840; and the first instalment of Regel's *Hauptmomente* was published in the *Berliner Gartenzeitung* for March 14, 1840; therefore there was just a possibility of Regel having seen Lindley's work before sending his own to press. A German edition of Lindley's book was published at Vienna in 1842, and another, translated by Treviranus, at Erlangen, in 1843.

It is also an error to say that Regel's *Hauptmomente* appeared in the form of a translation in the *Gardeners' Chronicle;* indeed we can find no mention of the work, and it is not likely that it was mentioned because the first volume of the *Chronicle* came out the following year, 1841. We doubt even whether a complete English translation of Regel's series of articles exists, for, although one was begun in Loudon's *Gardener's Magazine* for October, 1841, and continued from time to time until June, 1842, it was not continued after that date. We have made these rectifications in justice to the memory of the late Dr. Lindley, without any intention of casting a doubt on the good faith of Dr. Wittmack, and without the wish to detract from the merits of Regel's work; indeed, great credit is due to him, then a much younger man than Lindley, for his perception of the need of scientific method in practical gardening and for his attempt to supply the want.

# New Garden Plants.

## ADIANTUM MAIRISII, *n. hyb.*

FRONDS triangular, quadripinnate, papyraceo-membranaceous, dark green, somewhat pale beneath; pinnæ ovate, and as well as the pinnules and pinnulets furnished with rather long, slender stalks; ultimate pinnules cuneate-trapezoid; those near the base of the pinnæ smaller, cuneate, with an irregular truncate apex, those towards the end of the pinnæ larger and more trapezoid, with a lobate margin, the terminal one largest, with a distinctly cuneate base, the two external edges unequally lobed; fertile pinnules, with the anterior and exterior sides lobate and soriferous, the edge cut out into oblong, concave sinuses, which gives a sort of bluntly cornute aspect to the principal pinnules; sori linear-oblong, slightly curved, with an open sinus, from ⅛ to ¼ inch long, the few shorter ones oblong-reniform; rachis ebeneous, glossy; caudex not seen.

This is a very characteristic and handsome Maidenhair Fern, which at first sight is suggestive of a large form of A. cuneatum, but which is soon seen to be quite distinct therefrom in its cornute pinnules. Were it not for its strongly marked cuneate pinnules, especially all the smaller ones in the central parts of the frond, its oblong fructification would lead us to think of it as belonging to the type of A. Capillus-veneris. It is supposed to be a hybrid having, we presume, been found as an accidental seedling amongst other Ferns; and if it be so, as seems very probable, it may be a cross between A. Capillus-veneris and A. cuneatum. It was sent by Messrs. Mairis & Co., nurserymen, of Weston-in-Gordano, Bristol, and may well bear their name, since that of A. hybridum, which they had applied to it, is not in these days sufficiently definite.

The largest specimen before us, a fully fructified one, is about a foot high, and 8 to 9 inches across, loosely branched, the pinnæ, pinnules, and pinnulets having all rather long and slender stalks, so that the centre of the frond is somewhat open. The lower branches of the pinnæ bear distinctly wedge-shaped pinnules, with the upper end obliquely truncate, and showing less of the cornute character than the larger ones situated towards the apices of the pinnæ and frond, which measure ¼ an inch or more along the lower margin, the larger terminal pinnules being often 1 inch long. The sori are much elongated in most cases, slightly curved, with the concave side outwards, so that the two ends project like short blunt horns from the margin. The recurrence of this character in a prominent degree throughout the fronds, gives to the variety its most distinctive peculiarity. We regard it as one of the best iof the ornamental group of Maidenhairs, and presume t requires the treatment. *T. Moore.*

### DENDROBIUM CHRISTYANUM, *Rchb. f.*

I was much pleased to get a fine specimen of this, full of leaves, from Mr. A. H. Smee, from The Grange, Carshalton, Surrey. The leaves are rather thick, the longest exceed two inches in length, not surpassing much half an inch in breadth. They are cuneate, oblong, ligulate, neatly covered with hairs, which are very conspicuous on the pallid inferior side. Their top is unequal, one side prolonged into a blunt tooth, the other shorter, abrupt. The lamelloid three ridges on the lip are red in the centre, orange at the base and apex, while they were totally red in Mr. Christy's original plant. *H. G. Rchb. f.*

# ORCHIDS FOR AMATEURS.

(*Continued from p.* 266.)

BOTH Cattleya and Lælia belong to the great division of the Orchid family known to botanists as the Epidendreæ—"Growers upon trees." These plants are so named from their epiphytic habit, but the division by no means contains the moiety of Orchids which grow upon the branches of trees. Those of the other group—the Vandeæ—are equally epiphytic. The botanical characters distinctive of the Epidendræ are the following:—

The anther—that is, the cavity which contains the pollinia—is at the apex of the column; the pollen masses are waxy, four or eight, rarely two in number; and the caudicles to which they are attached are not united to a viscid disc-like glandular structure which separates with them, as they are in the Vandeæ. It needs some little practice and care to distinguish between the Epidendreæ and Vandeæ, and the comparison of the flowers of the two groups should be carefully made with reference to the structure of the pollinia, so that the Orchidologist may learn to distinguish between them.

The type genus of the Epidendreæ, Epidendrum, is a very large one; over 400 species have been described, all from Tropical and Subtropical America, the northern limit being Texas, and the greater number flourish on lofty mountains.

The majority of these plants, though very fragrant, have small green, or unattractive flowers, so that they are not often cultivated, but a few are exceptionally beautiful, and are eagerly sought for by collectors and growers. These plants fall into five very distinct sections, which, but for the botanical characters of their flowers, might well form as many distinct genera. They are—

1. The Nemorale section, distinguished by their ovate pseudobulbs.

2. The Aurantiacum section, which have bulbs resembling those of a Cattleya.

3. The Bicornutum section, with cylindrical jointed pseudobulbs, resembling those of the thick-bulbed Dendrobiums.

4. The Barkeria section, usually regarded as a distinct genus by horticulturists. These have thin cylindrical pseudobulbs, each new bulb growing from a joint of that of the preceding year instead of from a rhizome.

5. The Radicans section—plants without pseudobulbs, having the habit of a Vanilla, or a long straggling Vanda, with a thick jointed stem clothed with a double row of alternate fleshy leaves.

### 1. THE NEMORALE SECTION.

*Epidendrum nemorale majus*, a native of Mexico, with large flask-shaped pseudobulbs 2 or 3 inches in diameter, each with two pale green, strap-shaped leaves on its summit. The flowers form a panicle which springs from the top of the pseudobulb. The inflorescence is often 3 feet long, with from twenty to fifty flowers, each flower 4 or 5 inches in diameter. The flowers are pale mauve, with the apex of the column and three lines at the base of the lip of a darker tint. The petals and sepals are narrow and pointed (lanceolate), and the blade of the labellum is very broad, and folded fanwise. The main peduncle

of this beautiful species is covered with little asperities, which are a very good guide in choosing the bulbs, as these are so similar to many other species with flowers of no great beauty, that even the best judges are often deceived in buying imported plants.

CULTIVATION.

This plant flowers in June or July, and should be kept at rest and cool for four or five weeks after flowering. As the rest is needed in the hottest months of summer this can only be insured by withholding water, but the bulbs must not be allowed to shrivel. Growth, when once it commences, continues through the winter, and the plants should be placed in the lightest and most airy part of the Mexican-house. As water must be supplied stagnant air is most hurtful. In spring, when the flower-shoots appear, the plants should be removed to the Cattleya-house until the flowers are expanded, otherwise these will not be fully developed. Unlike most Orchids, this species only requires a very short rest. It has been confounded with Epidendrum verrucosum, a plant of little or no horticultural interest.

*Epidendrum prismatocarpum.* — A plant with ovate somewhat compressed pseudobulbs, each bulb with a long narrow neck, so that it may be well described as flask-shaped, bearing two bright green leaves. The flowering stem arises from the top of the bulb, as it does in nearly all Epidendrums, provided with bulbs, and bears from eighteen to twenty flowers in a panicle; flowers 1⅛ inch in diameter, sepals of a pale green or cream colour spotted with large black spots, lateral petals of the same colour as the sepals, but without spots; labellum three-lobed, terminal lobe rose-coloured and broad. This plant is very rare; it is a native of the mountainous regions of Central America, and was originally imported from Panama.

CULTIVATION.

This plant requires the same treatment as the last, and I may here remark that good drainage, so essential to all Orchids, is, if possible, even more essential to the well-being of the Epidendrums, which must be kept growing through the winter. The plant is so named from the prismatic form of the seed-pod.

*E. Brassavola* has the habit and appearance of the last species, but the flowers have some resemblance to those of a Brassavola, hence the name. They are 4 inches in diameter, and a number are borne on a raceme. They are very persistent, lasting some weeks. The sepals and petals are of a rich yellowish-brown, but the labellum is white and mauve. It flowers in spring, and is fragrant in the evening. It should be grows in the Mexican-house.

*E. vitellinum.*—From the lofty mountains of Mexico. This plant flourishes at an elevation of from 3000 to 6000 feet, amongst Lichens, Dog-Roses, and Strawberries, facts which sufficiently indicate cool treatment, without which its cultivation cannot be successful. The pseudobulbs are almost spherical, and about the size of a pigeon's egg. They are surrounded by brown scales, and are surmounted by two glaucous green ligulate, or strap-shaped leaves. The inflorescence is racemose, each raceme consisting of from twelve to fifteen flowers. These are of a bright orange-yellow colour, with a small yellow labellum. The petals and sepals are arranged in the form of a fan. It is best grown in the Odontoglossum-house, or a cool greenhouse, where the summer maximum temperature never exceeds 75°, and the winter minimum is never less than 45°. The variety called *majus* differs only in the size of the flowers, and in having broader sepals and petals, which overlap each other.

*E. phœniceum.*—A very beautiful species with large ovoid pseudobulbs not unlike those of E. nemorale. The flowers form a large branching panicle, and the flowering stem is from 2 to 3 feet long, and bears twenty or more flowers of a deep purple colour and fleshy texture. The flowers are 2 inches in diameter. The lip is three-lobed, the lateral lobes square and directed forward, so that they are nearly parallel with each other. The central lobe is rounded and folded like a fan. This plant requires the temperature of the East Indian-house to bring it to perfection. It is a native of Cuba. It is not generally fragrant, but a variety,

*E. phœniceum vanillosum*, has the perfume of Vanilla. The petals and sepals are edged with yellow, and the labellum is white. It is imported from the Antilles.

*E. atropurpureum*, also called erroneously E. macrochilum.—This plant was discovered by Humboldt and Bonpland in Venezuela, but it is also a native of Panama, Guatemala, and Columbia. The pseudobulbs are large, and somewhat pyriform, measuring 2½ inches in diameter. When young they are smooth and dark green, but the old bulbs are paler, and rough; each has two or three broad strap-shaped leaves. The flowers are very large, nearly 3 inches across, sessile on the peduncle. The petals and sepals are green, deeply blotched, and shaded with a rich chocolate-brown. The labellum is three-lobed, the lateral lobes embracing the column. The terminal lobe is white, with a deep crimson spot at its base. A variety is described in which the ground tint of the labellum is rose. This species requires the temperature of the Cattleya-house.

*E. ambiguum.*—A native of Guatemala. This plant has small ovoid pseudobulbs, strongly ridged when mature, with three or four narrow strap-shaped leaves. The flowers are 1½ inch in diameter, star-shaped, with narrow pointed sepals and petals of a very pale green colour—"eau de Nil." The labellum is very broad, strongly plicated, like a fan, white, with fine rays of deep violet and crimson. The inflorescence is a branched panicle, composed of twenty or thirty flowers. It flowers in June or July, and requires an intermediate temperature. It should be grown in the Mexican-house. The flowers last several weeks.

*(To be continued.)*

## ASHTON COURT, BRISTOL.

IN connection with the extensive internal alterations in the mansion here, that have been completed during the present summer, is the construction of a winter garden, or more correctly speaking the conversion of what was originally the clock tower court into a structure of this description. Before attempting to describe this new glass-covered garden, it may be well to say a word about the approach leading to it from without. The entrance is by the central door on the south front of the building, and leads from the terrace which overlooks the flower garden.

Here a large massive door of carved oak gives ingress to the hall, which is situated immediately under the clock tower.

The old ceiling to this hall has been replaced by a beautiful groined roof, exquisitely traced; the arms of the family forming an appropriate decoration in it. This hall admits to the winter garden, the roof of which, being constructed of iron of ornamental character, and roughened plate glass, gives a pleasing diffused light, sufficient for the needs of the plants intended to be grown in it. The floor is tesselated, and is laid with sufficient fall each way from the centre to cause the water—a liberal use of which is indispensable where plants are to be kept in health—to run readily off. The internal arrangement consists of an open central space, with beds around abutting on the walls; these beds are irregular in size and outline, the margins being curved in some places, and acutely angular in others.

At the eastern end, opposite to the principal doorway leading to the rooms at the western end of the Court, a piece of water has been introduced; this also is irregular in shape; at the back of it, and in other places, a little rockwork, composed of well-chosen rugged stones, has been pruned with good effects. Pockets for Ferns and other suitable plants have been made here and there against the walls, and at other points where green drapery was required. In the selection of the plants, and in their disposal, Mr. Bethell has been very successful. I have known him as an adept at this kind of work before, having previously seen what he could accomplish in this line, but have never seen anything of the sort more effective than the arrangement here, although the time available for arranging the whole was limited to some two or three days. Tall Palms, Tree Ferns, Araucarias, Dracænas, Dasylirions, and other plants with handsome foliage form the leading feature in giving a tropical appearance to the place. The filling in is composed of small Palms, Ferns, Lycopodiums, Asparagus plumosus, Imantophyllums, and such flowering plants as are in season. The rustic stonework, and also the outer edges of the beds, are draped with trailing plants, the margins of the miniature pond being alike clothed with suitable things. The walls have been draped with climbing and hanging plants, as also the roof, from which a number of baskets depend, filled with Achimenes, drooping Ferns, and plants of like character, collectively, giving the whole a finished appearance, such as might only have been looked for after a much longer period had elapsed from the time when the builder had completed his work. This garden, as well as the hall adjoining, is lighted by electricity, some twenty-four burners being used.

Amongst the different houses filled with plants in beautiful condition, the conservatory is especially worthy of notice. In it are a host of flowering and fine-leaved subjects, with climbers overhead including Bougainvillea glabra, which to be seen at its best must, as here, have plenty of head room. On the back wall there is an immense example of Cassia corymbosa, occupying a large space and covered with hundreds of its bright yellow corymbs of flowers. Few summer bloomers make so telling a display as this fine old plant when seen as it is here.

ORCHIDS,

both cool and warm species, are making free growth. Amongst summer flowering kinds there is a plant of Saccolabium Blumei, with eight spikes of bloom on a single growth, presenting collectively such an amount of flowers as are rarely met with.

INDOOR FRUITS.

Amongst these still remaining the crop of late Peaches is very good, the fruit abundant, and highly coloured. In the houses occupied by Muscats and late Black Grapes there are good crops that give promise of finishing up well. Mrs. Pince is particularly fine, carrying handsome bunches of full-sized berries well up in colour.

THE GARDENS.

The extensive flower garden was in splendid order; the arrangement differs from that usually met with, inasmuch as there are large clumps of evergreen shrubs and single specimens interspersed freely through the garden. There is also less formality in the form of the beds, varying, as they do, much more in size and general appearance than where a strictly geometrical arrangement exists. The planting has been well done in the different styles of mixed beds of flowering subjects, whilst in others the occupants consist of a single colour, edged in the usual manner with something different. Others again are [illegible] carpet-bedding; these also are very effective, with the soft, delicate tints predominating over the brighter colours. *T. B.*

## THE APPLE CROP IN NOVA SCOTIA.

THE principal orchards whence a supply is obtained for the English market are in Annapolis and King's Counties, and from them the following notes have been received.

ANNAPOLIS COUNTY.

Mr. W. V. Vroom, Clementsport, reports "almost a failure," Nonpareils, Baldwins, and Bishop Pippins yielding "almost nothing."

Mr. A. B. Parker, South Farmington, reports crop below an average even for a short year.

Colonel Starratt, Paradise, confirms his previous report, that the crop will be under average, but that quality never showed better at this season of the year, the fruit being of good size and free from blemishes. A wind storm on August 4 and 5 caused damage in some localities.

Mr. Albert Beckwith, Nictaux, reports Nonpareils almost an entire failure; Baldwins and other winter sorts will give a very small crop; some Gravenstein orchards are pretty well filled, but the crop will not be half that of last year. Taking all kinds there will not be more than a quarter of a crop.

The Hon. George Whitman, Round Hill, reports not more than half a crop. The quantity grown in the county last year was estimated at 200,000 barrels; this season's crop will not be half that quantity. The trees are making good growth, and look healthy.

Mr. L. W. Elliott, Clarence, reports under average. Orchards in grass not well mulched have a light crop; those under cultivation either very well filled, or making a good growth. Baldwins, that did not bear last year, will give a fair crop. Bishop Pippins look well, large and smooth, free from spots (this variety had become so poor of late years as to lose caste in the market); Nonpareils very light. Quinces were very much injured by the cold winter.

KING'S COUNTY.

Mr. R. W. Starr, Starr's Point, reports, as before

that the crop will prove nearly up to the average in quantity, and, judging from present appearances, the quality will be much better than last year, as the fruit is well advanced for the season, and there is very little appearance of "black spot" or "mildew," that have been prevalent during recent years.

Mr. James Patterson, jun., Aylesford, reports below average and not exceeding half of last year's crop in quantity. Plums a complete failure.

Mr. Henry J. Chute, Elm Farm, Somerset, reports below average; Baldwin's short, as it is not their bearing year; Ribston Pippins looking fair, and most other sorts as well as could be expected after the heavy crops of last year.

Mr. C. F. Eaton, Lower Canard, confirms his previous report, that there will not be an average crop, although some orchards look well.

In other counties of Nova Scotia, Apples are grown chiefly for home consumption. *G. Lawson, Secretary, Agricultural Department.*

## THE MARIANNE NORTH GALLERY AT KEW.

THIS grand collection of paintings of "plants and their homes" is now very widely known and appreciated, yet doubtless there are still many persons visiting Kew Gardens who are unaware of its existence. From time to time notices of the pictures have appeared in these columns; and it is worth repeating, if only to show what can be accomplished where there is a will, that they are the work of one person—Miss Marianne North, who presented the building and all its beautiful contents to the public. The gallery is free to all, as everything else is in Kew Gardens, and open from 1 till 6, or dusk in winter. It was thrown open three years ago last June (see *Gardeners' Chronicle*, n.s., xvii., 1882, p. 763), when there were upwards of 600 pictures representing nearly 1000 of the most beautiful and singular forms of plant life in the most remote and diverse parts of the globe. There were pictures enough indeed to fill the gallery, but the painter did not intend ceasing to wield her deft brush for the pleasure and instruction of those of her less fortunate fellow creatures who are unable to visit distant shores; and accordingly a new wing was at once planned and built for the reception of the results of other distant journeys. First came a splendid addition from South Africa (see *Gardeners' Chronicle*, n.s., xx., 1883, p. 564), followed by the rare and elegant Palms and other plants of the fast disappearing native flora of the remote Seychelle Islands; and this year have been added many of the glories of the vegetation of extra-tropical western South America. Both the original gallery and the new wing are now full to overflowing, the walls being actually covered from dado to cornice. Familiar and unfamiliar flowers and fruits are there from almost every clime, often associated with dull or brilliantly coloured birds, or butterflies, or curious insects, or mammals, or reptiles. There may be seen more or less numerous examples of the vegetable and animal, and sometimes of the human life, of Teneriffe, of South Africa, the Seychelles, Ceylon, and India (from Bombay and Calcutta to the slopes of the towering Himalayas), of Java, Borneo, and Japan, of East, West, and South Australia, of Tasmania and New Zealand, of Chili, Brazil, and the West Indies, and finally, of California and eastern North America. What wealth of form and colour! Everybody should go to see them, especially every gardener, for there may be seen pourtrayed many magnificent plants which, from various causes, cannot develope their full beauty in this country, even under the most careful and skilful treatment.

The last addition, which is from Chili, is particularly interesting, alike for the paintings of well-known trees, and shrubs, and herbs, in their homes, and of almost unknown plants of great beauty. As Miss North says herself (*Pall Mall Gazette*, March 11, 1885), her chief object in going to Chili was to see and paint the old forests of Araucaria imbricata, "known in England as the Puzzle-monkey tree, rather unreasonably, as there are no monkeys here to puzzle; probably they crossed the Cordilleras in disgust at the general prickliness of all plants here, especially the Araucarias, and never came back again." Miss North had previously seen and painted the Brazilian Araucaria, and the more important food-yielding Bunya bunya (Araucaria Bidwillii) of Queensland, besides the small-leaved A. excelsa and A. Cunninghamii; so she approached her task with all the advantages of a critical knowledge of her subject. Araucaria imbricata is the most familiar of its genus to the inhabitants of this country, being planted in all sorts of suitable and unsuitable places, including the tiny fore-garden of many a suburban cottage. Living plants of it were introduced into this country in 1796 by Archibald Menzies, who accompanied Vancouver on his voyage round the world; and one of them still survives at Kew, though it has lost its lower branches, and is not in a vigorous condition. In favourable situations in this country, as is well known, it retains its branches from the ground upwards to a height of 60 feet and more; but in its native country, as Miss North's pictures show, the branches successively die upwards, and the artist describes the Chilian Araucaria forests in the following words:—"Soon after reaching the first Araucarias we found ourselves surrounded by them and all other trees gave way to them, though the ground was still gay with purple Peas and orange Orchids, and many tiny flowers whose name I did not know, and which I had not time to paint—such flowers when picked die almost directly. Many hills and the valleys between were covered with old trees, covering some miles of space, and there are few specimens to be found outside of their forest. I saw none over 100 feet high or 20 feet in circumference, and, strange to say, they seemed all very old or very young. I saw none of those noble specimens of middle age we have in some English parks with their lower branches resting on the ground. They had not become flat-topped like those in Brazil, but were slightly domed, like those of Queensland, and their shiny leaves glittered in the sunshine, while their trunks and branches were hung with white lichen, and the latter weighed down with cones as big as one's head. The smaller cones of the male trees were shaking off clouds of golden pollen, and were full of small grubs, which, I suppose, attracted the flights of parroquets I saw so busily employed about them. These birds are said to be so clever that they can find a soft place in the great shells of the cone when ripe, into which they get the point of their sharp beak, and fidget it until the whole cracks, and the nuts fall to the ground. It is a food they delight in, and men too, when properly cooked, like chestnuts. The most remarkable thing about the trees was the bark, which was a perfect child's puzzle of knobby slabs of different sizes, with five or six decided sides to each, and all fitted together with the neatness of a honeycomb. I tried in vain to find some system on which it was arranged."

This bark is, indeed, truly wonderful, and very effective it must be in Nature. Gay (*Flora Chilena*, v., p. 415) describes it as being built up of polygons of various sizes, like a piece of mosaic work.

Perhaps the most striking object in the Chilian paintings is the colossal Bromeliacea, a species of Puya, the name of which is a little uncertain, because several names have been proposed for what in all probability are differently coloured varieties of the same species. Miss North's own description of the specimen she painted (reproduced from *Gardeners' Chronicle*, n.s., xxiii., 1885, p. 78) conveys a good idea of the aspect of this noble plant, which is hardy in favourable situations in this country:—"The flower-spike is over a yard long, its stalk 6 feet. It has sixty spikes, arranged screw-fashion, round its stalk, each about a foot long, and round these are rosettes of flowers, and some score of buds of the tenderest green or lemon colour. The great heads, before the flowers come out, are wrapped up in covers of white kid tinted with salmon, getting darker as they fall aside and the lemon buds push themselves out, and the first flowers which open round the base of the spikes near the stalk are of the purest turquoise-blue; the new rosette which replaces them is darker, metallic blue, and then all the others seem to get more and more green and faded the farther they get from the stalk, and more separate, with a background of brown bracts or leaves, the original white kid covers."

The foliage, it should be mentioned, is like that of the Pine-apple. Gay recognises only one arborescent species of Puya, the flowers of which, he says, are of a somewhat greenish-yellow, adding that the plant was rather common in dry places in the central provinces, where the stem was called *chagual*, or *maguey*, the leaf *cardon*, and the flower *puya*. Puya Whytei (Hooker, *Bot. Mag.*, t. 5732) is almost certainly the same species as Miss North has painted, and this is not specifically different from P. cœrulea (Miers, in *Bot. Reg.*, 1840, t. 11); it is a superb plant, and flowered in the open air in the establisment of Messrs. Veitch, of Chelsea; and in Mr. Tyerman's garden at Tregoney, Cornwall, from a plant in which our page illustration, October 1, 1881, was taken. Puya chilensis, syn. P. coarctata (see *Bot. Mag.*, 4715), apparently differs very little, if at all, except in the colour of the flowers, which are of a greenish yellow. Miss North's picture represents the whole inflorescence of the Puya natural size, and the plant is shown growing in several of the views. In the dry region, visited and painted by Miss North, various Cacti abound, and are very conspicuous, notably a Cereus (probably C. quisco), and the common Opuntia (Cereus quisco) is related to the (in Europe) more familiar C. peruvianus, and is, according to Gay, of magnificent aspect, and the commonest in Chili, growing as much as 20 feet high.

Another conspicuous plant in the Chilian paintings is Embothrium coccineum, which was in its full beauty at the time of Miss North's visit. The Acacia (or Prosopis?), and bird's nest referred to in the letter cited above, is one of the artist's characteristic pictures of birds and flowers. Among many unknown forms gardeners and amateurs will recognise such old friends as Schizanthus, Loasa, Fabiana, Tropæolum, Tacsonia, and Eccremocarpus. But this notice is already long enough, and readers, who can, are again advised to go and see the pictures. They are immediately to the left on entering, where the Teneriffe ones were first placed, and near to the Brazilian. The present edition of the catalogue does not contain descriptions of the South African, Seychelles and Chilian pictures; but this want is in a measure supplied by written names and notes on cards below them. *W. B. Hemsley.*

## COMMON GARDEN INSECTS.

THE grass at our feet is the abode of countless numbers of insects. The roots often pierce the roof of underground habitations, and many a stalk is cut down by eager little teeth to make way for the opening of subterranean passages leading to insect-dwellings. No better example of this numerous grass-life could be given than that of the tribe of grasshoppers. Trees, especially the Oak—which it has been calculated gives support to no less than 200 distinct species of insects—are much frequented by this class of insect, as a type of which we give the large species (Acrida viridissima), shown in fig. 62, amongst the grass at the foot of the Oak. The loud buzz emitted by this insect is caused, as in crickets, by the friction of the bases of the elytra or wing-cases. They sing during the months of July and August, and a portion of September, especially in the evening: the males only sing, the females produce no sound. It is a remarkable fact that the Grasshopper Lark, which feeds upon these insects, emits a similar noise. When multiplied by thousands of individual insects, the song of the grasshopper merges into a loud and continuous murmur. It is a pretty insect, of yellow-green colour of variable depth of shade which harmonises so well with the leaves that it is frequently a difficult matter to discover the singer; moreover, the slightest alarm given to the insect in the way of moving a neighbouring leaf, &c., is sufficient to cause its instant silence. When walking in the vicinity of grasshoppers those immediately around cease to chirp, and their ears, or rather organs of hearing, seem to be no less acute and sensitive than are the wonderfully sharp eyes of butterflies. The leaping power of the grasshopper is surprisingly great; we had the curiosity to measure accurately the leap of a grasshopper measuring three-quarters of an inch from head to tip of folded wings or elytra. We found that this insect sprang at one bound on level ground a distance of 4 feet 5 inches, or over seventy times its own length. Another insect, however, must have immensely greater leaping power than this—though we have never actually used the measuring tape in this case—namely the common "frog-hopper," to which curious little insect we shall refer hereafter.

The great green grasshopper has sharp and powerful jaws, and can inflict a slight wound on the human hand. The ovipositor of the female is a curious instrument, and gave rise to the generic name applied by some entomologists to this insect—Phasgonura, meaning sword-tailed. The eggs are hatched in early spring, the larvæ being very minute, somewhat similar in appearance to the fully grown insect, but devoid of wings. On the Oak tree, on that portion where the bark is removed, is seen in our drawing

(fig. 62) one of a class of insects exceedingly destructive to many trees. This is one of the long-horned beetles which, both in the larval and perfect states, are destructive to timber. The species given is Aromia moschata, or the Musk beetle—a pretty insect possessing, as its name implies, the pleasant odour of musk. It emits, like the last-mentioned insect, a sound or squeak, which is produced by the friction of the head-shell against the thorax-shell. It generally frequents the Willow, but does not confine itself to that tree. The eggs are deposited in holes bored in the bark of the tree, and the larva eats its way into the wood, especially the wood immediately beneath the bark, the diameter of its borings increasing as it grows.

Another interesting tree-devourer is the Sawfly (Cimbex lutea), shown in the figure in the act of flying, nearly above the grasshopper. The instrument from which it has derived its name is a most ingenious structure, being, in fact, two veritable tenon saws with sharp compound teeth at the tail end or abdomen of the insect. The saws work side by side and in opposite motion. When the female is about to deposit its eggs it adroitly cuts a groove in a twig or leaf, and passes an egg between the two saws into the groove, accompanying it with a glutinous secretion which firmly fastens the egg and retains it in its groove. One egg after another is deposited in a similar manner until all have been disposed of. The larvæ, as soon as hatched, commence the business of eating, and some become full-grown, as seen in the figure on a leaf at the top left-hand corner. This larva has the property to discharge from tiny apertures along the sides of its body a greenish fluid, which serve no doubt as an efficient protection from many of its enemies. The chrysalis, or cocoon, is of brown colour, and leathery material, seen in the figure as an oval mass attached to a twig. The cocoon and its dormant inmate survive the colds of winter, and in early spring emerges the perfect fly.

A class of insects, well known under the general term of "weevils," are to be found in great numbers and variety, the different species of which vary in colouring from the most brilliant green and gold to the dullest brown and black, inhabiting the Oak and other trees. Most of the tribe of weevils have, like butterflies and moths, a covering of microscopic scales, which impart to some species remarkable beauty, but which readily rub off. A gorgeous little beetle, found plentifully on the Hawthorn, especially in blossom-time, and named Otiorhynchus picipes, is possessed of a brilliant green and gold covering which sparkles in the sunshine with uncommonly fine effect. Another common but not so pretty weevil, styled Phytonomus tigrinus, is shown on the left of the sawfly, on an Oak leaf. It is notable, not on account of its beauty, but for its remarkable cocoon, which is considerably larger than the insect, and constructed of a silken netting spun from the body of the larva, and resembling the webbing of some large spiders. It is attached by silken threads by the upper portion to the underside of a leaf or other convenient object, and hangs suspended.

Ladybirds (Coccinelidæ) are another well-known tribe of beetles, which somehow or other are always treated with more tolerance and excites more interest than any class of insects except butterflies—of which assertion no better evidence exists than in our child-days nursery-rhyme books. There are many species of ladybirds which are difficult to distinguish one from another, as the same species varies greatly in colouring, and in the number of its spots on the wing-cases. In the illustration we have figured a common species (Coccinella septem-punctata) in the act of flying. It has seven black spots—as its name indicates—on its elytra; it feeds alike in the larval and perfect states upon the destructive greenfly, or plant-lice, the diminutive but powerful enemy of gardener and farmer.

One of those elegant and active little butterflies recognisable in our figure as being one of the blues is represented on the right of the grasshopper with its wings folded over the back. This is the Bedford blue (Polyommatus Alsus) the smallest of British butterflies. *C. Francis Young.*



Fig. 62.—Common garden insects. (see text.)

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"Lusiadas" Rose.—Some of the Continental horticultural journals narrate how a Portuguese nurseryman has offered a new carmine coloured Rose for sale at a high price. Unfortunately it has been discovered that this splendid new Rose is simply Celine Forestier, which has been suffered to absorb some aniline dye, in the same manner that the blooms of the white Lily are occasionally treated.

## SEED RAISING.

(*Continued from p.* 282.)

Moisture.—We sow seeds in soil, not because the chemical nature of the soil itself has any influence on the germinating process, but because of its being a suitable medium in which the conditions essential to germination—*i.e.*, warmth, moisture, and air—are brought to bear upon the seed; it also is there ready to receive the roots of the seedling as they develope, and to supply the plant with food as soon as it begins to shift for itself. Moisture and heat are two principal causes of germination; without them germination is impossible. The water supplies oxygen sufficient to enable the seed to get rid of the large amount of carbon which was necessary so long as the seed remained dormant, but which alone was detrimental to growth. Water also has a softening influence on the often hard shell in which the seed is enclosed, thus rendering the escape of the embryo from the seed much easier than if the outer coats remained hard. To afford the seeds the amount of moisture they require, we either bury them in moist soil or sand, or place them under atmospheric conditions such as would fulfil the same purpose. So soon as absorption takes place, germination will or ought to commence. Old seeds or immature ones will often fail to grow if kept very moist, but may be induced to push into activity by keeping them comparatively dry till germination has commenced, increasing the amount of moisture as growth continues. "When the vital energies of a seed are diminished, it does not lose its power of absorbing water, but is less capable of decomposing it. The consequence of this is that the free water introduced into the system collects in the cavities of the seed and produces putrefaction; the sign of which is the rotting of seeds in the ground."

At Kew, where all kinds of seeds are received in large quantities annually, it is the custom to treat old or sickly-looking seeds as follows:—The seeds are first thoroughly dried, so as to destroy any germs of decay or disease of any kind which may have attacked the seeds before their arrival. They ar then spread out thinly upon slates, placed in a warm and moist atmosphere, and covered with a sheet of paper. If vitality has not been destroyed, this

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treatment generally brings about germination, on the first sign of which the seeds are placed in soil. Any healthy seed will germinate if immersed in water of the required temperature, but unless the plant be an aquatic the excess of water soon proves fatal. For all seeds of terrestrial plants, therefore, no more moisture should be allowed than is sufficient to keep the medium on which the seeds are sown in a moist condition. An excellent guide to follow is that of the plants to which the seeds belong, giving their seeds the same amount of moisture as would be enjoyed by the plants themselves.

In the case of very fine seeds which are sown on the top of the soil, it is wise either to stand the pots containing the seeds in shallow pans of water, so that the soil may be kept moist by capillary attraction, or to effect the same purpose by dipping the pots almost up to the rim in water, and holding them there for a few moments till the soil has become thoroughly moistened. The length of time seeds may be allowed to remain in water without injury depends on the nature of their outer coverings. Mr. Darwin made numerous experiments for the purpose of discovering how long the seeds of land plants might be immersed in sea-water without losing the power to germinate. He found in many instances the time was unusually long, some of the seeds thus tested germinating after an immersion of 137 days. In like manner many seeds may be kept in fresh water for a long time, if the temperature is not high enough to excite germination.

It is quite a common practice with gardeners to steep hard-coated seeds in warm water for a few hours before sowing, the effect of which is the softening of the seed-coats and the excitement of the vital principle, so that germination is much quickened. Peas, Beans, Erythrinas, Acacias, in fact all those seeds belonging to Leguminosæ, may be thus treated before sowing. The effects of soaking in warm water are sometimes of a startling character. At Kew, some time ago, a number of large seeds of various kinds were examined after having been sown in a warm house for over a year, and were found to be quite intact, but showed no signs of germination. They were then placed in water heated to 160°, and allowed to remain in soak for twenty-four hours, after which they were re-sown. In less than a fortnight after this most of the seeds had begun to germinate, and nearly every seed eventually grew and formed a strong plant. In the same establishment large numbers of Brazil-nuts, Sapucaya-nuts, and other large hard-coated seeds, are annually sown, and it is found that by carefully removing the shells before sowing, germination takes place much more speedily than when they are allowed to remain. The same plan is often had recourse to in the treatment of seeds of Olives, Coniferæ, &c.

Aquatic plants such as Nymphæas, Victoria, Euryale, the Buckbean, &c., naturally shed their seeds in water, where they remain dormant as long as the temperament of the water is low, germinating freely and developing into plants on the return of a higher temperature. Although it appears to be Nature's plan to preserve these seeds in water, yet they may be kept for a long time in a perfectly dry condition without losing their vitality. Seeds of Nelumbium have been known to germinate after having been kept dry for over one hundred years.

These seeds may be kept equally well in water if the temperature is not allowed to approach that which induces germination. There are instances recorded of seeds which had commenced to grow having been dried again, and which, on being replaced in a moist situation, grew freely without suffering materially from the check. But these are exceptional cases, and by no means such as need be regarded as of horticultural importance. There can be no doubt that when once germination has begun, any check to its progress is as likely to prove fatal as it would be in the case of eggs after incubation had commenced. All seeds, therefore, should be kept dry and in a low temperature till required for sowing, and when once wetted, no check in the shape of drought or low temperature should be permitted, for even if such check do not prove fatal, it cannot but prove highly injurious to an organism of such extreme delicacy as a germinating seed or seedling.

### LIGHT.

It is generally believed that darkness assists germination, and that light retards it, but whether the presence or absence of light alone affects the germinative process either one way or the other has not yet been clearly shown. Various and numerous experiments have been made to test whether the action of light on germinating seeds is for their good, and the general conclusion thus arrived at appears to favour the view that it is not. If this were not so, it might be asked, why cover seeds with earth, or, if fine, place them in a darkened position? The answer to this question must be, that seeds are covered, not so much to exclude light as to keep them uniformly moist, and to prevent irregularities in temperature. For all seeds sown out-of-doors we know that a covering of soil, varying in depth with the size of the seeds, is necessary, and the same is understood to apply for seeds under glass, unless they be very small. Yet we know that moisture, and a certain degree of heat, along with atmospheric influences, are sufficient to cause any seed to germinate, whether placed in darkness or in bright light.

Frequent proofs of this occur in the propagating department at Kew, where, as is stated above, many kinds of seeds are sown annually. In addition to this, the discussion on the question of darkness for seeds, which took place in the horticultural papers some time ago, led to various experiments at Kew to test how far light affected the process of germination. Seeds were sown on the surface of soil, on cocoa-nut fibre, and in water in a bell-glass, and to prevent evaporation squares of glass were placed over the seeds in such a way as would admit sufficient air without excluding any light. The result of these experiments appeared to show that light did not prevent, nor appreciably interfere with, germination, the seeds starting into growth at about the same time as those which were covered with soil in the usual way. Before it can be satisfactorily proved that these conclusions were safe more experiments will be necessary, but so far as we have gone the evidence gathered favours the opinion that light alone does not interfere with the germination of seeds. Every gardener knows how freely the smallest seeds will vegetate if sown on the surface of soil, covered with a pane of glass and placed on a shelf near the light; seeds of such plants as Gloxinia, Gesnera, Primula, Calceolaria, Begonia, and Bertolonia are commonly sown in this way. Orchids, too, are raised from seeds scattered upon the surface of living sphagnum moss, where darkness is out of the question. If fine seeds are not injured by light, may we not conclude that larger ones are equally unaffected by it? Experiments like the above prove that such is most probably the case.

As already stated, seeds are covered with soil to afford them the necessary moisture and warmth; it is also necessary, at least, in the case of large seeds, to enable the root to take firm hold of the soil, by presenting an opposing force to the pressure of the root as it prolongs itself and pushes its point into the ground. For these reasons, irrespective of the question of light, a covering of soils is beneficial to all but the smallest seeds. Various scales have been given of the different depths at which seeds of different sizes should be sown, but the best we can suggest, and the one found least likely to mislead, is that the thickness of the covering of soil for seeds should not exceed their own diameter. For seeds sown out-of-doors it is perhaps better to sow a little deeper, for the sake of a proper degree of moisture, and to prevent their being eaten by birds, &c. Under glass this rule can never be far wrong. Deep sowing is often unfavourable to germination, rather because of the exclusion of a due amount of air, than through darkness or the absence of any other condition. Numerous instances of this are not unfrequently recorded; as, for instance, when land has been cleared of trees, or when the earth has been turned over to any depth, a new vegetation springs up, which is often composed of plants unknown in the near neighbourhood of the newly-cleared land, and must therefore have sprung from seeds buried in the earth at too great a depth to permit vegetation. Seeds thus buried retain their vitality for a very long period. At Kew it sometimes happens that seeds which on first sowing were buried too low down in the soil have remained dormant for a long while, but on bringing them nearer the surface they generally germinate soon.

Dr. Lindley mentions an instance of how seeds of Flax were covered by deep sowing: "The injuriousness of covering seed with too much earth arises less from the superincumbent pressure of the soil than from the exclusion of atmospheric air, which is quite indispensable to germination. The seed of the common Flax comes up at different periods, according as it is planted in 1, 2, or 3 inches depth of soil; if it be sown 4 inches below the surface it will not come up at all. Not that air does not penetrate to this depth in the soil, but the quantity of air will very much depend on the looser or denser character of the soil."

### SOIL.

For all seeds of any size and the vegetative power of which is strong and quick-acting, the soil most suitable is such as the plants would thrive best in when large. It is always best to use a finely-sifted soil, at least for delicate-rooted seedlings: for the smallest seed the mixture ought always to be sifted through a sieve with a ¼-inch mesh. Various mixtures have been proposed as suitable for all seeds: Lindley suggests equal portions of peat, loam, and sand, others advise all sand, and others prefer sandy loam. If what has already been stated is accepted, it will be seen that the plan here advised is a safe one—viz., to use a mixture similar to what the plants would prefer, plus a larger quantity of sand. If it be borne in mind that the nature of the soil does not in any way affect the process of germination, providing it does not exclude essential conditions, it will be seen that the soil most likely to satisfy the wants of the young plant as soon as it begins to search for its own food is that which it thrives in when strong. Mr. Anderson Henry, who was a most successful raiser of delicate seeds, preferred a compost of equal portions of peat, loam, and sand with a little pulverised leaf-mould added. It is, however, difficult to lay down a hard-and-fast rule in this matter, owing to the varying nature of different soils in different localities—what is good for a certain plant in one place being unsuited for it in another. In this and in all other questions that concern the management of seeds a great deal must be left to the intelligence of the gardener, to whom, if the fundamental principles of germination are properly grasped, the special conditions essential to the welfare of seeds and seedlings will readily suggest themselves. By first of all inquiring into the nature of the plants from which the seeds have been obtained, and ascertaining the conditions under which they are known to thrive, the treatment necessary for their seeds may be soon arrived at. *W. Watson, in "Cassell's Popular Gardening."*

*(To be continued.)*

## ENSILAGE OF MULBERRY LEAVES.

DURING the silkworm rearing season in Northern Italy a large quantity of Mulberry leaves are sent by rail from one place to another, and in many cases the railway administration run special night trains for this purpose. The leaves are packed loosely in sacks, and often arrive at their destination far from fresh, and consequently, if not totally unfit, at all events cannot afford a wholesome food for the nourishment of these insects. An experiment was made during the present season, by a silk producer in Lombardy, in sending the leaves compressed, and for this a bale was made, weighing 116 kilos., by placing the leaves between two round pieces of board (in this case the bottoms of barrels), and compressing them in an ordinary wine-press; the bale was then firmly secured with iron wire. By some oversight this bale of compressed leaves, made on May 23, was not forwarded to Milan, and from thence to Niguarda, until the morning of the 31st, and consequently it did not arrive at its destination until later. On opening the bale the leaves, with the exception of about 2 inches in thickness round the outside, were found to be perfectly fresh and sweet, and even these were only faded, and found to be not unfit for food.

This is a conclusive proof that the nutritive qualities of the leaves can be preserved for some time, if compressed, and the air thus excluded from them; care, however, must be taken not to crush them, and injure their tissues by excessive pressure. From that it would appear that a system of ensilage might be adopted with advantage for preserving Mulberry leaves in the same way that it is for forage. Another advantage of such a plan would be that the leaves so compressed would be reduced in bulk, and conse-

quently fewer trucks would be required to carry a given quantity of leaves than there is in the ordinary way; and by ensiling the leaves grown on the warmer side of the Apennines—as, for instance, on the "Riviera" of Genoa, &c.—it would be possible to supply the silkworm rearers of Piedmont and Lombardy during backward seasons, or when, from other causes, the leaves are scarce and expensive. *Journal of the Society of Arts.*

# FORESTRY.

## CLEARING UP AFTER STORMS.

The severe storm with which this country was visited on the 9th and 10th of the past month, and which did so much injury to farm and garden crops in general, will no doubt have given most foresters extra work in the way of removing fallen trees, pruning broken and twisted branches, fence-repairing, road-clearing, and the bestowal of extra vigilance on all watercourses, including ditches, closed drains, and culverts. Wherever trees have been uprooted, the policy grounds should receive first attention. These should be cut up, removed, and the roots buried or otherwise disposed of without delay. A good way to get rid of upturned roots is to dig a hole of sufficient size immediately behind them, and into which they will fall when severed from the trunk. Dig the hole of sufficient depth that the root may have a covering of at least 2 feet of soil. In some cases where an out-of-the-way place is contiguous to the timber, it may be convenient to have the roots conveyed there, but usually the quickest and least expensive method to dispose of such is by burying. In removing broken and twisted branches, prune off close to the stem, and paint the sear with tar, or deface by rubbing with a damp sod of earth. Marks of pruning being objectionable when they are within view of drives and walks, should always be obliterated.

### Nursery Work.

With the present mild, damp weather, weeds are growing apace, and to keep them down will require the utmost vigilance and perseverance on the part of the nurseryman. The old adage, "A stitch in time saves nine," is perhaps nowhere more applicable than in nursery management during the later and present months, for if once weeds are allowed to run to seed, and these to ripen on the plant, the work of eradication is vastly increased. During wet weather hand-weeding is preferable to using the hoe, but should it be necessary to resort to the latter method all weeds should be raked off without delay. Take advantage of damp weather for the weeding of seed-beds, as the risk incurred by injury to the young plants when removing these will be thus greatly obviated.

Transplanting of two years seedlings may now go on, for if left later the winter frosts are apt to lift them from the lines, thereby causing considerable damage to their tender rootlets, whereas by planting now they will get well established in their new quarters before severe weather sets in. The size of the plants will be the best guide as to their distance apart, although we may state that for the ordinary run of two years' seedlings 9 inches between the lines and 4 inches from plant to plant will be ample, more especially as it will be found advantageous to again transplant at the end of another year. Should dry weather set in after planting, a thorough watering in the evening and slight protection of Spruce Fir branches for the first week or so will materially assist in keeping down the death rate.

Keep a sharp look-out amongst young nursery stock for insect pests, which are more or less abundant in various districts at present. Infested plants should be pulled out and burned, although in the case of rare and valuable Conifers it may be well before resorting to such extreme measures to hand-pick and syringe with some of the numerous advertised insecticides.

### Seeds.

An occasional look to the store boxes of Yew, Holly, and Thorn seeds should be given, and the sand moved gently about, so that fermentation of the fleshy outer covering may go on evenly and gradually.

Birch seeds may now be collected from trees of good habit, sound constitution, and medium age, part of which may be sown at once in well pulverised sweet soil, and the remainder, after being thoroughly dried by placing in flat, shallow boxes, stored away in a dry, airy loft, until required for use in spring. The method often adopted of storing seeds in bags is highly objectionable and should never be tolerated, the best plan being to place them thinly on shelves or in shallow boxes, in either of which places their germinative powers are, if properly dried previous to storing, unimpaired.

### Fencing.

Fences of all kinds, but more particularly such as enclose woodlands, will at present require a greater amount of attention than at any other time, as cattle naturally seek the shade to avoid extreme heat and being troubled with flies. Specimen trees in the park and grounds should also be ensured against the attacks of stock, more particularly horses, which often work wide-spread destruction by nibbling the bark from both stem and branch. Rabbit-proof nettings, hurdle and continous wire-fences should also receive attention in the way of repairs and painting. As wire expands with heat and contracts during cold weather, the hint should be taken to have these tightened at present, and slackened, so as to avoid breakage, at the approach of winter. See that young trees that were planted out during the past season are not swaying about with the wind, and that the moorings of large transplants have not become broken and do not chafe the bark.

### Faggot Making.

Branches intended for faggot-making should be collected in heaps along the outskirts of plantations, or contiguous to woodland drives where they may be bundled and conveyed to the faggot-shed for use as required. Here we find it well to divide faggots into two kinds, large and small, the latter for fire lighting, and composed principally of Larch and Spruce branches of not over ½-inch diameter, but usually less; and the former of almost any branches up to 2½ inches in diameter, and used for stove and heating purposes. Small faggots bound tightly and of not less than 1 foot in length by 6 inches diameter should realise at least 5*s.* per 100; while the larger which, are usually 9 to 10 inches in diameter by about 18 inches in length, cannot be made and delivered at a less cost than 10*s.* per 100.

### Hedging.

The pruning or switching of all fences will now be well advanced, but where the work is in a backward condition extra assistance should be rendered until the work is got well in hand. Hedges in the park or other conspicuous positions may, for the sake of neatness, receive two trimmings annually—the first when the growth is fully perfected, and the second during the latter part of August. A sharp tool in the hands of an experienced workman may be used with the utmost benefit to hedges generally, but an ill-kept tool used by a novice is frequently productive of very unsatisfactory results. Young fences that have been formed during the past year will require a little extra care and attention in the way of cleaning and weeding, neglect of which tells sooner or later on the vigour and growth of the plants as well as ultimate value of the fence. *A. D. Webster, Penrhyn Castle, North Wales.*

# MARKET GARDENING.

(*Continued from p. 205*)

Before I continue my remarks in the order originally marked out, I shall digress briefly to acknowledge "A. D.'s" useful remarks in a recent number of the *Gardeners' Chronicle*, having reference to my past notes upon the field culture of Vegetable Marrows. The practice he describes of growing somewhat earlier crops than can be secured by open field culture, pure and simple, under temporary frames or hand-lights, is occasionally practised in this neighbourhood also. My intention was, however, to show how the bulk—ninety-five per cent. of all that are marketed is grown as freely as the hardiest of summer crops. Nor do I see my way to admit, judging of the expense of preparing the beds referred to by your correspondent, that the slightly enhanced prices early grown produce secures compensate for the outlay.

Vegetable Marrows never do or will fetch fancy prices, and it is astonishing how (with all the nursing—I may call it codling—under glass) rapidly outdoor grown mallows follow up those that have been protected; indeed, a case of action at law, or threatened action, is going on near me at this time wherein a jobber offered such a grower an exceptional price for what he considered early forced produce, but which, when he took them to market, he could not realise, and so elects not to pay his loss.

But there is an important consideration connected with manure-beds, protected or glass-hastened, *versus* field culture, I had not intended to touch upon, but for "A. D.'s" remarks; but it will evidently be of some service to gardeners that I should refer to nevertheless. It is this. Whereas field culture produces large numbers of Marrows of a large size under such methods as I have described—taking the fruits continually until the frosts of autumn cut down the foliage—garden growers, even with their heaps of manure, glass protections, &c., usually, because their employers like them to cut all the fruits young, whereas the market growers cut tons of fruit, for the crop is very weighty.

In gardens where only a moderate quantity of immature fruits are secured, heaps of manure, frames, hand-lights, &c., are employed! Certainly "A. D." can have no desire to uphold such an anomaly, though his useful remarks may, to some readers, imply this to be the case. I could understand a theory where the inverse was advocated, comprising all these outlays for heavy crops in continuity with large fruits, not otherwise. There is, as "A. D." would wish to emphasise, danger from placing such seeds into the open ground too early, and, apart from cold and excess of moisture, mice and rooks prove very troublesome, but by attention it is soon seen how first sowings succeed, and duplicate sowings are easily made. We rarely if ever observe actual failure, not even this season, with its cold spring months. Besides, seeds are easily saved in immense numbers to meet all demands, though exceptions occur, as I had myself to pay 8*s.* per pound for it only a few years ago. Finally, as regards this matter, I hope yet to see Vegetable Marrow seeds sown in sunny sites in open quarters, even though I may not see the total abandonment of the older practice.

Cucumber growing in the open fields, or what is perhaps accurately described as the growth of ridge Cucumbers and Gherkins, is still plentifully carried out in certain disrticts in the home counties, &c. This industry, however, all but invariably associates itself with kindly, suitable native soils, without which it would be, if not difficult, certainly expensive, to grow them profitably. The seed bed is prepared in a similar way to that explained for Marrows but with more liberal supplies of manure. As a rule, also, screens or "nurses" consisting of rows of Rye are sown thickly between the future rows of Cucumbers. The Rye grows up early in spring and protects the plants from cold winds and maintains a little additional warmth around them. The seeds are dibbled out into the open ground during the month of May in the same way as are Vegetable Marrow plants, generally germinating and forming robust plants upon which are produced a plentiful succession of fruit. These are very acceptable, being sold by itinerant vendors throughout the poorer parts of the metropolis and all large towns, the dwellers within which would rarely taste Cucumbers but for such vendors. Nor is the crop to be despised. In the matter of flavour black-spined, ridge, and Gherkin Cucumbers, field grown, are thought by some to be better flavoured than others grown under glass. Besides disposing of these crops in this manner, growers have moreover heavy purchasers in the pickle makers.

Beet, Carrot, and Parsnip crops occupy a large area under culture, and the cultivation of Beetroot is extending beyond its former limits. Probably this is a fact applicable to the other two kinds of root also. At a time not very remote such crops had become more or less a monopoly in a very few hands and were confined to certain districts; demand, however, invariably creates supply, and so much so in the case of these, that the produce now is in excess of demand.

Field culture here again, possesses a decided advantage over and above that of the large majority of private gardens. It is well known to good judges that field-grown Beetroot is the more palatable of the two—and the same applies to Carrots and Parsnips, already referred to. The reason is not far to seek. Field ground has its virgin earth less exhausted than worn gardens. But a more important fact than this exists. All these root crops

require free and uninterrupted air and sunlight, which they do not get in a large majority of gardens, and where tree ornamentation (in itself so desirable) does so much injury. Thus, with such freedom from all that is inimical, the leaves grow and make growth, such as enclosed garden crops—the foliage upon which is generally drawn—cannot attain to.

In the face of such facts as these is it to be wondered at that enclosed gardens, with all the skill possible, fail to give the size? Nor should employers complain on the score of quality, seeing it is not within the resources of the gardener to counteract such drawbacks. The lands are habitually cultivated deep and well for these crops—deep stiff loamy soils being chosen for Parsnips, sandy soils, similar in depth for Carrots, and one midway between them for Beet, all being grown in drills, with often greater distances between rows and plants than is habitually given in gardens.

Parsley often during or following hard winters, is a very profitable crop, as it is occasionally sold by parts of a pound weight. The practice is to sow in drill rows during the month of July, and to "set out the plants" to proper distances in process of hoeing them. Market garden farmers possess, as a rule, an excellent selection. Immense quantities of it are dug up and bunched with the roots entire, though during severe frosts in winter this is not done. *William Earley.*

## STRIKING ROSES FROM EYES LIKE VINES.

An examination of the base of the accompanying Rose plant (fig. 63) will afford conclusive evidence of the fact that Roses may be propagated in a similar way to Vines. In the present case a few dormant buds were cut out of the Rose shoots early in April last with half-an-inch of the bark and a little of the wood on either side of it attached. They were then inserted in a pot filled with mould, and having a surfacing of sand, they were placed in a cutting frame, and afterwards watered when necessary. The idea of thus experimenting with the Rose with a view to working up a stock of choice varieties on their own roots expeditiously occurred to me at pruning-time. And this, I think may be done by putting the buds in closely together in boxes filled with sandy soil late in the autumn, and then placing them first in a cold frame for a few weeks until they have callused, and afterwards in gentle heat, potting them off singly into small 60's as soon as they have made an inch or two of growth, and again placing them in a growing temperature near the glass, and shading them for a few days from bright sunshine until the roots have taken to the soil. *H. W. Ward, Longford Castle.*

[We believe the method practised by our correspondent was made use of by Mr. Shirley Hibberd and others many years ago, but it has never found general adoption, owing, probably, to the large proportion of misses to hits. Ed.]

# Foreign Correspondence.

## THE TOBACCO AND CIGAR TRADE IN CUBA.

Cuban Tobacco, which has hitherto held a very high position, has, it is stated in a recent report on this subject, lost its *prestige* through forcing and the use of artificial manures, so that it has to sustain a sharp competition from abroad where it formerly commanded the market, and it is considered that it will take some years before the soil can recover from the excessive and indiscriminate use of artificial fertilisers. A few years ago the leaf harvested in the Veulta Abajo was not sufficient to meet the large demand, and in order to increase the yield growers made use of guanos of all sorts, with such bad results that they find it now difficult to place on reasonable terms more than half and sometimes less of their crops, at very low prices. In a few localities only the soil has not been spoilt by spurious manures, and the leaf grown there commands very high prices, and is warmly competed for by local manufacturers and buyers for the United States.

Notwithstanding the last crop was of a better quality than heretofore, growers were compelled to abandon the Tobacco cultivation for a certain time, and devote the ground to other purposes. This change of cultivation appears to be absorbing the fertilisers, and restoring to the soil its former good qualities. From the splendid appearance of the leaf, and the ready sale it now meets with, it would seem that the Vuelta Abajo fields are becoming fitted for the growth of the best quality of leaf. As is well known, the Tobacco grown in the Vuelta Abajo, or district west of Havana, is the best kind, and has given Cuba its well earned reputation. About 67,000 acres are cultivated.



Fig. 63.—Rose plant from an eye.

There seem to be no trustworthy statistics to show how much of the raw produce is manufactured in the island, probably not more than one-fourth. Very large quantities of the leaf are exported in bales, and rolled abroad. It is evident, however, that given the total production and corresponding result in the manufactured form, but a small portion of the cigars sold in Europe and elsewhere as Havana cigars have the slightest claim to a connection with Cuba. The chief and only important manufactories of these cigars are in Havana, and much care and money is expended in producing a handsome looking article. As much as 40 dols. gold are paid to skilled labourers per 1000 for making up first-class goods. About 17,000 operatives are employed in this manufacture in Havana alone. One of the largest establishments is that supplying the Henry Clay brands, which is stated to turn out from 80,000 to 120,000 cigars daily, and there are many others of considerable importance with a well-earned and old-established reputation for fine goods. Except in the case of the few rich owners of plantations in the eastern parts of Cuba, brands and names are no guarantees for a permanently good article. Even these favoured few are exposed to bad seasons, if in a minor degree than less fortunate owners, for the quality of Tobacco, like other produce, depends on season, soil, and many natural causes which may baffle the most careful cultivator.

The manner in which the wholesale trade is carried on in Havana is incomprehensible to an outsider, to whom it would appear that the manufacturers prefer a prospective loss abroad to a present and certain gain at home. They will only execute orders, large or small, for cash over the counter, giving no, or, in some cases, the smallest discount. No manufactured goods are kept in stock, but are made to order after sample, and unless examined in a warehouse before delivery—and that means little—must be paid in full on delivery, and the consequence too frequently is, that on arrival at their destination they do not correspond with the sample, and the deluded buyer finds

that he has made a bad bargain, and (if an Englishman) discovers that he could have bought the same article cheaper in the English maket with the additional advantage of examining and testing the goods before purchase.

It is stated that intelligent smokers, with sensitive palates, find no cheap Tobacco in Havana worth smoking; 50*s.* per hundred and upwards is what must be paid at present for really fine flavoured aromatic cigars; beyond 80*s.* or 85*s.* prices become fancy ones, and are paid for the smart cases and envelopes. Even at the rates quoted, it is stated not to be easy to find what is wanted. There is an abundance of dark powerful Tobacco of fine quality at much lower rates, but not light Tobacco with flavour or aroma or without strength such as an Englishman with a refined taste for Tobacco seeks. Perhaps not more than 10 per cent. of the Tobacco harvested in ordinary years is of the light colour referred to; hence the difficulty in supplying the demand, and the artifices resorted to to supply the deficiency.

Cuba's annual Tobacco crop may be estimated at between 300,000 and 400,000 *tercios* of 125 lb. each. About 30,000 persons are employed in its cultivation, and its value when harvested may be reckoned at between 8,000,000 and 12,000,000 dollars of 4*s.*

It is said to be difficult to estimate the number of persons engaged in working plantation (*vegueros*) and other cigars for home consumption as well as the quantity consumed, but the higher class of operatives employed in cigar-making for export number about 20,000, and turn out at present probably 200,000,000 cigars annually. The export trade has fallen off of late years considerably. In the five years from 1870 to 1874 about 350,000,000 cigars were annually shipped to foreign ports; whereas in the period between 1879 and 1884 the annual average export was only 200,000,000.



FIG. 64.—ARISTOLOCHIA ELEGANS.

Cream-coloured, with purplish-brown markings; throat golden-yellow, surrounded by a deep purple blotch.

### THE WARSAW EXHIBITION.

This year Warsaw has been fertile in exhibitions of different kinds, and in the early part of September it is intended to open another of a strictly horticultural character in the fullest sense of the term, that is to say, not only flowers and plants, but fruit, seeds, and vegetables, as well as everything else more or less relating to gardening, will be shown. The plan and arrangements of the show, which promises to be on a grand scale, are under the direction of some of the leading nurserymen and gardeners of the town, as Messrs. Uhlrick, Bardet, Hozer, and others, who take a very active part in the necessary preparations. But the enterprize is under the auspices and guaranty of the horticultural society, the most energetic members of which are the proprietors of the extensive seed nursery near Warsaw, Messrs. Yankofski, Katchinski & Shanor. This firm issues a monthly paper called "Ogrodnik Poloki" (the *Polish Gardener*). Some 10,000 or 12,000 roubles, at least, will be required to finish the necessary preparations for the show. It is expected that a good number of exhibitors from the neighbouring provinces, and even from the nearer parts of Prussia and Austria, will arrive. It will last about two weeks, and no doubt it will be a very interesting display.

There is one serious drawback to all these exhibitions in this quarter; they are more or less improvised—nothing is heard about them till a week or two before opening. Many people have not time to think over the matter, and prepare for a good turn-out. So it happens on this occasion there are great complaints of indifference on the part of gardeners and others, whereas the reason is simply that the promoters failed to give notice of their enterprise in good time. *P. F. K.*

LARGE BEECH. — REGINAL KELLY, Esq., of Kelly, North Devon, has some splendid timber in his park. As an example there is a Beech growing in the rookery and near the ornamental ponds which has a trunk 18 feet in girth at 3 feet from the ground. This noble tree aspires to a height of at least 70 feet, and is about 300 feet around.

## ARISTOLOCHIA ELEGANS,

SP. N.*

THERE is a general prejudice against these plants in that they take up a good deal of room, are difficult to keep free from insects, and if their flowers are peculiar they have a lurid hue, and their perfume is objectionable. None of these objections can be urged against the very beautiful little Aristolochia recently introduced from Brazil by Mr. Bull (fig. 64). It is something like A. Duchartrei hort. = A. Ruiziana Duchartre, but the present plant bears solitary flowers, proceeding, not from the old wood, but from the young shoot. The plant flowers in a young state, has cordate ovate leaves, glabrous above, glaucescent beneath, and long-stalked flowers, whose slightly distended tube is suddenly bent upward at a very acute angle. The uppermost part of the tube is dilated into an obliquely cordate-ovate somewhat cup-shaped limb 2½ inches long by 2 inches in width, the colour of which is like that of cream thickly sprinkled with dendritic markings of a rich purplish-brown colour; the wide aperture of the tube is of a golden-yellow colour, surrounded by a deep blotch of velvetty texture and rich purple colour. The interior of the tube is lined at the base with white cottony hairs, and on one side, just below the bend of the tube, are two crescentic raised blotches of a purple colour. The column is about ¼ inch long, 6-parted.

The plant is a native of Rio, where it was collected by Glaziou, No. 13,163 Herb. Kew, and it has recently been introduced into cultivation by Mr. William Bull, to whom we are indebted for the opportunity of figuring the plant and by whom it was recently exhibited at the Royal Horticultural Society, where it received a first-class certificate.

It is singular that so beautiful a plant, native of so well known a botanical district, should not previously have been introduced or described. *M. T. M.*

* *Aristolochia elegans*, sp. n., Mast. Glabra volubilis; folius longe petiolatis, petiolis gracilibus, lamina cordato-ovato-oblongis, lobis basilaribus rotundatis late divergentibus, nervis pedati-, venulis reticulato-ith.; floris solitarii longe pedunculati tubo cylindrato basi paulo ventricoso, medio abrupte resimo tereti, limbo oblique cordato ovato diametro 2 pollicaris, sub concavo colore cremoris maculisque dendriticis purpureis dense obsito, fauce aperto aureo-flavido maculaque velutina, brunneo-purpurea circumdato; columna apice 6-loba. Folia subtus glaucescentia ad 2½ pol. lat. 1½ pol. long. Pseudo-stipulæ reniformes; flores longe pedicellati e novellis propendentes. Perianthi tubus intus araneoso-supreme maculis duabus reniformibus purpureis notatus. Brazil, Rio. Glaziou, 13,163, et hort. Bull.

# The Apiary.

### TAKING THE HONEY.

To get extracted honey in a nice form is not easy without a little practice, and requires a certain amount of real hard work. I have been at it about four hours to-day, and do not require any more physical exercise for the day. To do it nicely get everything you are likely to require at hand, so that there shall be no delays and running about. We will suppose you have eased the bees of say twenty frames. Take them right away into some convenient outhouse where you can shut yourself up. Get the following things ready:—Honey extractor, uncapping knife, jug of hot water to stand knife in, basin of warm water to rinse your hands in occasionally, a nice flat table, and a strainer made of cheese-cloth. Now to business. Take a frame of honey, lay it flat on the table, and with the honey knife carefully shave off the cappings. Turn over and do the same to the other side, and then put the frame into one of the cages of the extractor. Now take a second frame and uncap it exactly like the first, and put it into the opposite cage. Now begin to turn, gently at first, gradually increasing the speed to a fair rate. When all the honey is out on one side, reverse the frames and turn the machine again, to clear the other side. If this is carefully done with a good machine, you will get all the honey out. Of course small portions of honey will stick to the comb. You can, after you have finished, give the combs to the bees to lick out clean, and then put them away till the following spring. You can proceed thus till you have extracted the honey out of the twenty frames. If the frames are very heavy you will probably have to empty your machine after extracting ten or a dozen frames. To do this best lift the machine and honey, and put them on the table. Now put your cheese-cloth

strainer (which ought to be made the shape of a cone, with apex downwards) under the tap. Put some kind of receptacle under the strainer, and then turn the tap. Every particle of small comb will remain in the strainer, and only beautiful clear honey will trickle through. When you see the kind of honey which comes from the strainer, you will feel well repaid for the work of uncapping and turning the machine. Always put two frames in at once, never only one, or your machine will shake about, and probably smash the comb. Some machines are made for three, and some for four frames, but practical experience seems to suggest two as the best for most persons. If you wait to get four frames uncapped, the honey will get cool, and is then harder to sling out. When you have finished, rinse out your machine with warm water. *Agnes.*

## THE STRAWBERRY.

MR. ROE (speaking before the American Institute Farmers' Club on June 19) said that development and improvement of the Strawberry is slow. He had abandoned the idea maintained a few years ago, that all the varieties of the day were soon to be superseded by new and better ones. In our endeavours for improvement we have to observe three principal points:—

1. Development in the Strawberry should be sought in the line of native (American) stock. The highest excellence of foreign Strawberries is combined in Triomphe de Gand, and its equal has yet to be found. The leading qualities to be aimed at are beauty, firmness, flavour. Without these size is nothing.

2. We should not discard the old standard varieties that have stood the test of many years. Varieties like Charles Downing cannot easily be surpassed. Typical plants of such should be singled out and grown on fair Strawberry land, to start a new and vigorous strain from.

3. In developing new varieties we should have in mind that they are intended for the people. For propagation, fair dry soil should be chosen, such as would not be considered fit for the very highest cultivation; and only selected plants should be used for the purpose. Plants grown on a very rich soil will, as a rule, fail on poor and sandy soil, while those that have sufficient inherent vigour in them will make their way. The right kind to succeed will grow even under adverse conditions. The old Champion, for instance, is a good variety to use as a mother, if crossed with rich high-flavoured varieties.

Mr. E. W. Durand, the originator of Jersey Queen, Prince of Berries, Black Defiance, and many other varieties, thought there was something like intuition that guided him in the selection of varieties for crossing, and that it required constant attention and application to accomplish anything in this direction. Most varieties change, the foliage giving way to the fruit. The change may be so gradual that it becomes impossible to foretell the fixed permanent character of a new variety before six or even ten years, and he had known seedlings to retrograde even after such a period. To expect much improvement from chance seedlings he considered a fallacy.

Mr. T. P. Quinn was satisfied with his crop. On 7 acres of ground near Newark, N.J., he raised 1000 bushels of Strawberries last year, and expects to do nearly the same this season. Whoever expects to make money in Strawberry growing must have good land, deep soil, give high manuring, and be convenient to a good market. Southern Strawberries have entirely revolutionised Northern Strawberry culture. So far only two varieties, the Wilson and Neunan, have been found adapted for cultivation at the South, and at the North earliness is not the leading consideration, as was formerly the case. After experimenting with every new variety, he finds the Charles Downing still the most profitable Strawberry to grow for market. Berries are grown for the masses, therefore we must have varieties which yield enough, so that they can be sold within the means of the masses, at a retail price of from 8 to 20 cents. The average nett cost of his berries to him he estimates at 6 to 7 cents a quart.

Summer planting he has abandoned entirely, and plants now in spring exclusively. The plants are set 15 inches apart, in rows 4 to 5 feet apart, and allowed to run. They are always mulched in the fall, the covering being removed in the spring, the ground cultivated lightly, and the mulch replaced between the rows before picking. He was convinced that Strawberry culture will yield a fair profit if proper application is given to it; and that even in seasons of light crops there is always the compensation that the crop will bring better prices.

Mr. A. S. Fuller spoke on fertilisation, and the influence of the pollen on the berry. He described the construction of Strawberry blossoms, and the differences between staminate and pistillate varieties. That the influence of the pollen reaches further than the seed, and that the berry itself becomes affected by the pollen he had become convinced of more than twenty years ago. Several instances in proof thereof were cited, and the fact that when pollen is not applied to imperfect flowers the blossoms wither and the stems die, while when after pollen is applied the fruit stems expand and become more vigorous, shows plainly that the whole plant becomes changed by fertilisation.

## CATERPILLARS.

IF it were possible to take seriously the advice to destroy every caterpillar in the garden, a great deal of amusement and of interest would be at an end for some who observe with delight the fauna as well as the flora of their pleasure grounds. There exist certain beautiful caterpillars who feed only upon what can easily be spared, and who, appearing as they do season after season, grow to be like old friends—children who never get old. I am now looking for the advent of a handsome fellow on the Rose trees. He wears black velvet and scarlet tufted with white along the back, while from his shoulders sprout black hairs in bunches, dotted like a peacock's crest. He goes very fast, and I have known him all my life. There is another, very much the same in appearance, only heavier and with some dots of blue: the colours of this last are not so well mixed. Less commonly seen, and always received with an admiring welcome, is a pale green caterpillar tinted with rose, banded with black velvet, and bearing silken tufts of primrose-yellow along the back, a luxurious slow-paced, well-fed fellow. One of the same order appeared on a Japanese variegated Maple last autumn. He was "got up" with the most perfect good taste, all in black velvet and light chestnut. There was a black chain down the back, with a double row of chestnut tussocks, and long golden-tawny hairs all over. I was selfish enough to secure this beautiful creature, requiring of him to chrysalise in a dull flower-pot full of earth instead of enjoying free burial in the open ground. The moth should have been set at liberty so soon as it appeared; but this never happened, and the *dénouement* of the tawny one's history remains unknown to me.

Once or twice in a lifetime one may chance to find a treasure; such as the great larva of the Death's-head Sphinx, whom once I met walking alone in the garden, big enough to frighten an unlearned person. An old labourer, digging Potatos in a Potato-field, has been known to cry out in terror at the sight of this "worm," believing it to be the Devil. I have found also a Privet Hawk-moth caterpillar, very beautiful with lilac and white stripes laid upon brilliant green.

Then, on the Currant bushes often come long slender green geometers, or looper caterpillars. The consumption of Currant leaf by such thin threads of emerald cannot reasonably be supposed to injure the trees in any way. What advantage to themselves may be the inconveniently exaggerated length of their bodies it is difficult to guess; we may feel pretty certain, however, that Nature has made no mistake. Then there is the old Currant moth, who begins life as a rather stout spotted looper, coloured with a remarkable forecasting of the pattern of its future wings. (Several of these I observed in the moth state last month, enjoying the coloured lamps and fountains at the Inventions with the rest of the crowd.) I do not personally care much for the Currant moth, except for the sake of "auld langsyne;" but I believe it never does any very important mischief. The worst is done by the gregarious larvæ of sawflies, and to them little mercy need be shown. They are distinguished by a general greasiness of appearance, and by their feeding—from an absence of prolegs—with their tails in the air. Sometimes on Gooseberry bushes one finds brown loopers, like dead sticks. These are most amusing in their clever mimicry, and are innocent of all harm to the Gooseberries, beyond eating a few spare leaves. Then, who would dream of destroying woolly bears?—the beautiful travellers in glossy brown fur coats, whom we so often meet, late in the summer, making their way rapidly across the garden-walks. Or the flat little blue and yellow ladybird grubs, who devour herds of aphides? All these, with many another such-like charming creature, we can but reckon amongst our humble friends. They are surely welcome to a share in our green plenty, and their "wholesale destruction" would doubtless be felt as a real loss by others, as well as by *E. V. B.*

## The Rosery.

### MARÉCHAL NIEL ROSE.

SOME doubts have been expressed as to the popularity of this Rose, and it has been stated that Niphetos is a far more popular flower now. The question opens up a curious phase of fashion, which rules so much in all things at all times. I do not believe in the waning popularity of this grand Rose, though I am quite prepared to believe that it does not represent so much marketable value as it used to do. There are two reasons, however, for this. I was talking with one of our most eminent cut-flower merchants some little while ago, and said what an enormous business it had become—it was then the height of the London season. "Well," was the reply, "if it were not for the great demand for bouquets at weddings and wreaths at funerals, we should say that the season was a bad one." Of course if this be so Niphetos, as a white flower, would be in much greater demand for either of these purposes; by the way, the extent to which the custom of sending wreaths at funerals has gone to, may be guessed from one fact, that at the funeral of the wife of a medical man at ——, who was greatly beloved, it was necessary to get a waggonette to convey them to the grave! But there is another reason. The Maréchal has proved such a mine of wealth to those who have cultivated it (many persons in two years paying the expense of the house they built to grow it in) that a great many have tried the same thing with the usual result—the increased supply has cheapened the commodity; in fact, it is one of those cases which are constantly occurring of supply and demand; still, that it has ceased to be profitable is certainly not the case. The schoolmaster in the parish of a friend of mine had put up a rough greenhouse in which he planted a Maréchal Niel; the Rose had in a short time paid for the house. He, poor man, died, but his sister still lives at the same house, and continues to grow the Rose. This year she sent up to Covent Garden 216 blooms, for which she obtained £5 8*s.* 6*d.*, the earlier blooms producing 8*s.*, and the later ones 4*s.* per dozen—a result by no means to be despised.

And for gratifying one's own taste how better can one employ a piece of glass structure?—for it may be done in a way that does not interfere with other things, as I can vouch for from my own experience. I put some three or four years ago a plant of it into a large pot and placed it on the ground in a small rough glasshouse in which I grow a Vine. The size of the house is 14 feet by 10. This was placed at the back with the idea that it might last for a year or so, but it has pushed its roots through the pot, and is now firmly rooted in the soil. It has made long and vigorous shoots, blooming so well that I cut this year 120 blooms from it. I thought that best of its day was over, but it seems vigorous and gives promise of doing well for at least another year. I am more than ever convinced that it is essentially an indoor Rose. It will doubtless grow and bloom well in the open in some parts of the country, but the flowers, although higher-coloured, are never what they are under glass. I have another in a small glass structure which I have used for blooming Hyacinths in, and have had a somewhat curious experience with it; it was in the early spring badly attacked by mildew, owing, I imagine, to its being in a position facing the east, and getting too great changes of temperature. The earlier flowers were very indifferent, but I have lately been cutting some very fair blooms of a very deep colour. I am inclined indeed to think that the Rose after it has become established is much more perpetual in its blooming, as indeed it ought to be from its parentage.

It is a sad thing that a Rose so popular, and deservedly so—so much the "cynosure of all eyes"—should be of so short-lived a character, and that just when

you are luxuriating in what you think is well-nigh its full development, it begins to perish, owing to what is commonly known as the Maréchal Niel canker. I gave a plant of it to a neighbour of mine, who planted it in a house, which in a few years it completely covered, both the back wall and the roof; hundreds upon hundreds of its brilliant blooms were produced, but the decay set in, and it had to be entirely removed, and another planted in its stead; indeed, those whose who have grown these large plants always think it safe to provide for such a contingency, and after it has attained the full size to be ready with another to take its place. This was the plan adopted by Mr. Vallance at Bristol, who had one the stock of which measured 8½ inches.

What the cause of this canker is I believe has never yet been ascertained, or why this one Rose should be subject to it; but that it exists is, unfortunately, too true. It has been assumed by some that it is caused by the hot-water pipes, but it occurs as frequently where there is no heated apparatus. That it is caused by some injury is, I suppose, pretty certain, and it has been assumed that this is due in many cases to accidents—that the tree gets bruised; but here again we can hardly suppose that accidents should always happen to this Rose and not to any other. It is usually, I believe, the case that it occurs at the thickest part of the tree; that the bark at first splits longitudinally, and then across, as if it were "hide-bound," and that there is too unequal growth for the bark to retain it. I have seen where in a large bole canker was developed, the tree cut and slashed about in all directions, but without any success. Some have (seeing that it shows itself in the grosser and thicker shoots) suggested that it would be better to cut these away and get a more twiggy growth—there are indeed some rosarians who condemn in all Roses these gross shoots, and ruthlessly cut them away, a proceeding I never could agree with. It is unquestionably on the smaller growth of Maréchal Niel that one gets the bloom, but then I think that these shoots must be left for the purpose of supplying that small wood. I know it has been thought by some that the Maréchal is a fast fellow, and that if he must live a fast life he cannot expect it more than "humans" to live long: but then a cousin of his, Gloire de Dijon, lives quite as fast, blooms as freely, and yet is not paid out for it by canker.

And if, then, we cannot define the cause, there must be an impossibility in suggesting a remedy. The true physician must diagnose the disease before he treats it, the quack does not trouble himself on that score—he prescribes, and leaves it to chance; but there is one point in connection with it on which I should like to know the experience of others, as I have none myself. Does Maréchal Niel canker when it is on its own roots? I have been told it does not, and if so there is a remedy which only requires patience, patience—that is, to wait for a longer time to grow the plant. It is possible now-a-days to get own-rooted plants, and, indeed, it strikes very freely. Either this or having a plant to take the place of the decaying one is the only plan one can suggest of grappling with the fatal malady.

Another Rose which it was said would prove a formidable rival to the Maréchal is Perle des Jardins, doubtless a very beautiful Rose, but withal it has not, at any rate on this side of the Atlantic, dethroned its rival. In America it is said to be very fashionable and to be a formidable competitor, while great things are spoken of a sport that has been raised from it, Sunset, which is said to be of the colour of Madame Falcot. It has not, however, been much exhibited here, and we must perhaps wait for another season to decide on its merits. One of our best rosarians, Mr. George Paul, has a very high opinion of it, and has largely propagated it, but I do not think that it or any other Rose is likely to displace the Maréchal. Cloth of Gold has indeed many claims to superiority, but then how few can bloom it satisfactorily, whereas the Maréchal almost kills itself by its freedom of flowering. *Wild Rose.*

### Tea Rose Sunset.

This is undoubtedly a lovely Tea Rose, a decided acquisition, and a fine addition to the already large list of Tea-scented varieties. It is a sport from Perle des Jardins, bearing flowers similar in form and substance, but of a very pleasing bright pale apricot colour. It was very finely shown by Mr. Slaughter, of Steyning, at the exhibition of the West Grinstead Horticultural Society, in West Grinstead Park, on August 26, who informed us that when well established on the Brier it furnishes him with very fine flowers. *R. D.*

# Plants and their Culture.

## SEASONABLE NOTES—DUTCH BULBS.

THE season has again come round for the general orders for these to be given, and we would advise that no delay be allowed in securing the requisite quantity in good time. In spite of every honest endeavour by the vendors to serve all alike, first and last, the best bulbs will get chosen in many instances, and justly so, when growers make their own selection for special purposes. The first batch of Hyacinths should have been potted ere this, as previously advised; if not done, lose no time in its completion. As soon as the general stock comes to hand, another lot should be potted, to have them in readiness for starting with the New Year. For late work a few more weeks may be allowed to elapse prior to potting.

### Hyacinths, Etc.

Good Hyacinths, both in variety and colour, can be obtained now at such moderate prices that there is no need to go to any great expense in the purchase of scarcer kinds, except it be in the case of their culture being made a specialty. A few good and cheap kinds are as follows, viz.:—Shades of pink and red—Gigantea, Macaulay, Norma and Robert Steiger among singles; and Lord Wellington and Noble par Mérite of double kinds. Of blush and white, singles—Mad. Van der Hoop, Queen of the Netherlands, Grandeur à Merveille, and Mammoth; of doubles—La Tour d'Auvergne and Prince of Waterloo. Of blues in various shades—Baron Von Tuyll, Argus, Charles Dickens, King of the Blues, Grand Lilas and Prince Albert among singles; and of doubles—Laurens Koster and Van Speyk. From the yellows—Anna Carolina and Alida Jacoba, both singles; and Haydn, a lilac-mauve. These would be good kinds to select for general purposes. Of Polyanthus Narcissus, Gloriosa and Soleil d'Or are two good kinds; Bazelman major is, however, by far the finest of any, but somewhat expensive, still it is strongly to be recommended.

### Daffodils.

Some of the cheapest and most distinct kinds of Daffodils are well worth a trial in pots, imported and well ripened bulbs of home growth are to be relied upon to give every satisfaction; the more robust kinds will not be so well adapted to this mode of culture as the dwarfer sorts with medium-sized flowers.

### Tulips.

Where any large amount of furnishing has to be done the Duc van Thol Tulips should be grown for early work. Vermilion Brilliant is now being used for for forcing also, being found reliable and of good constitution, and possessing finer individual flowers than the first-named; the Tournesols are still the best of the double kinds. Lilium excelsum and L. longiflorum are two most useful Lilies for pot culture for the first season, then turn them out of pot after blooming.

### Miscellaneous.

Imported Spiræa (Hoteia) japonica are by far the best for early work, being less disposed to push forth foliage so far in excess and advance as home-grown stock. Schizostylis coccinea and Richardia æthiopica at present in the open ground should be abundantly supplied with water during this long-continued period of dry weather, for in a few weeks it will be necessary to take them up for repotting. Bouvardias, Salvias, and Eupatoriums will not need too liberal encouragement in this way, a healthy hard growth being preferable to a soft and sappy one. Solanums now having set a good crop of berries will need to be gone over carefully, and all the stronger shoots pinched, to concentrate all possible vigour in the development of the fruit; liberal doses of water, with occasional artificial or other stimulants, will be necessary, where a heavy crop has been set; should greenfly attack them a dusting with tobacco-powder will set matters right in as simple a manner as is possible. The same remedy is also valuable from now for the Chrysanthemums. *J. Hudson, Gunnersbury House Gardens, Acton.*

# The Flower Garden.

## TRANSPLANTING TREES AND SHRUBS.

MY experience of many years' transplanting work with evergreen shrubs proves the advantage of early autumn planting. The soil at this season has a higher temperature during the next two months, and there is more humidity in the atmosphere than in the spring or during the winter. I have always thought trees and shrubs of all kinds succeed best when transplanted in the months of September and October. The roots are then quickly developed, and the injury and check caused by transplanting are soon rectified, the plants becoming re-established before winter sets in. Where alterations and new plantations are contemplated, every available means should be used to complete the work as early as possible. Where large specimen trees or shrubs have to be removed, they should have been prepared twelve months previously by cutting a trench completely round and partially underneath them, so as to sever all the roots at a proportionate distance from the stem, according to the size and nature of the tree. Many trees which furnish fibrous roots plentifully will succeed with a comparatively small ball of earth, but others, especially the Coniferæ and many tender kinds of evergreens, require a larger ball and greater care to ensure success. Great care and attention should be given by refilling the trench with rich light soil, so that the trees may more easily form a mass of fresh roots which can be much easier removed without injury in transplanting. Having prepared the trees, the site to which it is intended to remove them should next be considered. One thing important is to provide thorough drainage, as without this few trees or shrubs will succeed where the subsoil is not sufficiently porous. To prevent water stagnating at the roots, drains of rubble or stones should be used for the purpose, about a foot below the bottom of each hole, and it is advisable to get out good large holes, and as deep as requisite for the subjects to be operated on. The soil that I find suitable for most kinds of trees and shrubs is a good, light, turfy loam; the more turf the better.

Having made all preparations beforehand, and having the proper mechanical arrangements in readiness for conveying the tree to its intended position, care should be taken not to injure the roots in transit and in placing it again in postion; the roots should be laid out straight at various level and afterwards covered with fine soil, which should be well washed down with an abundance of water, and then the soil should be filled in and well rammed and made quite firm all round the tree; a good mulching of long manure, 5 inches thick, should be spread over the surface; the tree should be staked and tied firmly. The operation will be complete if the above instructions are carefully carried out, and early autumn planting and greater care in the operations of transplanting trees and shrubs, will succeed, and be sure to give satisfaction.

### Hardy Ferneries.

These will require to be constantly picked over for the removal of all decayed and broken fronds, which are apt to accumulate at this season; and all weeds should be rooted up, so as to keep up a neat and trim appearance as long as possible; and give a good supply of water, as the plants will require it this hot dry season.

### Carnations and Picotees.

The strongest layers should now be potted in pairs in 5-inch pots in any good rich light soil, and placed in any well ventilated pit or frame through the winter. Any root-layers not required for potting may be planted out on a raised mound rather than in patches in mixed borders.

### Trellises and Walls.

These will still require attention; as all kinds of climbers go out of flower they will become unsightly, and will require to be picked off; all superfluous growths should be removed, tying out the remainder neatly.

### Violets.

If the beds of Violets which were placed out last May have been well supplied with manure water, and well cared for, they will now begin to bloom. I see my first bed of Marie Louise is in bloom, and if a mild winter the plants will continue to flower till March and April. *Wm. Smythe, The Gardens, Basing Park, Alton, Aug.* 31.

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Sept. 7 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| TUESDAY, | Sept. 8 | Show of Grapes and Dahlias, at South Kensington.<br>Royal Horticultural Society: Meeting of Fruit and Floral Committee, at 11 A.M. |
| WEDNESDAY, | Sept. 9 | Show of Royal Caledonian Horticultural Society.<br>Sale of Dutch Bulbs, at Stevens' Rooms. |
| THURSDAY, | Sept. 10 | Sale of Importatations of Orchids from Mr. F. Sander, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Sept. 11 | Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Sept. 12 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE recent Botanical and Horticultural Congress at Antwerp devoted much attention to the subject of the best methods for ensuring a sufficient education for those who are destined to pursue their calling either as gardeners or farmers. With much judgment the authorities printed and circulated beforehand preliminary reports relating to the subjects proposed to be discussed at the Congress. To one of these memoirs—that of Professor KICKX—we have already alluded. Professor KICKX, as the head of the School of Horticulture at Ghent—an institution to which we have often referred—is in a position to speak with great authority on this subject, and as may be seen from our report (p. 168, Aug. 8, 1885) has grasped the necessities of the case. He recognises the quality of the material with which he has to deal, and the best methods of adapting the instruction given, alike to the needs of the case and to the capacity of the pupil.

It is, now-a-days, generally recognised, that the rule-of-thumb instruction derived by a pupil from the practical instruction of his master, and from the work he is set to do, has reached its limits. Far be it from us to undervalue what has been effected in this way by the accumulated teachings of experience. The existing condition of practical horticulture in this country as in Belgium bears sufficient testimony in the results obtained to the value of the system heretofore followed. But the most enthusiastic *laudator temporis acti* will admit that we must not stand still. New circumstances crop up, conditions alter, and in view of these, to stand still is practically to retrograde. What, then, is to be done? This is the question which the Antwerp Congress among other matters set itself to discuss. As to the preliminary education of the population in general, from which all classes of handicraftsmen are to be drawn, there is no dispute. An elementary education in the "three R's" is an absolute *sine quâ non* for gardeners as for other members of the community. It places within the reach of every one the means of further advancement which, without it, is impossible. So far all are agreed. The difficulty of the situation appears when the next stage is reached.

Are we to leave the lad who can read, write, and sum, without education in his future profession further than what he can pick up by washing pots, thinning Grapes, or pruning Peach trees? The horticultural schools of the Continent proceed on the notion that something more is required, and we are entirely of the same opinion. Much of the time of the Congress was taken up with the question of botanical laboratories, but this we may leave aside. The training for a future botanist is one thing, that for the man who has to get his living by the practical exercise of his profession as a gardener or a farmer is another. By all means let us have the best equipped laboratories for botanical and physiological research—by all means let us have the most thoroughly and the most practically educated botanist that circumstances admit of; but such men are to be the teachers of the future, not the operatives. It is the education of the latter that we have here to consider. What amount of scientific knowledge shall be required of the aspirants to the practical horticulture of the future?

In considering this question let us confine ourselves now strictly to botany and vegetable physiology. No one will deny that some amount of knowledge of these subjects is necessary—no one will deny that the present attainments of the majority fall far below what is really requisite. So far as botany is concerned an acquaintance with the outward conformation of plants in general, the nature of roots, buds, flowers seeds, a knowledge of the points of distinction and of the points of resemblance between plants of the more important natural orders of plants, Orchids, Ferns, Cruciferes, Leguminous plants and the like, we should look on as absolutely essential. The means for obtaining such information are not difficult of access. Materials for study are at hand in every garden and in every field, books and illustrations abound, and the head gardener or the village schoolmaster ought to be in a position readily to give such assistance as may be necessary to help the aspirant on his onward course.

A general acquaintance with the ascertained facts of vegetable physiology is also pre-eminently essential. The acquisition of this knowledge by young gardeners is in this country at present difficult. Botanical text-books are in general too advanced for the class of pupils we have in view, and the physiology taught in gardening books in general, even in those which enjoy the greatest repute, is miserably inadequate or out of date even in the best books, and wretchedly inferior and misleading in the ordinary compilations made for gardeners' use. At present there is an interval between the high-water mark of advanced physiology and the ebb tide of the general run of gardening books which makes one shudder to contemplate. It would be absurd and futile to attempt to educate gardeners and farmers up to the high-water mark we have mentioned—that will come in the future; for the present we must be content with a more moderate programme, convinced, as we are, that the highest point reached to-day will become the low-level of a future generation. For the present we must deem ourselves fortunate if the merest rudiments of vegetable physiology can be instilled into the young gardeners we have to deal with. But in this country the means of obtaining even the rudiments of physiology are very deficient. We are quite aware that here and there pupils may be so fortunate as to be able to attend a few lectures and demonstrations; but such opportunities are few, and not within the reach of the majority. To give some precision to our remarks, we would point out the necessity that exists for giving the cultivators of the future some practical acquaintance with elemental facts of vegetable life.

A few simple experiments carefully explained would show the pupil how water is absorbed by the roots, and what are the consequences of withholding it. The effects of preventing the access of light, as shown in the blanching of Celery, might be accentuated by the very simple means requisite to show the presence or absence of starch in the tissues. To talk of chlorophyll and of starch is one thing—actually to show their importance to the health of the plant, their mode of formation, and the way to prevent or to promote it, is quite another, and so far there is no difficulty—any schoolmaster or foreman gardener could perform the simple experiments needed, or, better still, teach the pupils to do them for themselves. So, too, the effects of temperature, as seen in the process of germination, the way in which plants derive sustenance from the air or from the soil, the manner in which they breathe, and the consequences of these processes—the different modes of life of plants with chorophll, and of plants, like Mushrooms, destitute of this substance, can all be made manifest by the simplest and easiest experiments, with no more elaborate apparatus than a glass jar, a few tubes, and a solution of iodine.

Facts of this character, which form the very basis of physiology, and lie at the very root of all cultural processes, can be demonstrated easily, and brought home to all minds, not excepting the very dullest. It is not book knowledge that is wanted—that is only a secondary matter, it is actual practical knowledge gained by the pupil himself, as it may readily be with the slightest modicum of assistance.

A knowledge of general principles thus practically obtained is every bit as valuable as an adequate knowledge of the use of tools, and there is no more difficulty in obtaining the one than there is in familiarising one's self with the other. It is not lectures, we repeat, it is not even demonstrations that are of first importance—these have their value, but it is distinctly and decidedly less than the practical knowledge obtained by a man's own exertions with his own eyes and hands. We state these things without fear of denial—they are self-evident. The corollary is that all young men destined for the practical professions of gardening and farming should have the opportunity of learning for themselves, not cramming from a text-book, such elementary facts of vegetable physiology as circumstances permit and these, as we have seen, are not burdensome as to number while their importance is cardinal.

—— TRACHYCARPUS (CHAMÆROPS) FORTUNEI.—The illustration at fig. 65 shows a plant of this Palm which is now in flower in the garden of J. SNOWDON HENRY, Esq., of Bonchurch, Isle of Wight. The flowering of such a plant in the open air is always a matter of interest, but it is not very uncommon. We have notes of the plant flowering at Kew a quarter of a century ago, and repeatedly since that time. A correspondent in the South of Ireland speaks of T. excelsa as flowering in the open air, in 1878. At p. 216 of our issue for August 15 Mr. WILDSMITH alludes to the two fine specimens (figured in our columns in vol. xv., Jan. 1, 1881) which were planted in 1869, and which in 1881 had attained a height of 12 feet, with a girth of 3 feet 8 inches at 3 feet above the ground. Mr. WILDSMITH says these plants have never failed to throw up flowering spathes for the last fourteen years, and as one plant is a male and the other a female, young plants have been obtained. The Heckfield plants are not protected in any way, but those at Kew and at Gunnersbury Park receive the protection of a mat in winter. The tree in question was introduced from Northern China by ROBERT FORTUNE. There is but little difference between T. Fortunei and T. excelsa; but FORTUNE'S Palm, or the Chusan Palm, as it is called, is, as pointed out by Count OSWALD DE KERCHOVE, the hardier and more robust of the two, with long, thicker leaf-stalks, and with the divisions of the leaf broader. In our number for May 17, 1879, will be found a useful note on the cultivation of this Palm, which the writer finds perfectly hardy.

—— CONES.—The present seems to have been a propitious season for the production and ripening of cones. Mr. CHRISTY sends us splendid specimens of Lebanon Cedar, Lawson Cypress, Chinese Juniper, Thuiopsis dolabrata, which hitherto has not often produced cones in this country, but which may now be expected to do so freely. Mr. WEBSTER sends us from Penrhyn cones of Picea Morinda, Abies Pinsapo, Cunninghamia lanceolata. Seeds of Conifers ought to be plentiful this season, but not necessarily so, for if the male flowers have not been formed, as is often the case in young trees, of course the seeds will not be formed, even although the cones may be well formed. This is the case this year with Picea Alcockiana in our own garden.

—— BOTANICAL APPOINTMENTS. — Professor DELPINO, lately of Genoa, has been appointed Professor of Botany and Director of the Botanic Garden at Bologna.—Professor WARMING has been recalled from Stockholm to undertake the Professorship of Botany and the Directorship of the Botanic Garden at Copenhagen.

—— A CHRYSANTHEMUM SHOW AT CHISWICK.—Some time during the month of November next a show of Chrysanthemums, as cut blooms only, will

be held in the Vestry Hall, in connection with the Chiswick Horticultural Society. It is many years since Chiswick, so famous forits exhibitions in another place, has had a show of Chrysanthemums, and we hope the promoters of the enterprise will reap a good reward for their endeavours.

—— THE HARVEST IN THE LOTHIANS.—We hear that splendid harvest weather has been experienced, and that the crops are turning out decidedly better than they have done for the last decade.

—— "FAMILIAR TREES."—The second part of this new illustrated periodical, published by Messrs. CASSELL, is devoted to the wild Cherry, Prunus

he was the first to introduce from the East into France. The *Belgique Horticole* publishes a portrait and biographical notice of this pioneer of horticulture, little known to his compatriots and still less known on this side of the Channel.

—— CEYLON PLANTS.—A systematic catalogue of the flowering plants and Ferns of Ceylon has been published by Messrs. DULAU & Co. for Dr. TRIMEN. This must needs be a very useful publication.

—— MONTREAL BOTANIC GARDEN.—It is proposed to establish a botanic garden in the vicinity of this city. Seventy-five acres of land in a suitable situation have been selected. A botanic garden now-

country, it would be an immense advantage to be able to study in the class-room the whole of its life-history, as Mr. WORTHINGTON SMITH seems to have done."

—— AMERICAN FORESTRY CONGRESS. — The American Forestry Congress holds its fifth annual meeting in Boston, September 22, 23 and 24. The Massachusetts Horticultural Society has invited the Congress to occupy Horticultural Hall during its sessions.

—— NEW SPECIES OF SPRUCE.—Since the list of trees was published in the American Census Forestry Report, a new species of Spruce, named after Professor



FIG. 65.—FLOWER OF TRACHYCARPUS (CHAMÆROPS) FORTUNEI, THE HARDY CHINESE PALM. (SEE P. 304)

avium. Mr. BOULGER knows how to write pleasantly without sacrifice of accuracy—a matter of extreme importance.

—— PIERRE BELON.—It is proposed to erect a statue to PIERRE BELON at Mans. BELON was the contemporary of DODOENS and DE L'ESCLUSE, having been born near Mans in 1517. In 1546 he undertook a long voyage in the Levant, Egypt, Palestine, &c., which enabled him to publish his "Observations," not only on natural history, but on archæology, and the religous and moral features of the countries he traversed. In 1557 he visited Italy, Savoy, Dauphiny, Auvergne, &c. At Touvoie, near Mans, he established under the patronage of RENÉ DU BELLAY, Bishop of Mans, the first French botanic garden. In 1558, twenty-five years before its introduction into England, BELON had the Cedar of Lebanon in cultivation, as well as the Plane, which

a-days requires to be an experimental garden—experimental, that is, both from the point of view of pure science and of practical utility. We earnestly wish the promoters success.

—— SCLEROTIA OF PENCILLUM.—On this subject Mr. W. T. THISELTON DYER writes:—"I am sure that many persons besides myself who are interested in the life-histories of typical fungi would be very much indebted to Mr. WORTHINGTON SMITH if he would describe with as much detail as possible the mode in which he has been so fortunate as to obtain these curious structures. The directions given by BREFELD have been repeatedly followed by Dr. VINES and myself, but without success, and I understood from Professor DE BARY that there is no method which can certainly be depended upon for obtaining them. As Penicillum is now generally included in courses of elementary biology in this

BREWER of Yale College, Picea Breweriana, has been discovered in the Siskiyon Mountains. It grows high up toward the timber line, attains a height of 100 feet, has long drooping branchlets, like some Norway Spruces, and is altogether distinct and striking in appearance.

—— A BIT OF REALISM.—It is stated that at the performance of *As You Like It*, at Stratford-on-Avon recently, under the auspices of Miss MARY ANDERSON, the Turnip eaten by AUDREY in the course of the play, was procured from the garden of ANNE HATHAWAY'S cottage. Canon ELLACOMBE thinks the Turnips of SHAKESPEARE'S time were like ours "and probably as good," a statement that would be vigorously challenged by the great seed-houses. At any rate we have no record in SHAKESPEARE of ∞ or other curiosities in the way of Turnip seed. The old name for Turnips was *noep* or *neeps*, a term still used in

Scotland, and which is clearly a derivative from the Latin *napus*, while Turnip is "the corruption of *terræ napus*." The only passage relating to Turnips cited by Canon ELLACOMBE is one from the *Merry Wives of Windsor*, where ANNE PAGE is made to say, "Alas! I had rather be set quick i' the earth, and boul'd to death with Turnips" (*Act* ii., *sc.* 4).

—— "DICTIONARY OF THE NAMES OF BRITISH PLANTS" (BAILLIERE, TINDALL & COX).—Under this title Mr. HENRY PUREFOY FITZGERALD has prepared a hardy little book "intended for the use of amateurs and beginners as a help to the knowledge of the meaning and pronunciation of the scientific names of British wild flowers." The book is likely to be very serviceable, and has been carefully compiled. We miss the word "Aquilegia" altogether, and we do not understand why the first o in Eriophorus is marked long, or why the g in Potamogeton is given as soft. Spathulata would be more correctly spelt spatulata. But in a book of this character slips of this description are sure to occur.

—— JUST ONE BOOK. — We have received from EMMA S. BUSK, Honorary Secretary, Literature Distribution Branch, Kyrle Society, 14, Nottingham Place, W., the following appeal. The lady will also furnish further particulars to any address:—

"Will you spare a few lines in your widely read paper to plead with the tourist readers in behalf of the stay-at-homes who have no books to read? At this season many interesting and amusing works are purchased at railway bookstalls, and thrown aside after having served for the recreation of a few hours' journey. These would be greatly valued by the sick, the poor, the old and infirm who have few pleasures but reading. The Kyrle Society, 14, Nottingham Place, W., will take charge (through their Hon. Sec. of the Literature Distribution Branch) of any books sent, and will see that they reach an appropriate haven either in hospitals, infirmaries, workhouses, boys' or men's clubs, or wherever they may be wanted. The applications far exceed the supply already. Magazines, whether of general interest or of a technical character, such as the medical or engineering, &c., periodicals, are specially acceptable. I will not trespass on your space; those that enjoy reading will, I am sure, like to help us, and will all (if they can do no more) send us just one book."

—— THE ROWE ORPHAN FUND.—The sum of £17 3*s.* 6*d.*, sent to this office for the benefit of the orphan children of the late Mr. ROWE, who were left in a destitute condition, has been handed over to the Rev. F. S. THORNTON, St. Sepulchre's, Northampton. Mr. THORNTON has also received £4 16*s.* 6*d.*, sent direct to him for the same purpose. Of subscriptions not previously acknowledged we have to add 5*s.* from Mr. WILLIAM RAYSON, and 2*s.* 6*d.* from Mr. G. POTTS. These are included in the above total.

—— AN EXHIBITION OF GRAPES.—The special exhibition of Grapes announced by the Royal Horticultural Society, to be held in the conservatory, on Tuesday and Wednesday next, promises to be one of great interest to Grape growers of all classes. There is the charm of novelty in the arrangement of the classes at this show, that in the first place attracts our attention. Instead of the usual prizes for collections of so many varieties of Grapes, the competition for which is necessarily restricted to a few large growers, and which as a matter of course always includes the most showy and attractive, if not the most useful sorts, prizes are here offered for all the leading varieties separately, so that each sort will be examined on its own merits. In all, twenty-six varieties are invited as follows, viz.:—Alicante, Alnwick Seedling, Black Hamburgh, Black Prince, Buckland Sweetwater, Duke of Buccleuch, Dutch Hamburgh, Dr. Hogg, Foster's White Seedling, Golden Queen, Gros Colmar, Gros Guillaume or Barbarossa, Gros Maroc, Lady Downe's Seedling, Madresfield Court, Mrs. Pearson, Mrs. Pince, Mill Hill Hamburgh, Muscat Champion, Muscat Hamburgh, Muscat of Alexandria, Raisin de Calabre, Royal Muscadine, Trebbiano, West's St. Peter, White Tokay, making twenty-six classes, and one more for "any other variety," whatever that may prove to be. It is a matter for speculation already as to what other variety there may be really worthy of cultivation. We may name the following as likely to be included, viz, Black Monukka, Canon Hall Muscat, Grizzly Frontignan, Trentham Black, Black Morocco, Aramon, Royal Ascot, &c. Should the competition prove at all equal to what we anticipate, this meeting should prove one of the most interesting that has yet been held. No better opportunity has ever been afforded of seeing so many varieties in competition together or of gaining information as to their distinctive merits. The season being a late one, many varieties it is feared may not be quite ripe, which is a slight drawback. In addition to the twenty-seven classes enumerated, there are the prizes offered by Mr. ROUPELL for varieties of the somewhat neglected Frontignan, and Messrs. WEBBER'S prizes for Grapes properly packed; Messrs. LANE & SONS, Berkhamstead, have signified their intention to exhibit examples of their wonderful Vines in pots, and we are also promised a consignment of Grapes from Southern Germany.

—— SCOTTISH APPLE AND PEAR CONGRESS.—At a meeting of the Council of the Royal Caledonian Horticultural Society, held on August 14, it was resolved to hold a Special Exhibition and Conference on Apples and Pears, in connection with the Society's winter show, in the Waverley Market, Edinburgh, on November 25 and 26.

"While collections of Apples and Pears are solicited from all parts, for comparison and instruction, the chief object of the Conference is to utilise the favourable opportunity presented by the fine crop this year, for the purpose of gaining information about the Apples and Pears grown in Scotland, comparing their merits and correcting their nomenclature. All fruit growers, especially in Scotland, are therefore invited to send as complete collections as possible of the Apples and Pears grown in their district; and as the object is solely educational, there will be no competition and no prizes. It is not necessary that the fruit should be grown by the sender.

"No limit will be put upon the number of kinds which any contributor may desire to send; but the number of each variety should be from two to four, according to circumstances. The Council are anxious to procure as complete representations as possible of the Apples and Pears grown in each district, and each variety should be distinctly labelled, with the name or names under which it is grown in the locality. It is also most desirable that each collection be accompanied by all the information possible about the climate, altitude, exposure, soil, stocks, method of cultivation, and other particulars, which will be of much value to the committee in drawing up their report. For this purpose forms will be supplied on application to the Secretary.

"The specimens being strictly for examination and instruction, they must necessarily be at the disposal of the Council where required.

"Intending exhibitors must give notice to the Secretary or Assistant-Secretary, in writing, not later than Monday, November 16, stating the number of varieties to be exhibited, and the amount of space that will be required. Collections of fruit may be consigned to Mr. WILLIAM YOUNG, Assistant-Secretary, 18, Waverley Market, Edinburgh, and delivered there on or before Friday, November 20. The Council will pay the carriage of fruit and take all possible care of it, and will also see that it is properly staged for the inspection of the committee; but they will not be held responsible for any error, damage, or loss of any fruit consigned to them. Exhibitors staging their own fruit can do so on Tuesday, November 24; and all must be staged and the hall cleared for the committee by 10 o'clock on the morning of Wednesday, November 25.

"Each exhibitor will receive free tickets of admission to the exhibition for himself and such number of assistants as the Council may deem necessary."

—— A MAMMOTH PRESERVE FACTORY.—We are informed that Mr. WM. P. HARTLEY, who has earned a high reputation in Liverpool and throughout the kingdom for the manufacture of preserves, has succeeded in purchasing a farm of 47 acres, about four miles north of Liverpool Exchange, and about two miles from his present premises. On this farm Mr. HARTLEY intends to erect new works, which, when completed, will be capable of producing 100 tons of preserves per day.

—— MISS WILKINSON, who is the lady gardener of the Metropolitan Gardens Association, may be congratulated, says the *Queen*, upon the taste she has displayed in laying out the little garden of Trafalgar-square, Mile-end Old Town. She has transformed the spot that was once a square of rank grass and mouldering tombstones, into an oasis of flower-beds and trim paths. Her idea is to light the gardens after dusk with Chinese lanterns, and bring into the grimy East-end quarter a glimpse of the charm of twinkling many-coloured lights, such as attract, on a larger scale, the *habitués* of the Inventories at South Kensington. Another lady, Miss ISABEL GLADSTONE, as hon. sec. of the Association, does good work in the cause of redeeming open spaces for the people. Both ladies work "for love," and deserve the gratitude of many dwellers in over-crowded rooms.

—— THE TURNER MEMORIAL.—This has been so favourably received that the promoters have now only to join their forces and apply themselves to the administrative business to be assured of complete success. The exhibitions have until now prevented any general action, but it is intended to hold a meeting on the subject on Tuesday next, immediately on the conclusion of the business of the Floral Committee. Intending subscribers may send their subscriptions direct to the Treasurer, H. M. POLLETT, Esq., Fernside, Bickley, Kent; or to the Secretary, Mr. JAMES DOUGLAS, Great Gearies, Ilford.—A general meeting will be held in the Conservatory at South Kensington on September 8, at 12 30 P.M., to appoint a sub-committee to manage the details of the "Memorial," and to consider a circular that has been prepared for distribution.

—— TROPICAL FRUITS AT CHERKLEY COURT.—In one of the fruit-houses of the particularly interesting garden at Cherkley Court, near Leatherhead, a Pomegranate is now ripening some ten or a dozen of its fruit. This is certainly an unusual occurrence. Tropical fruits form a feature here, for in addition to Bananas Mr. DIXON grows the big-fruited Passiflora macrocarpa, so very distinct from P. quadrangularis, the Water Lemon; Passiflora laurifolia, the Loquat, while the Shaddock covers a back wall with its rich foliage and abundant fruit. The Orange trees planted out have that rich black-green foliage which is so conspicuous in the Orange gardens of the Riviera, but which is so seldom seen in the case of plants grown in tubs.

—— NYMPHÆA ZANZIBARENSIS is doubtless the richest in colour of all the blue Nymphæas. Its dark blue or purple flowers are singularly beautiful and fragrant. While comparatively few can find room for the Victoria many might grow the Nymphæas, than which a more beautiful set of plants does not exist. At Cherkley Court not only is the Victoria grown in a specially provided tank, already figured by us, but various Nymphæas are grown in a separate tank of dimensions that would not alarm those who have comparatively little space at command.

—— NETTLES FOR STOCK.—The system of ensilage has been found to render even Nettles fit for food, as we learn that Vicomte CHEZELLES, the French nobleman who gave evidence before the Ensilage Commission, is accustomed to place large quantities of Nettles in his silo, and states that the silage they yield is not only highly nutritive, but that the stock eat it readily.

—— SEED ADULTERATION.—With reference to our article on this subject on August 22, Messrs. HURST & SON, 152, Houndsditch, London, have offered a reward of £10 to be paid to any one giving such information as will lead to the conviction of the parties engaged in this practice.

—— CAMPHOR IN CHINA.—Reporting on the trade of Tamsin, China, the Commissioner of Customs says that the trade in camphor is represented in the returns by such an insignificant figure that there is great fear of its total extinction in the near future. The immediate cause of its rapid collapse may be traced to the eagerness of the Chinese to acquire, by all possible means, as much territory as possible. During the last three years hills thickly wooded with camphor trees have been burned over by the Chinese, in order to compel the savages to withdraw. Destruction on so large a scale naturally tells on the camphor trade. Forests of camphor trees do still exist further inland, but the absence of all beaten tracks across the mountains renders them difficult of access.

—— GARDENING APPOINTMENTS.—Mr. JOHN DAVIES, late Foreman, Woodland's Castle, Dublin, has been appointed as Gardener to A. O. WALKER, Esq., Chester.—Mr. J. W. SEDGLEY, late Gardener to Lord COLERIDGE, Heaths Court, Ottery St. Mary, Devonshire, has been appointed Gardener to WALTER HOLLAND, Esq., Rose Hill, Worcester.—Mr. JAMES MYERS, late Foreman at Grove Park, Watford, Herts, has been appointed Gardener to the Earl of SANDWICH, Hinchingbrook, Huntingdon.

## TERRESTRIAL ORCHIDS OF SOUTH AFRICA.

(Continued from p. 233.)

EULOPHIA.—Sepals oblong or lanceolate. Petals similar to the sepals, but usually broader. Labellum saccate or spurred at the base, more or less 3-lobed, with keels and crests down the middle. Pollen masses two, waxy.

A large genus of terrestrial pseudobulbous plants, dispersed through India, Malaya, Australia, Polynesia, Tropical and South Africa, Madagascar, and Brazil. Some few are pretty species, others are dull coloured and unattractive. Some flower with the leaves, others before the leaves appear. The leaves are equitant, plaited or rigid, and many nerved, and the flowers are pedicillate. The following are about the best of the South African species :—

*E. barbata*, Spreng.—In habit and general appearance this resembles E. Dregeana (which see), but the flowers are only about half the size of that species, the narrow, oblong, lanceolate acute sepals and broader oblong obtuse petals being but half an inch long ; and the front lobe of the lip is roundish, and there are fewer crests on it ; the spur is slender, and about 2 lines long, not clavate. The flowers are said to be whitish. This grows in grassy places in the eastern part of Cape Colony, up to an elevation of 4500 feet, and flowers in December.

*E. cochlearis*, Lindl.—Similar to E. tristis in foliage and habit, and with panicled flowers, but the flowers are smaller, the labellum has the front part concave with crimped edges, giving it a shell-like appearance ; the colour is said to be brown and yellow. This species ranges from near Cape Town, as far eastwards as Graham's Town ; growing in sandy, grassy places up to an attitude of 2000 feet, flowering in November and March, according to collector's labels.

*E. Dregeana*, Lindl.—Leaves 6—12 inches long, ½ inch broad, recurving. Flower stem a foot high, arising at the side of the leaves, clothed with 5—6 acuminate sheaths. Bracts lanceolate acute. Flowers in a rather close raceme, large, according to Mr. Cooper "pinkish-white, beautiful." The three-lobed lip has the front lobe subrectangular, and the side lobes rounded ; there are about seven callus-ridges on the basal part of the lip, the five central ones being cut into filamentous teeth on the front lobe ; the spur is barely ¼ inch long, and clavate. It is a native of the Transvaal and Orange Free State, flowering in December.

*E. ensata*, Lindl.—Leaves a foot or more long, grass-like. Flower-stem as long as the leaves, and apparently arising at the side of them, clothed with 4—5 long acuminate sheaths. Flower-spike contracted and somewhat corymbose at first. Bracts linear acuminate ; flowers large, "primrose-yellow ;' the sepals and petals are about ¾ inch long, oblong-lanceolate acute ; labellum oblong, very obtuse, sparsely ciliate on the edges, and the whole upper surface covered with fine hair-like processes ; spur ¼ inch long. This grows in Natal and on sandy flats near the sea in the district of Lower Albany. It appears to be a fine showy species, flowering from October to December.

*E. tristis*, Spreng.—Leaves narrow, rigid, folded lengthwise, margins rough. Flower-stem arising from amidst the leaves, 1—2 feet high, panicled. Bracts linear acuminate. Pedicels, including the ovary, 6—10 lines long. Flowers about ½ inch in diameter, "brown and white," spur short, 1½—2 lines long, slightly clavate. This appears to be a common species, with a tolerably wide range, since it is found on Table Mountain at about 1400 feet elevation ; near Simon's Bay, and in the eastern districts of Cape Colony. It flowers in December and January. The flowers are very numerous, in large panicles ; the sepals and petals appear to be brownish, and the lip whitish, and, if not too dull coloured, ought to be an ornamental plant.

HABENARIA.

Sepals and petals nearly alike, or the petals narrow, and sometimes 2-parted, all converging over the column, or the lateral sepals spreading or reflexed. Labellum 3—5-lobed, or entire, spurred or saccate. A large and widely dispersed genus. The flowers are very variable in size and form ; in colour they are most generally white or greenish ; some of them are very beautiful, others insignificant. The following are among the best of the South African species, although there are several others equally fine ; but I have no information concerning them that would be useful to a gardener.

*H. cassifera*, Rchb. f.—Stem 1 foot or more high, with strap-shaped acute leaves, 2½—6 inches long, the upper ones much smaller. Raceme 4—5 inches long, and rather dense. Bracts lanceolate acuminate, ¾ inch long. Flowers ¾ inch in diameter, milk-white, with pale green sepals and spur ; dorsal sepal hood-shaped, acute ; lateral sepals semi-elliptic acute, their upper edges straight, their lower strongly curved ; petals narrow linear, slightly adhering to the edges of the dorsal sepal, and with it forming the hood ; labellum apparently 5-lobed, the lateral lobes falcately oblong, the middle one narrow-linear, the two seemingly basal lobes of the lip are the two lower segments of the petals, adnate to the lip ; spur slender, ¾ inch long. This grows in woods in the districts of Somerset, and is said to flower only in very rainy seasons, and will therefore require shade and moisture when under cultivation. It appears to range from low to high altitudes, since it grows "in the deepest parts of the woods near the mouth of the Riet River," and "in shady places on the sides of Mount Kagaberg, at 4000 feet elevation." It flowers in February.

*H. clavata*, Lindl.—A fine species, 12—18 inches high, with elliptic-oblong acute leaves on the stem, and a rich raceme of goodly sized flowers, which according to one collector are yellow, and to another green. The upper sepal is oblong acute, and the lateral sepals broadly falcate-oblong, and becomes twisted when the flower is fully expanded. The two-parted petals, have their lower segments nearly three times as long as the sepals, thread-like, and curved round half a circle, the upper segment is also filiform, straighter, and about as long as the sepals (8—9 lines). The labellum is divided to the base into three filiform segments about ¾-inch long. Spur equalling the ovary and its stalk, 1½ inch long. Bracts 1—1½ inch long, broadly lanceolate acuminate, embracing the pedicel of the ovary and the end of the spur. A native of Natal, the Orange Free State, and the eastern districts of Cape Colony, growing at an altitude of 5000 feet, in wet grassy places, and flowering in February.

*H. robusta*, N. E. Brown (Bonatea speciosa, Wild, *Bot. Mag.*, t. 2926).—A fine showy species, 1½—2 feet high, with a stout leafy stem, and a large many-flowered ovoid spike, 5—7 inches long, and 5—5 inches broad. Leaves elliptic acute, 4—5 inches long, 1¼—2 inches broad, the upper ones gradually smaller, and the lower part of the stem with sheaths only. Bracts elliptic-acuminate, concave, shorter than the 1½—2 inches long ovary. Flowers, 1½ inch in diameter ; sepals and labellum green, petals and stigmas white ; dorsal sepal hooded, apiculate, lateral sepals falcate ovate-acute ; petals 2-parted, upper segments linear, with a tooth behind, erect under the hood, green, lower segments falcate, adnate at the base to the lip, which is divided into three linear flexuose segments. The rostellum forms a remarkable hood in front of the anthers (as in several other species) and the stigmas are long cylindrical processes projecting between the lower segments of the petals. This grows among shrubs on the sand hills at Mossell Bay and Plattenberg's Bay. It was introduced about sixty years ago, and grew and flowered freely ; it requires a rich sandy loam, and should be placed in the shade ; the flowers last a considerable time.

*H. tenuior*, N. E. Brown.—Stem leafy, 6—12 inches high. Leaves 1—1½ inch long, ovate-lanceolate acute. Flower-spike 2—5 inches long : bracts like the leaves, but rather smaller. Flowers ¼ inch in diameter ; dorsal sepal oblong obtuse, lateral sepals spreading, falcate, oblong obtuse ; petals erect, somewhat S-shaped, as broad as the sepals ; labellum ovate obtuse, with recurved wavy margins ; spur very large for the size of the flower, ½ inch long, curved forwards at the very blunt apex. A native of Natal and the Transvaal, growing at an altitude of 2000 feet, and perhaps more, probably in marshy ground, but I have no information upon this point. It flowers in January. This was originally described by Reichenbach as Brachycorythis tennior, but as the labellum is spurred it should go into Habenaria, and seems closely allied to some of the Indian species of that genus, in the section Platanthera. To judge from the dried specimens and a drawing, it appears to be rather a pretty species ; the flowers are bright rose-pink, the sepals dotted with darker, and the spur green.

*H. tetrapetala*, Rchb. f.—Stem leafy, 8—18 inches high. Leaves strap-shaped, acute, folded. Raceme 3—9 inches long. Bracts ½—¾ inch long, lanceolate-acuminate. Flowers small, ½ inch in expanse, numerous, greenish-white ; dorsal sepal elliptic acutish, narrowed at the base ; lateral sepals much broader facately obovate ; petals 2-parted, upper segment narrow, oblong-lanceolate, attenuated at the base ; lower segment broader, lanceolate ; labellum divided to the base into three linear segments, the middle one longest ; spur slender, 1½ inch long. A native of Natal and the eastern districts of Cape Colony, and seems to have a wide altitudinal range, growing in moist sandy soil on the flats near Durham, up to an elevation of 5000 feet in Griqualand East, flowering, according to locality, from December to May.

HERSCHELLIA.

*H. celestis*, Lindl.—This is identical with Disa graminifolia, which see.

HUTTONEA.

Sepals ovate, flat, united in one piece at their base by the bases of the claws of the petals, which have long claws, and a hood-shaped or concave fringed limb. Labellum free, flat or concave, fringed.

This genus consists of but two elegant species, both worthy of cultivation, and very remarkable on account of the long-clawed, concave, or hooded petals.

*H. fimbriata* has both sepals and petals fringed, and the limb of the petals concave ; it is a native of Natal. *H. pulchra* has the sepals entire, and the limb of the petals hood-shaped. It is described as "a most lovely Orchid, with snow-white, sweetly-scented flowers of singular shape, and glossy, dark green, expanded leaves." One collector describes the flowers as "green." It grows on the Katberg at "4000 feet elevation under trees" in the Orange Free State, and in Natal, "on damp rocks," at 4500 feet elevation. Both species are from 12—18 inches high, and have cordate-elliptic leaves. They probably require moisture and shade.

LISSOCHILUS.

This genus is scarcely to be distinguished from Eulophia, the only difference being that in the larger species the petals are very much broader than the sepals, and more brightly coloured. It may be said to consist of the finest and most showy of the Eulophias. The genus seems to be confined to Tropical and South Africa, and some of them appear to be fine showy plants, especially the tropical L. macranthus, with large apparently purple flowers. The following are South African :—

*L. arenarius*, Lindl.—A fine showy species, flowering before or with the leaves. Leaves narrow, grass-like, but rigid. Stem 1—2 feet high, with distant sheaths. Raceme lax, with lanceolate acuminate bracts, and several handsome flowers nearly 1½ inch in diameter. Sepals lanceolate acute, all erect, greenish-brown. Petals large, elliptic obtuse, bright light mauve-purple. Labellum with a short pouch-like yellow spur, and a broad three-lobed limb, the front lobe quadrate, except in the throat ; the labellum is light mauve-purple like the petals. Although this plant grows in Natal it appears to be much more common in Tropical Africa, both Eastern and Western. Barter, who collected it on the Niger, has the following note on his label:—"Flowers purple, base of labellum lined with orange. Flower-stems appear after the first rains in April, leaves later, tuber large and flattened. Savannahs, in a sandy soil, abundant, ornamental, worth cultivation." In Natal it flowers in November.

*L. Buchanani*, Rchb. f.—Leaves 2—3 feet long, 1½—2 inches broad, lanceolate, acuminate, plicate. Flower-stem 3—4½ feet high, with distant acute sheaths, and a many-flowered raceme of fine yellow flowers. Bracts oblong-obtuse or subacute. Sepals reflexed, erect, spathulate, oblong, apparently brownish. Petals elliptic-oblong, very obtuse, yellow. Labellum yellow, with a short conical spur, and an ovate, obtuse, slightly emarginate limb, the sides erect towards the base, recurved and crisped towards the apex, with three median crested keels. A fine bold and handsome species, a native of Natal, flowering in February. I have no information as to habitat.

*L. Sandersoni*, Rchb. f.—This fine species has recently flowered at Kew in the Palm-house, where it produced broad, lanceolate, acute, plicate leaves, about 3 feet long, and a stout flower-stem 5 feet high, with distant acutish sheaths, and a long lax raceme of flowers about 2 inches in diameter. Bracts elliptic, acute. Sepals oblanceolate, acute, all dull green, re

flexed. Petals very large and broad, elliptic, obtuse, white, with a very delicate mauve hue outside. Labellum three-lobed, with a conical spur, that is towards its apex rather abruptly bent backwards, dull green, with the oblong-obtuse front lobe bright mauve-purple; there are three strong median keels much crested towards their apices, where they become yellowish-green, or pale purplish. It is a native of Natal, but I have no information as to habitat. Planted out in one of the beds in the Palm-house at Kew, it has thriven well, but whether it will continue to do so remains to be seen, and should be reported upon.

*L. speciosus*, R. Br. (*Bot. Reg.*, t. 573; *Paxton's Mag.*, iv., p. 25).—Leaves ensiform, a foot long. Flower-stem stout, 3—4 feet high, with distant sheaths, and an elongating lax spike of large, showy, bright yellow flowers, with small green ovate acute reflexed sepals, large elliptic obtuse petals, and a somewhat saddle-shaped lip, with a short conical spur, and a series of slightly raised keels without crests on the limb. This is an exceedingly fine and ornamental species. Lindley, writing in 1821 (*Collectanea*, t. 31) says of it:—"We think, without any exception, it is the finest plant in the order we ever saw alive." The flowers are fragrant, and it is said to last two months in bloom, the spike elongating to about 2 feet. It is a native of the eastern districts of Cape Colony and Natal; in Lower Albany it grows "among the sand hills near the mouth of Kleinemont River, flowering in December and January." In *Paxton's Magazine* above quoted it is stated that "It will thrive in a temperature much below that in which orchidaceous plants in general delight, but will not succeed well with the treatment of greenhouse plants, unless the house in which they grow is kept at a higher temperature than is usually recommended or suitable for them. One intermediate between these will suit it. It prefers good rich loamy soil mixed with a little peat and sand; it should be put into a well drained pot, not over large, and the plant in summer liberally watered, but in winter it should scarcely have any." To the above I would only add that I believe if the soil was about half loam and half sharp sand the plant would probably have a better chance of establishing itself with us.

PTERYGODIUM.

Dorsal sepal and the very large concave petals united into a hood, lateral sepals free, spreading. Labellum adnate to the face of the column, with a large or small tongue-shaped appendage at the base. A genus of about a dozen species, all South African. Most of them would appear to be worth cultivation, but those noted below are perhaps the chief.

*P. acutifolium*, Lindl.—Stem leafy, 6—12 inches high. Leaves few, lower ones 2—3 inches long, ½ inch broad, strap-shaped, acute, upper smaller, ovate-lanceolate acute. Flower-spike short and rather dense; bracts ovate-lanceolate acute, ¾ inch long; flowers about ¾ inch in expanse, deep golden-yellow; labellum very small, broadly ovate at base, contracted about the middle into an oblong point, the linear-lanceolate appendage, which ascends under the very broad hood, is entire. This grows in moist grassy places, on the Cape peninsula, from 1400—2500 feet, flowering in November and December.

*P. capitum*, Sw.—Stem 6—12 inches high, with a few elliptic-oblong, or oblong, lower leaves, passing upwards into stem-sheaths. Flower-spike 2—4 inches long, compact; bracts ½ inch long, elliptic ovate, acute; flowers ½ inch or more in diameter, bright yellow; labellum very broad, two-lobed, with the obtusely rounded lobes widely diverging so as to somewhat resemble the form of a fish's tail; the appendage is short, broad, and hooded at the apex. This grows at a lower altitude on the Cape peninsula than the preceding, being found between "100—1000 feet elevation, and can do with less moisture." It flowers in October and November.

*P. carnosum*, Lindl.—Stem a foot high, with linear acuminate leaves about 2—3 inches long. Flower-spike 2—5 inches long, dense; flowers about ½ inch in diameter, purple. A native of the Cape peninsula at an elevation of from 1300—2200 feet, growing in moist grassy places, and flowering in November and December.

*P. catholicum*, Swartz.—In habit and general appearance this closely resembles P. acutifolium, but the leaves are more obtuse, with a small apiculus; the flowers of a rather paler yellow, and the appendage of the labellum is serrulated on its edges, otherwise the flower is like that of P. acutifolium. It is found at much lower altitudes than that species, and flowers in August and September. There is a variety of it with purple flowers. *N. E. Brown, Kew.*

*(To be continued.)*

## DISEASE OF ANEMONES.

PERONOSPORA PYGMÆA AND ITS RESTING-SPORES.—The accompanying illustration (fig. 66) shows a section through a fragment of a leaf of Anemone nemorosa, with Peronospora pygmæa growing out of a stoma, and with oospores or resting-spores of the fungus within the substance of the leaf,




FIG. [illegible] ANEMONE; PERONOSPORA PYGMÆA.

Passing through a breathing pore on the lower surface of the leaf, here shown in a reversed position.

enlarged 400 diameters. The oospores were found by me in Anemone nemorosa at Aboyne on Saturday, June 13, 1885. When ripe they have a darkish brown, irregularly rough external covering with one or more internal coats, just as in the oospores of the




FIG. 67.—FERTILISATION OF PERONOSPORA PYGMÆA. (SEE TEXT.)

fungus which causes Potato blight—Peronospora infestans; to the latter oospores the oospores of P. pygmæa have a decided resemblance. The contents are generally coarsely granular, suggesting the idea that the protoplasm may break up into a number of zoospores. In fig. 66 two oospores at the lower part of the illustration are shown, and it is common to find an irregular expansion at one side of the oospore, which probably represents the antheridium or its remains.

At A, B, C, and D, fig. 67, is represented, enlarged 400 diameters, the process of fertilisation, A being the oogonium, or female body, and B the antheridium, or male. The envelopes of the oogonium are pierced by the antheridium, as shown at C, and this process of piercing is again shown diagrammatically at D. The fertilising substance of the antheridium appears to pass through the minute transparent passage or tube into the oogonium, in the manner illustrated and described under Peronospora infestans by Mr. Worthington G. Smith in his *Diseases of Field and Garden Crops*, p. 298. The illustrations here given are from permanent unstained glycerine preparations. The slide from which the figure A B was taken is no longer in my possession, otherwise it would have been submitted to the Editor of the *Gardeners' Chronicle* for verification. However, Dr. Trail, Professor of Botany at the University of Aberdeen, vouches for the accuracy of the representation. The accuracy of the observations has also been confirmed by Mr. W. G. Smith, who has examined fresh examples of the oogonia and oospores whilst still attached to the ordinary fruiting threads of the fungus which grow through the stoma of the leaves. A mounted preparation will also be given by me to the Department of Botany, British Museum, South Kensington, for placing with the other mounted examples of the resting-spores of species of Peronospora. I have now found the resting-spores of this fungus from three different localities—Aboyne, banks of the Don, near old Aberdeen; and beside Walker's Dam, near Aberdeen. Soon after the above-mentioned oospores were found by me, Dr Trail met with the oospores of Peronospora arborescens on Papaver argemone. They are similar to those belonging to the Anemone Peronospora and the process of fertilisation is traceable in one or two cases in Dr. Trail's prepared slides. *Geo. Brebner*, 11, *Carden Place, Aberdeen.*

## THE MILFOILS.

OF the genus Achillea, over a hundred have been described as species by different authors, but this is greatly in excess of the number that should be retained as distinct species. For horticultural purposes, size of the leaves, height of stem, and colour of the flower-heads, are all important distinguishing marks in the eyes of the gardener, and undoubtedly they serve his purpose; but the discriminating eye of the botanist is able to overlook all these trifling differences, especially when he finds them connected by numerous intermediate gradations. Moreover the differences may be too insignificant, or too inconstant for the subjects to merit the rank of species from a scientific point of view. A considerable number have been introduced to British gardens from time to time, but at present they are a comparatively neglected class as a rule. All are herbaceous and perfectly hardy with few exceptions, and their cultural requirements are few. Many are dwarf alpines, suitable for rockwork, others for the herbaceous border, and some can be put to a variety of purposes in garden economy. The following is by no means an exhaustive selection, but contains a number of the most useful sorts:—

*Achillea tomentosa.*—Taking all things into consideration this species is one of the best for general cultivation. Its neatness renders it available for planting in the front line of the herbaceous border, or on the rockery. For this latter purpose its densely tufted habit, finely cut foliage, and yellow flower-heads are excellent recommendations. Its date of introduction from the Continent seems to have been lost, for most of the older botanical books consider it as a native of Britain, and accordingly we have it figured in *English Botany*, 2532. The best authorities, however, consider it as a garden escape, scarcely even naturalised. It sometimes does duty in gardens under the name of A. aurea. The distinctness of the two, however, is unquestionable, for besides differences in the leaves, the flower-heads of the former are borne on a repeatedly branched umbel, while in the latter they are solitary, or simply umbellate.

*A. aurea.*—The leaves of this plant are bipinnate and downy, forming a closely tufted and fitting background for the golden-yellow flower-heads. The species was originally introduced from the Levant in 1739, and requires for its well-being a dry, sheltered situation. At present it is scarce, or is altogether got lost to cultivation. Beside the above-mentioned

species, it is said to be confounded with A. ageratifolia, a comparatively recent introduction from Greece, with white flowers.

*A. umbellata.*—Like several other species, this is cultivated chiefly on account of the beauty of its hoary foliage. The leaves are densely arranged on the decumbent stems, finely pectinate, generally under, and seldom exceeding, 1 inch in length, with narrowly spathulate segments. When bruised they are rather powerfully odorous, but this is a matter of no consequence when the plant is used as an edging, or, better still, for clothing an overhanging ledge of the rockery, where these conditions seem to make it perfectly happy. The flower-heads are white, produced in simple umbels, terminating short, somewhat leafy stems. It is a native of Greece.

*A. moschata.*—As a companion for the foregoing plant this is eminently suitable, and abundantly distinct. The foliage is green, slightly hairy, and dotted with sessile glands on both surfaces, exhaling an agreeable, faintly musky odour, as the specific name implies. The individual leaves range from 1½ to 2 inches long, and are finely pectinate, with linear, entire, or slightly toothed segments that are more irregular in length than those of A. umbellata. The flower-heads are white in a loose umbel, and the whole plant is decidedly dwarf and tufted. It is used medicinally by the Swiss, and cattle are said to relish it, recalling to mind the use to which our native A. Millefolium is put in some of the colonies, and sometimes at home. A. moschata is figured in Jacquin's *Austrian Plants*, 5, tab. 33.

*A. ageratum.*—Here the leafy stems average about 18 inches high, supporting a terminal densely-packed umbel of yellow flower-heads. The rays are extremely small and inconspicuous, and gain appearance solely by their dense arrangement. The leaves are oblong, doubly serrated, and tapered into the petiole, bearing shortened branches in their axils, giving them a fascicled appearance. The plant is inferior in point of beauty to any of the above-mentioned, but is recommendable as a thoroughly distinct subject for the herbaceous border.

*A. filipendulina.*—For the back line of a herbaceous border, or even for the shrubbery, few better or more conspicuous of the taller Composites could be named for the months of July and August. It is a native of the East, and was originally introduced to this country from the shores of the Caspian in 1803. The finely divided Fern-like leaves are pinnatisect, with long narrow, more or less, pinnatifid and cut segments, clothing stems from 3 to 6 feet high. The golden-yellow flower-heads (individually small) are produced in broad, repeatedly branched umbellate panicles. A good figure is given in these columns, October 1, 1881.

*A. Clavennæ.*—The flower-heads are closely umbellate, on short leafy stems, and are somewhat conspicuous from their comparatively large white rays. The striking feature of this plant, however, lies in its dwarf habit, densely tufted leaves, and hoary appearance. On this account it is sometimes used as an edging or dividing line in a design, with excellent effect. The leaves are pinnatifid, with oblong slightly toothed segments. The silvery-grey colour seems to develope most intensely by growing it in rather dry situations. It was introduced from Austria more than 200 years ago, and is figured in the *Botanical Magazine*, t. 1287.

*A. ægyptiaca.*—The silvery-white feathery leaves of this species are linear-lanceolate in outline, pinnatisect, with oblong serrated or somewhat lobed segments, and are even more effective than those of A. Clavennæ, as the plant is also rarer. The woolly flower-heads are small, bright yellow, and densely packed in terminal umbellate panicles that contrast beautifully with the foliage. The leaves are strongly odorous when bruised, but otherwise unobjectionable for mixing with cut flowers. It will succeed perfectly in a dry warm situation on the rockery, although it was formerly considered a greenhouse plant. For outdoor work it merits extended cultivation. It comes from the Levant, and is figured in Tournefort's *Relation d'un Voyage du Levant*, i., t. 87.

*A. ptarmica flore-pleno.*—The typical form of this species is by no means an attractive garden plant, but the variety under notice is a gem of the first water, whether for the herbaceous border or the back part of the rockery. It is moreover of great value for cut flower purposes, on account of the snowy purity of the perfectly double flower-heads and their long-lasting properties. The so-called doubling consists in all the florets, except about half-a-dozen in the centre, being transformed into females, and ligulate like those of the ray. The leaves are deep green and finely serrated—the serratures being again serrulate, a fact frequently overlooked in botanical works. It is of the easiest possible cultivation and requires frequent trimming to prevent it monopolising the ground to the exclusion of its neighbours. *F.*

## Home Correspondence.

**Patent Clip or Holder.**—This most useful little invention, designed for holding sheets of glass, metal, slate, or other material (fig. 68), is certain to prove of great use to the gardener. We have been hitherto without a simple and inexpensive contrivance for holding glass in position, so as to enclose a small area, such as is required for striking cuttings in the open air or otherwise, grafting, and protecting from wind, rain, and cold. By means of these simple screw clips, square or half-square forms can be made with glass of any ordinary thickness, and of any useful dimensions, suitable for uses identical withtose to which hand-lights and *cloches* are put; and, moreover, with the advantages of great stowability when out of use, and the rapidity with which broken glass may be removed or extensions made. One use to which the contrivance permits glass to be be put is that of protecting lines of early vegetables, in the

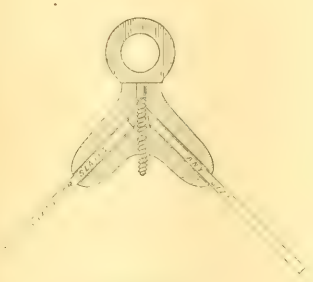


Fig. 68.—Patent Clip.

winter and spring months, as Parsley, Peas, Salads, Cauliflower, Beans, Potatos, &c. On the rockery they would be invaluable with the ends open, to form penthouses over alpines that suffer from overhead moisture, but which are not injured at all by frost. In the dwelling ingenious people will find sundry uses the clips can be put to in forming little enclosures for the better growth of Ferns, Mosses, Begonias, Bertolonias, Sonerilas, Gloxinias, Masdevallias, and the preservation in longer beauty of various of the less delicate Orchids. The inventor is Mr. J. Goddard, 13, Radipole Road, Fulham, S.W., who supplies them at a moderate cost per dozen. Our sketch was taken from a specimen exhibited.

**Reversion in Iris.**—Two years ago my gardener gathered the seed—only one or two seed-vessels—of a fine yellow and red-purple Iris, very similar to the Iris named Darius. The seeds were sown and the young Irises planted out this spring. The leaf appeared totally different in shape and colour to that of the parent Iris. When the flower came, the character of the leaf was confirmed—it is a wild yellow flag! It bears not the slightest resemblance to the Iris from which the seed came. The seed was the only Iris seen in the place that ripened. *E. V. B.*

**Market Vegetable Growing.**—Your correspondent, Mr. Earley, gives but small grace to the gardeners of this country, when they do not happen to be market growers, or reside elsewhere than in Essex. If all he states about the wretched methods of growing crops of vegetables were true, I fear many of us would not hold our situations for any long period, as the cooks and their employers would readily find out our deficiencies in that all-important particular. The differences lie in the fact that we do not grow for market, thus we neither want the quantity nor the bulk of crop a market man does. We look for continuous, moderate supplies, of well-grown succulents, and not over-large specimens of almost everything that is required in a gentleman's kitchen; and it may be here stated that that which enters into the servants' dietary should be as good in quality, if less in variety, as that which goes to the employer's table. The absurdity of planting Cabbages a foot apart, as advocated in Mr. Earley's paper, is apparent to any one managing a private garden. The market grower would clear them off at once or twice cutting, the former must take some few weeks to do so, during which time growth would take place continuously, and all the evils of an excessively crowded crop, with all its attendant stench and loss, would occur. The winter greens and small varieties of Cabbage may be so planted, and be kept from spoiling each other by the timely removal of the plants for daily consumption. Again, Marrows are but in comparatively small demand in private gardens, as are likewise Cucumbers, so that there is rarely a need to plant largely. That is the reason dunghills or masses of garden refuse are found suitable places for the growth of the first-named, as in such materials the plants grow rapidly, and the foliage hides that which in certain states is an unpleasing object. Out-of-doors Cucumbers are not much liked for the reason that the better kinds of frame varieties are grown in sufficient numbers during the summer, and our domestics do not know the simple methods of Continental people of preserving them for winter salads in weak brine. In writing for the information of gardeners the writer of these papers seems quite to ignore the differences existing between the practices required by the grower of vegetables for a family and the grower for market. No allowances are made either for different parts of the kingdom, for particular tastes, for variation in soil, elevation, water supply, quantity or quality of manures, and a few other considerations beside, that will occur to any one having to keep up either a constant or an intermittent supply in suburban or purely country establishments. *M. W.* [It should be remembered that Mr. Earley writes under the heading "Market Gardening." Ed.]

**The Dodder.**—The note on the above by "W. G. S." is interesting, and proves pretty conclusively that the Dodder seed had been present in that of the Clover when sown. An almost similar case has occurred here in which two large fields of Clover, situated nearly 500 yards apart, sown with seeds procured from the same source were infested, indeed partially ruined, by the greater Dodder (Cuscuta europæa). There could be no doubt, in this case at least, that the Dodder seeds were imported with those of the Clover, more especially as other fields on the same farm, but sown with Clover obtained from a different source, were perfectly clean, and which should make seed-vendors very careful before disseminating the germs of such a ruinous as well as troublesome plant. *A. D. W.*

**Stocks Degenerating.**—Can any of your readers give a satisfactory reason why the high-coloured annual Stocks (Matthiola annua) so often fail to develope their proper colours—say crimson or purple—and produce flowers which are blotched with white, often so heavily as to have a thoroughly motley, and anything but ornamental aspect? It is not in the particular variety, as some plants come true, and sometimes plants from the same seed packet are true one year and mottled the next. It scarcely seems to be caused by the chemical constitution of the soil, as it happens in various positions, and some few plants come high-coloured beside the degenerated ones. Mine have been very badly affected this year, though the plants seemed healthy enough, those which should have been crimson showing more white than crimson in their flowers. Can anything be done to prevent this degeneration?—which no doubt has been experienced and regretted by others besides *M. C.* [It is so with us, but we own to an appreciation of the variety. The appearance is due to deficient vitality, but how produced we cannot say. Ed.]

**Notes from the Banbury Show.**—I was one of the judges of vegetables at this show on Tuesday last, and amongst the good things shown the Rousham Park Hero Onion and Neal's Ne Plus Ultra Runner Bean were well to the front. The Hero Onion, notwithstanding the past dry season, was staged in mag-

nificent form by Mr. Wingrove; the bulbs were very large and handsome, some of them scaled nearly 1½ lb. Two or three lots of the Improved Banbury were shown, as also other kinds, but none could come near to the Hero: it gained all the prizes in the first class. Ne Plus Ultra Bean was shown by Mr. Wingrove, and it is not too much to say that the prize dish of fifty pods was the finest lot I ever saw. I have grown the Champion Runner, as also Girtford Giant, both very good things, but they are not equal to this variety. It is, I understand, the result of several years' careful selection by Mr. Neal, gardener to P. Southby, Esq., Bampton; it is longer than Girtford Giant, but not so broad, but as straight as it is possible for a Bean to grow. Mr. Deverill, of the Royal Seed Stores, Banbury, has purchased Mr. Neal's stock, and he showed a grand lot of pods, "not for competition," as also twenty-six varieties of Onions, which proved a very interesting feature of the show. Mr. Deverill did not go in for size, though they were large enough certainly, but placed before the public true types of the various stocks, and they did him great credit, proving the great interest he takes in the selection of his various stocks of Onions. Doubtless we shall hear more about this collection. *H.*

**Fertilisation of Figs, &c.**—The facts mentioned in your journal, No. 608, August 22, p. 247, under the heading of "The Fertilisation of Figs: Stones in Trees," are well-known to me, but it is doubtful whether both practices may not be mere prejudices. Figs ripen abundantly in many countries, certainly in Central Italy and Egypt, not to mention England, without the aid of the wild fruit. Jujubes, in Maltese Zinzelli, in Italian Guiggiolo (Zizyphus vulgaris, Linn.), ripen their fruit abundantly in this country, and at Bagdad, like other trees, without being laden with stones. Nor do the natives of Central Italy even know that such a practice exists anywhere. It is a singular circumstance, however, that in Apulia, near Taranto, the southern Italians load the prickly Pear or Indian Fig with stones in the same manner and with the same intention as the Maltese do the Jujube; whereas the Maltese, who also largely cultivate the Prickly Pear, do not do so. Thus we see the same practice applied by two southern European races to two widely different plants; we must, therefore, suppose it is the tradition which has survived of some very remote superstition. It may interest some of your readers to know that the tree and fruit of the Jujube, respectively Guiggiolo and Guiggiola, have given rise to the following Italian proverbs:—"*Quando il Guiggiolo si riveste e tu ti spoglia, quando si spoglia e tu ti vesti*"—"When the Guiggiolo puts on its leaves you strip, when it casts its leaves you dress"—in allusion to the Jujube being one of the latest trees to bud and earliest to shed its leaves. Of the fruit Guiggiola, "*Questa e la Guiggiola?*"—"This is the question." "*Cavare da d'un luogo la Guiggiola,*" or "*Guadagnare altro che Guiggiola*"—"To derive a large gain." "*Meglio grado l'aqua delle Guiggiole*"—"I do not despise the water of the Zizyphus" is the literal translation—is said ironically of one who is very precise. The allusion refers to a decoction of the dried fruit used for colds, &c. *H. J. Ross.*

**Grapes at Exeter Show.**—The judging of Grapes at the above show gave, I believe, general dissatisfaction, and in one of your contemporaries has drawn forth some rather plain and strong criticism. I have no desire myself to enter into any controversy on the subject, but I observe in the report of the show in your columns your reporter states that in the 2d prize collection of six bunches (that of Mr. Ward, Longford Castle), Foster's Seedling and Muscat of Alexandria were not quite ripe. If appearance goes for anything, I should certainly say they were ripe, for their colour left little or nothing to be desired; indeed, regarding the first-named variety I can say that only on one previous occasion have I seen it better. *Grape Grower.*

**Slaughter's Rose Tube.**—This is neither registered nor patented, but is a great and desirable help in the way of setting up cut Roses for exhibition. It is in two parts. First of all there is a rimless well containing the water. Then the portion that holds the Rose is furnished with a circular flattened rim like that of an ordinary Dahlia tube, but the hole which contains the flower is much smaller. The flower is placed in this, and being hollow at the bottom, the water in the well rises within it, and the stem of the flower is immersed in it. But this is not all. According to the usages of the National Rose Society blooms of Roses may be wired. For this purpose, Mr. Slaughter uses a somewhat thick and serviceable but decidedly flexible galvanized wire. At one end is a loop through which the stem of the flower is passed until it is immediately under the blossom; the stem is fastened to the wire, it is then placed within the tube, and there it is in a position favourable to showing off the Rose to the best advantage. A stand of flowers set up by Mr. Slaughter is highly attractive. What an improvement this is on the old plan of simply placing the stem of the Rose in damp moss without the assistance of the tube. One thing militates against the wide introduction of Mr. Slaughter's tube, namely, that at some country shows the use of the wire would lead to disqualification. But the new tube and the use of the wire will gradually find their way into general use, to the advantage of Rose exhibitions. *R. D.*

**Erythrina Crista-Galli.**—It is singular that this beautiful old plant commands at the present time very little attention, judging from its extreme rarity in gardens. Why this should be perplexes me. I can call to mind but few instances where it has come under my notice. It is cultivated at Messrs. Lucombe, Pince & Co.'s nursery at Exeter, and I remember seeing a fine specimen some years ago on the open wall and in bloom at the Exotic Nursery, Chelsea, and another at St. Michael's Hill Nursery, Bristol. Just recently, however, I have discovered a beauty, enough to make one's mouth water, which, according to the obliging gardener's (Mr. Symes) testimony, has been flourishing in its present position for a great number of years. It is growing under the shelter of a greenhouse wall in the open border at Lady Drake's charming residence, near the mouth of the Exe in Devonshire, and its many shoots—which, by the way, spring up annually from the root-stock—are in reality large racemes of gorgeous bright scarlet flowers. This fine species is certainly worthy of extended cultivation, at least in the Southern Counties, where it is hardy, or almost so. *W. Napper.*

**Mesembryanthemum edule.**—Virgil speaks of certain shores as being *myrtetis lætissima*; write instead mesembryanthemis, and you have a description applicable to the coast line of Tresco, one of the Cassiterides. In Mr. Dorrien Smith's garden this Mesembryanthemum completely hides a steep and rocky escarpment, hangs down 10 feet or more over the face of a granite cliff, opposite the *Sic vos non vobis* written over the entrance; and thirdly, forms a charming bank of flower and foliage, 60 feet long, on one side of the tennis lawn. The two harbours of the island are named Old and New Grimsby. The curving shore above high-water mark is covered by broad patches of it. The flowering season begins in May and continues to the end of August. Blossoms now are few and far between, but a copious crop of the fruit is ripening off. Stretches of wall are completely hid. Where it cannot root this succulent must derive some nourishment from its own dead leaves and shoots, over which it densely clambers. It only seems to re-root, however, when growing in sand or other soils. The use that can be made of this plant on the south coast of England in binding sandy banks by the sea shore, or trailing over rocky or stony ground, promises to be immense. There can be no doubt, after Mr. Brown's explanation, that the Mesembryanthemum, so common in the Scilly Islands, is M. edule. *C. A. M. C.*

**Frost in Scotland.**—It is worth recording as something unusual that we had 6° of frost on the night of August 30 all along this pleasant valley. Its blasting effect is visible on every breadth of Potato and other tender crop, the Potato especially being quite black, and giving off a disagreeable smell to-day. Dahlias, Heliotropes, dwarf French Beans and Scarlet Runners—always a late crop here (we gathered our first dish on August 25—are blackened, and of course are done for this year. The summer has been unusually dry, and everything is suffering for want of rain. *J. Macaulay, Castle Leod, Strathpeffer.*

**Begonia Princess Beatrice.**—Among the varieties of the flowering Begonias adapted for bedding, this—one of Messrs. Sutton & Sons' seedlings—must take a high place. It as a dwarf growing type of the semperflorens section, with dark bronze foliage, and bearing in the most profuse manner large numbers of pink and creamy-white flowers, that almost hide the foliage from view. There is a large bed of it in the Portland Nursery at Reading, affording an excellent test of its bedding qualities. Dry as the season has been, it is seen to the very best advantage, dwarf, compact, yet free branching plants, flowering with great persistence. There is one point in its favour as a continuous-flowering bedding plant—it produces very few, if any, pods of seeds, and so the energies of the plants are not expended in maturing seed-pods. A few weeks ago, a basket of this Begonia was sent up to one of the meetings of the Floral Committee at South Kensington, but, as frequently happens, it was not seen to the best advantage. If this body could see the large bed of this Begonia at Reading, I am persuaded an unanimous vote would award it a First-class Certificate of Merit. *R. D.*

**Pear Congress.**—It is to be hoped that Mr. Moore's excellent suggestion (see p. 274) will meet with the attention it so well deserves at the forthcoming Pear Congress, viz., a classification of Pears in accordance with their ascertained flavour, which would be a valuable assistance to all about to plant or regraft, and of the latter at least there will no doubt be many who will feel grateful for reliable information on the subject. The influence of soil and situation, as well as methods of training, are also matters worthy of the consideration, which they will doubtless receive at the hands of the Congress. Fruits grown in soil of a light character are frequently found to differ very materially from those of the same variety produced upon a heavy soil, or a soil in some way differing in character. Even in the same garden such variety as the Marie Louise produced upon a standard differs so materially in appearance from the same variety grown upon a wall-trained tree, that at first sight they might well be regarded as distinct varieties, while the difference in flavour is equally distinct—the produce of the standard tree being decidedly the best flavoured, while the fruit of the trained tree has the advantage in appearance. *P. Grieve.*

**The Wild Clematis.**—It is impossible, even if one had never read Carlyle, not to feel a great interest in towns like Bury St. Edmund's. The broad open space between the Angel Hotel and the Botanic Gardens is unlike anything in any other town, and imposing in a very high degree. The magnificent entrance into the gardens needs the art of the photographer or the pen of one versed in architecture or archæology; without one or both description would be beggarly. But there is something about the high wall on one side of the entrance that everybody can understand the beauty of without word-painting or exact description. The something is, that for a long distance it is overhung by a fluttering garland of the wild Clematis. Stray bits of walls in ruins are often taken possession of in the same way:

> "Nature's kindly store
> Of generous richness compensating Art
> For Time's dread ravage." *C. A. M. C.*

**Beds of Lilium giganteum in West Grinstead Park.**—These are a great feature in that portion of the gardens in West Grinstead Park, the residence of Sir W. W. Burrell, Bart., M.P., in which Mr. H. Bowell, the gardener, has naturalised not a few valuable things. There are three complete beds, and a fourth in course of being filled, as offsets are available. Two of them flowered this season: the flower-stems and seed-pods remain, and the visitor can glean some idea of the beauty of these stately plants a few weeks ago. The beds are on the grass in a cool and shady position, open to the sun in the earlier part of the day, and facing the north. The oldest was planted some years ago, and it has remained untouched; the second was made with the earliest obtainable offsets; and others are being completed in the same way. It takes two or three years at least to get into the flowering state, and then the plants flower annually. The offsets are formed in the shape of small bulbs round the base of the flowering stem just below the surface of the soil, and when sufficiently advanced they are taken off and replanted. During winter leaf-mould and leaves are heaped upon the beds to keep the roots without the reach of frost. As soon as the flowering stems begin to show signs of growth, Mr. Bowell has a flower-pot inverted over each, and when cold weather threatens some leaves or other protecting material is heaped upon them. When too big to be covered by pots they are removed,

and a canvas screen is placed around the beds to keep the biting winds from harming the advancing stems; and all this care is amply repaid by a very fine head of bloom in July and August. In is computed that in the oldest bed ths bulbs originally planted are some 3 feet below the surface, in consequence of the leaf-mould being heaped upon the beds in winter and spring. *R. D.*

# Reports of Societies.

## READING HORTICULTURAL AUTUMN SHOW: August 27.

This old Society appears to have fallen upon evil times this season. On the occasion of their summer show on May 21 it was a drenching wet day. The autumn show day was dull, cold, and threatening, and there must have been in both cases a serious falling off in the exchequer receipts, and it may necessitate the abandonment of one of the two shows. The exhibition took place, as usual, in the Abbey ruins, a second tent being necessary to take the vegetables; and the exhibition was in all respects up to the average of former years, the show of fruit being very fine indeed.

### Stove and Greenhouse Plants.

In the class for nine specimens Mr. J. F. Mould, nurseryman, Pewsey, was 1st, with a fairly good lot; Mr. H. James, Castle Nursery, Lower Norwood, being 2d. Both collections appeared to have done good service previously, and it is not necessary to give their names.

Mr Mould had the best specimen in flower, staging a good Erica; Mr. James being 2d, with a Heath also.

Mr. Parham, gr. to H. J. Simmonds, Esq., Caversham, Reading, had the best new and rare plant, staging a very fine specimen of Adiantum Williamsi; Mr. Pound, gr. to G. May, Esq.,Caversham, being 2d, with Cattleya Gaskelliana.

In the amateurs' class for four stove and greenhou e plants Mr. Parham was 1st, with excellent specimens of Clerodendron fallax, a fine Lantana, and Vinca rosea and V. alba; 2d, Mr. Lawrence, gr. to Mrs. Owen Knox, Caversham.

Fuchsias were numerously and finely shown. Mr. Brooker, gr. to R. Tompkins, Esq, Reading, was 1st, with six large and finely grown plants, a little past their best; Mr. Bright, gr. to P. Karslake, Esq., White Knights, Reading, being 2d; and Mr. E. Jones, nurseryman, Henley-on-Thames, 3d.

Mr. Bright had the best four plants, and Mr. Mayne, gr. to Miss Moon, Bath Road, Reading, was 2d.

Cockscombs were good, especially those shown by Mr. Elliot, gr. to J. Hibbert, Esq., Braywick, Maidenhead.

Balsams were not up to their usual mark at Reading; and Achimenes poor.

Mr. Hatch, gr. to S. B. Stevens, Esq., Reading, had a group of six good Lilies, well grown and flowered, of the speciosum type.

Bedding Pelargoniums were also a good feature.

### Foliaged Plants.

Mr. Parham was 1st, with six fine specimens, having Maranta zebrina, Alocasia Lowii, Pandanus Veitchii, Maranta Veitchii, Croton variegatum, and C. majesticum; 2d, Mr. Mould, with good specimens also.

Mr. Parham also had the best six Ferns, showing well-grown plants of Alsophila australis, Davallia Mooreana, Cibotium Schiedei, Davallia Tyermani, Cyathea dealbata, and Gymnogramma chrysophylla; 2d, Mr. James; 3d, Mr. Mould. Mr. Brooker had the best four specimens. Coleus were good, so were table plants.

Mr. James had the three best Palms, Mr. Parham running him very close.

Mr. Mayne had the only six Lycopodiums, smaller than usually seen at this show.

### Groups of Plants for Effect.

Five of these competed: Mr. Parham was 1st with a very tasteful arrangement; Mr. Sumner, gr. to J. H. Millard, Esq., Reading, being 2d; Mr. James, of Norwood, and Mr. Phippen, Reading, being placed equal 3d. At Reading it is usual to arrange these groups in the form of squares on a sloping bank. Mr. James put his in the form of a half-circle, which made it much more effective.

### Cut Flowers.

These were numerous and good. Cut Phloxes were finely shown by Mr. Woodford, gr. to A. Palmer, Esq., Reading; Mr. J. Tranter, Upper Assenden, Henley-on-Thames, being 2d. The stands were composed of nine bunches.

Messrs. J. Cheal & Sons, nurserymen, Crawley, had the best stand of eighteen Dahlias, Mr. Tranter being 2d—the flowers very good indeed; and the same positions were maintained in the class for twelve fancies.

Messrs. Cheal & Sons had the best lot of twelve bunches of single Dahlias, setting up a very fine lot, admirably arranged; Mr. Jackson, Kidderminster, being 2d.

The best eighteen Roses.—A remarkably good lot came from T. W. Girdlestone, Esq, Sunningdale.; Messrs. J. Cheal & Sons 2d.

Mr. Girdlestone had the best twelve Roses; Mr. Turton, gr. to J. Hargreaves, Esq., Maiden Erlegh, being 2d. Asters in three classes, Gladioli and double Zinnias were all well shown, the season considered.

Mr. James had the best eighteen flowers of stove and greenhouse plants; Mr. Phippen came 2d with hardy flowers, a very fine lot.

In the class for six bunches of hardy flowers, Mr. Summers was 1st; and Mr. Durman, gr. to J. W. Workman, Reading, 2d.

### Table Decorations, &c.

The best three vases for table decoration came from Miss Phillips, Abbot's Walk, Reading; Mrs. Johnstone, Donnington, Newbury, being 2d.

The same number in wild flowers came from Miss Cole, Reading, a charming arrangement; Miss Barrett being 2d.

Miss L. Phillips had the best basket of sweet-scented flowers; Miss N. Cole, Reading, 2d.

Mr. Phippen had the best bridal bouquet; Mr. Jackson being 2d.

Mr. Elliot had the best three buttonholes; Mr. Phippen being 2d.

### Fruit.

Grapes were a great feature, they were numerous and very fine. As usual, Mr. Ashby, gr. to W. Fanning, Esq., Whitchurch, was 1st, with three bunches of Black Hamburgh, staging superbly finished examples; Mr. Turton was a good 2d, and Mr. Cakebread, The Gardens, Rayner's Penn, 3d.

In the class for any other black Mr. Ashby was 1st, with very fine Madresfield Court, Mr. Cakebread being 2d, and Mr. Goodman 3d, with superb Alicante.

Mr. Maher, gr. to A. Waterhouse, Esq., Newbury, was 1st, with Muscat of Alexandria, Mr. Ashby being 2d, and Mr. Robinson 3d. These were very good.

In the class for any other white Mr. Kneller, gr. to W. S. Portal, Esq., Malshanger Park, Basingstoke, was 1st, with very fine Buckland Sweetwater; Mr. Ashby being 2d, with Golden Hamburgh; and Mr. Maher 3d, with Buckland Sweetwater.

Time did not permit of notes being taken of the awards for Peaches, Apricots, Nectarines, and Figs, shown in single dishes, but there was a fine display.

Mr. Bridgman had the best three dishes of Plums, Mr. Ross the best six dishes of dessert Apples, Mr. Turton the first six dishes of culinary sorts, and Mr. Hermon the best four dishes of Pears.

Collections of fruit were a great feature. The best eight dishes came from Mr. Howe, gr. to Sir R. Sutton, Bart., Benham Park, Newbury, who had Madresfield Court and Muscat of Alexandria Grapes, Peaches, Nectarines, Figs, Pine, Apricots, and a Melon; 2d, Mr. Goodman, Bourne End; 3d, Mr. T. King, The Gardens, Devizes Castle.

Mr. Ashby had the best six dishes, setting up Muscat of Alexandria and Black Hamburgh Grapes, Peaches, Nectarines, Figs, and Melons; 2d, Mr. Lockie, The Gardens, Oakley Court, Windsor; 3d, Mr. Cakebread.

### Vegetables.

Of these there was a wonderful show. Messrs. Sutton & Sons offered special prizes for nine dishes, Mr. Ilott, gr. to Major Allfrey, Wokefield Park, being 1st; Mr. Elliott 2d, Mr. Ross 3d, and Mr. R. Lye, The Gardens, Sydmonton Park Nursery, 3d.

The 1st of their special prizes for six dishes went to Mr. G. H. Richards, The Gardens, Somerley, Ringwood; Mr. Lye being 2d, Mr. Kneller 3d, and Mr. Lockie 4th.

Mr. Howe had the best brace of Melons, Mr. Ross 2d, and Mr. Turton 3d.

Messrs. Webb & Sons, seedsmen, Stourbridge, offered special prizes for six dishes of vegetables, Mr. Bowerman, The Gardens, Hackwood Park, Basingstoke, being 1st; Mr. Elliott 2d, and Mr. Lye 3d.

Messrs. Carter & Co., seedsmen, High Holborn, offered special prizes for a brace of their Model Cucumber; Mr. Elliott was 1st, and Mr. Beckett 2d.

Mr. Lockie was 1st, with a brace of Blenheim Orange Melon, the special prizes offered by the same firm; Mr. Howe being 2d.

Mr. C. Fidler, Potato merchant, Reading, also offered special prizes for six dishes of Potatos. Mr. Ilott was 1st, with very fine examples of Lady Truscott, Fifties, Annie, Prizetaker, International, Reading Ruby, and Standard; 2d, Mr. Elliott; 3d, Mr. Ross; 4th, Mr. Lye.

## HARPENDEN HORTICULTUAL: August 26.

The seventh annual show of this Society was held, as in former years, near the entrance to the charming Park of Sir J. B. Lawes, Rothamsted, President of the Society. The day, although cloudy and somewhat threatening, proved fine and enjoyable, and the influx of visitors was accordingly large. The show has now entirely developed from a village gathering to a county exhibition, and enrols amongst its patrons most of the principal aristocracy in the neighbourhood. The committee may well, therefore, be congratulated, not only upon their long list of subscribers, but for the collection of floricultural and horticultural productions brought together. The exhibits were contained in three marquees, the two largest being each of them over 100 feet in length by 50 feet wide; the third, a smaller one, being devoted exclusively to dinner-table decorations and exhibits in the ladies division forming a pretty and, to the fair sex, one of the chief attractions of the show.

### Plants.

In the class for six stove and greenhouse plants, distinct, not less than three in flower, there were but two competitors—C. R. Fenwick, Esq. (gr., Mr. G. Underwood), High Firs, Harpenden; and J. B. Maple, Esq. (gr. Mr. C. Pollard), Childwickbury, St. Alban's; both showed plants of great merit, those of the former, to which was awarded 1st prize, including Dipladenia boliviensis, Allamanda Schottii, Bougainvillea glabra, Vinca oculata, V. rosea, and Croton variegatus.

For a group of plants, arranged for effect, on staging 12 feet by 6 feet, special prizes were offered by C. R. Fenwick, Esq., High Firs, and were won by J. B. Maple, Esq., and W. B. Greenfield, Esq. (gr., Mr. T. Freeman, Beechwood Park); both were good, but the collection of the latter contained less colour and more foliage, imparting a somewhat heavy appearance.

The entrance to the largest tent was adorned with an exceedingly useful set of flowering plants, in competition for a special prize offered by W. S. Brown, Esq., Digswell House, Welwyn, and was deservingly awarded to C. R. Fenwick, Esq. (gr., Mr. S. Underwood), High Firs, Harpenden.

Rapid strides have of late years been made in the improvement of tuberous-rooted Begonias. Few would have thought a few years ago that this deservedly popular class of free-flowering plants would have attained to such a high standard of perfection as they now have done. No firm has done more towards effecting this improvement than Messrs. J. Laing & Co., of Forest Hill.

For a special prize offered by this firm for six named tuberous Begonias in flower, Mrs. Warde (gr., Mr. G. Smith), Bennetts, Harpenden, staged six of the handsomest and cleanest grown plants we have seen for a long time, including President Burelle, a double fiery red with blooms 3 to 4 inches across; Princess Beatrice, a fine pure white; and General Wood, a velvety-crimson, of great beauty.

Only two entries were made for exotic Ferns for a special prize offered Mrs. Olive, Wheathamstead House, premier honours going to C. R. Fenwick, Esq. (gr., Mr. G. Underwood), for Adiantum Williamsii, A. formosum, A. trapeziforme, Davallia Mooreana, Microlepia hirta cristata, and Lygodium scandens, which was especially worthy of attention. The 2d prize went to A. B. Twining, Esq. (gr., Mr. A. Rumbolds), The Elms, St. Alban's, whose Ferns were remarkably good, in fact there was a close run between the competing lots.

There were some well grown Fuchsias shown in fine bloom, the 1st prize being taken by H. T. Hodgson, Esq. (gr., Mr. C. Sibley), the same exhibitor taking 1st for zonal Pelargoniums.

Plants for the decoration of the dinner-table were shown in quantity. J. B. Maple, Esq. (gr., Mr. C. Pollard), was 1st; the 2d prize for an equally creditable lot going to P. Bosanquet, Esq. (gr., Mr. H. Tilbury), Little Berkhamsted.

### Cut Flowers.

The cut flowers exhibited on the side tables comprised a magnificent collection of Roses, Dahlias, and herbaceous flowers from the nurseries of Messrs. W. Paul & Son, Waltham Cross, and an equally attractive group of stands from Messrs. G. Paul & Sons, the Old Nurseries, Cheshunt, which afforded abundant interest to all lovers of good flowers and imparted a bright and cheerful appearance to the show.

The Roses which seemed to us most worthy of attention were Duchess of Connaught, H.P.; Madame Eugène Verdier, Madame Remond, Tea-scented; Grace Darling, White Baroness, H.P.; Beauté de l'Europe, Tea-scented; Madame Fanny de Forest, Noisette Perpetual; Queen of Queens, H.P.; Sultan of Zanzibar, Victor Hugo, Pride of Reigate, and Mrs. Baker. The red climbing Ayrshire Rose, Madame Viviand Morel, is worth notice, and for general cultivation Charles Lamb and Garden Favourite are recommended, while Emperor and Empress are both valuable varieties for button-hole bouquets.

The recent change in the weather came just in the nick of time and enabled a charming lot of Dahlias to be staged, remarkable both for size and colour, the 1st prize for a collection of forty-eight varieties being awarded to Mr. Henry Glasscock, Bishop Stortford, whose association with Dahlias is well known; Messrs. Paul & Son, Cheshunt, took 2d, for a good lot in excellent condition.

In the class for twenty-four Dahlias, Mr. Thos. Garrett, Bishop Stortford, exhibited varieties of the greatest excellence, with some stands of seedlings, not for competition, the blooms of which for size and depth of hue almost rivalled any we ever remember to have seen.

Messrs. Paul & Sons, Cheshunt, obtained 1st place for twelve Roses; the Rev. W. H. Jackson, Stagsden Vicarage, coming 2d—one of the best exhibits in this class, that of W. G. Brown, Esq., Digswell House, being unfortunately disqualified by reason of the added foliage not being allowed.

### Fruit.

In the fruit classes some capital exhibits were shown, Grapes being particularly well represented; but Peaches and Nectarines were of poorer quality. The chief prize for Grapes was won by J. Macandrew, Esq. (gr., Mr. J. J. Lowry), Belmont, Mill Hill, for three bunches, comprising Muscat, Alicante, and Madresfield Court, fine in berry and colour.

For special prizes offered by H. T. Hodgson, Esq, Treasurer of the Society, for a collection of fruit, eight dishes, distinct kinds, there were several competitors, the winners being J. B. Maple, Esq., (gr., Mr. C. Pollard), Childwickbury; W. B. Greenfield, Esq. (gr., Mr. J. Freeman), Beechwood Park; and P. Bosanquet, Esq. (gr., Mr. H. Tilbury), Pondfield, Little Berkhampstead.

### Vegetables.

Notwithstanding the unfavourableness of the present season for vegetables as a whole, there was but little to complain of in the numerous and well-grown productions brought together on this occasion, the Potatos being remarkable both for size and symmetry.

The special prizes offered by Messrs. Webb & Sons, Wordsley, Stourbridge, for the best collection of vegetables, consisting of six distinct kinds, to include at least

two of Webb's varieties, and named in their Spring Catalogue for 1885, there were five competitors, all showing vegetables that left little to be desired. The cottagers' classes were well contested.

WILD FRUITS.

A particularly interesting feature, and one that attracted a vast amount of attention, were several collections of wild fruits, separately arranged and named for prizes, offered by D. Martineau, Esq., Clapham Park, open to boys and girls of any of the schools in the parish of Harpenden. The youthful competitors showed great discrimination and skill in their selections, and gathered as many as forty different species.

DINNER-TABLE DECORATIONS.

There were four tables in the decorative competition, prizes for which were contributed by ladies in the neighbourhood. In this display the 1st prize was awarded to Miss Bloomfield, of Luton; with a few flowers of various colours, mixed with Maidenhair Ferns and grasses, a light and graceful adornment was produced. Miss Sheppard, of Wheathampstead, was placed 2d. Here the arrangement was somewhat heavy, although choice, consisting chiefly of variegated foliage of Coleus, with the bright yellow flowers of Allamanda; the small side vases contained little bouquets in which scarlet Pelargoniums predominated. The fruit was of first quality. The 3d prize was awarded to Mrs. Stevens, of Harpenden. Here, again, the Allamanda prevailed, a central basket being almost over-filled with flowers of that intense bright yellow colour. This table was, however, much admired, and great diversity of opinion was expressed as to the several merits of each.

HONEY.

In this division the exhibits were more numerous than usual, and of marked excellence, bee culture having made great progress in the immediate neighbourhood during the last few years, owing mainly to the praiseworthy exertions of the Herts branch of the British Bee-keepers' Association. *J. J. W.*

## SANDY AND DISTRICT HORTICULTURAL: August 28.

THIS is undoubtedly one of the most important and successful of the exhibitions of this character held in the county of Bedford. Some forty-four towns and villages, mainly the latter, are represented upon its district committee, and it is, therefore, no wonder that its shows, when favoured by fine weather, are so successful that on this occasion, as in 1884, the sum of just over £179 was taken in admission. It may be termed a universal show, for it includes plants, flowers, fruits, vegetables, farming and market garden produce, needlework and darning, honey, butter, eggs and dressed fowls, and also cage birds, pigeons, poultry, rabbits, and bees. The show was held, as usual, in the grounds, Sandy Place, the residence of J. H. Foster, Esq., the tents containing the above exhibits being ranged in a circle round a considerable space of ground.

PLANTS.

The handsome prizes offered for collections of ten stove and greenhouse plants were sufficiently good to enable Mr. J. Cypher to bring a group from Cheltenham, and he had no difficulty in taking the 1st prize, his leading plants being Phœnocoma prolifera Barnesi, a very fine specimen Statice profusa, Erica retorta major, E. Irbyana, E. obovata purpurea, Rhododendron Duchess of Edinburgh, Ixora Pilgrimi, and Bougainvillea glabra; Mr. Rabbitt, gr. to General Pearson, The Hasells, Sandy, came in a good 2d; and Mr. J. F. Mould, nurseryman, Pewsey, 3d.

In the class for six flowering plants, open to all except nurserymen, Mr. G. Redman, gr. to J. H. Goodjames, Esq., Eynesbury, St. Neot's, was the only exhibitor, having a very fine lot consisting of a Statice profusa, a magificent Bougainvillea glabra, Ixora javanica floribunda, Stephanotis floribunda, Dipladenia insignis, and Justicia carnea.

One class open to all was for twelve plants of zonal Pelargoniums, and here Mr. Rabbitt was 1st with a very good lot, fresh and nicely grown; Mr. Redman being 2d.

Tuberous-rooted Begonias were an excellent feature, especially those shown by Mr. W. H. Apthorpe, Cambridge, good varieties, admirably grown and flowered, and fully illustrating what admirable exhibition plants they make when well managed.

Other flowering plants comprised Liliums, Achimenes, Balsams, Fuchsias, the production of local growers, and generally well done.

Foliage plants were represented by a good group of six specimens from Mr. G. Claydon, gr. to J. Hastell, Esq., Woodbury Hall, Sandy, Croton Queen Victoria and C. Weismanni being well grown and coloured; Mr. W. Rabbitt was placed 2d.

Groups of six stove and greenhouse Ferns were also a good feature, the best coming from Mr. T. Titbrook, gr. to B. Brown, Esq., Houghton, Huntingdon; it included a very fine Adiantum Williamsii, which makes a charming exhibition Fern; A. concinnum, A. c. latum, &c.

CUT FLOWERS.

There was a good competition in the class for forty-eight Roses, no less than twenty-four varieties: Messrs. Paul & Son, Old Nurseries, Cheshunt, were 1st; Mr. G. Prince, Oxford, 2d; and Messrs. Burrell & Co., Cambridge, 3d; all with capital flowers for the season.

▶ The best twenty-four blooms came from E. B. Lindsell, Esq., Hitchin; the Rev. G. H. Gall, of the same place, being 2d, both local growers of considerable repute.

The only exhibitors of twenty-four spikes of Gladioli were Messrs. J. Burrell & Co., Cambridge, who staged a very fine stand of blooms of the best quality.

In the class for twenty-four Dahlias, show varieties, Mr. R. Petfield, gr. to A. J. Thornhill, Esq., M.P., Diddington, Huntingdon, was 1st with a remarkably fine lot of flowers, including excellent examples of the Rev. J. Goodhay, Ethel Britton, Statesman, Rosetta, Herbert Turner, Shirley Hibberd, J. W. Lord, Perfection of Primroses, Vice-President, Mr. P. Wyndham, George Rawlings, Mrs. Harris, Mrs. Gladstone, Joseph Ashby, James Vick, Goldfinder, Imperial, Sunbeam, John Wyatt, Harrison Weir, and John Henshaw; 2d, Messrs. Paul & Son; 3d, Mr. J. House, Peterborough. In the classes for twelve blooms of show, and for six fancy Dahlias, Mr. Petfield was again 1st, his flowers being of the highest order of merit. Asters, Zinnias, and Marigolds, owing to the drought, were not so good as they are usually seen at Sandy.

The best stand of twelve bunches of cut flowers came from Mr. Redman, a very fine lot indeed, including Lapageria rosea, Dipladenia profusa, Allamanda Hendersoni, Anthurium Scherzerianum, &c. Mr. T. Smith, gr. to Miss Cheere, Papworth Hall, St. Ive's, was 2d.

A very fine lot of cut blooms of single and double Begonias came from Mr. E. Edwards, florist, Leighton Buzzard, showing many shades of colour, and they were deservedly Highly Commended.

FRUIT.

This was one of the best exhibitions of fruit seen at Sandy for some time, baskets of eight varieties being strongly recommended. The best came from Mr. G. R. Allis, gr. to Major Shuttleworth, Old Warden, Biggleswade, who had black and white Grapes, Peaches, Nectarines, Figs, Cherries, and Apricots; Mr. Tilbrook came in a close 2d. Mr. W. H. Murfin, Great Stoughton, St. Neot's, had the best two bunches of Black Hamburgh Grapes. Mr. Tilbrook had the best two of any other black, staging superbly finished Gros Maroc, and also the best two bunches of Muscat of Alexandria; Mr. Aldis being 1st with any other white, putting up good Buckland Sweetwater. All other kinds of fruit were well represented, especially Plums, Apples, and Pears.

VEGETABLES.

Owing to the drought these were not so numerous as usual, but they were very fine in quality. Mr. Ellis, Bedford, had the best collection of twelve varieties—a very fine lot indeed.

In the class for six sorts of Potatos Mr. Arthur, gr. to P. Meyer, Esq., Orwell, Royston, was 1st, with a very fine collection, the sorts being Reading Russet, The Dean, Schoolmaster, Prime Minister, Chancellor, and Mr. Bresee; 2d, Mr. Carter, gr. to Captain Duncombe, Waresley Park, St. Neot's.

In the classes for single dishes of round varieties Schoolmaster, Reading Russet, and The Dean were especially good.

Onions were a great feature. Sandy is one of the great Onion growing districts, and is famous for its fine produce. Among the many varieties shown one marked a new variety, staged in the White Globe class, and said to have been raised from Magnum Bonum crossed with Nuneham Park, was especially fine.

Carrots, Parsnips, Beans, Turnips, &c., were in strong force, and generally of very fine quality.

## HANDSWORTH HORTICULTURAL: August 26.

THE twenty-second exhibition of the Handsworth Floral, Horticultural, and Cottage Gardeners' Society was held on the above date. The show, as a whole, was much better than usual, and the attendance very good. The principal features of the exhibition were the groups of plants arranged for effect, the space to be covered not less than 400 feet, and the collections of fruit in the open class.

Mr. Thacker, of Nottingham, carried off 1st honours in groups (open) with an exceedingly artistic arrangement in "greens" (to use a Whistlerian expression), which had a very sombre appearance. Palms were the predominant feature, and the groundwork was of dark green moss, the whole giving one an idea of a tropical forest in miniature. Ravines, plains, and gullies were represented, and in suitable positions, Alocasias, Anthuriums, Bertolonias, Caladiums, Gymnostachys, Darlingtonias, &c., were placed flowers were meagrely introduced, the "high lights" and "middle lights" being dependent upon a few representatives of Alocasias, Anthuriums, and Crotons: a little more colouring would have rendered the group more satisfactory, charming as it was. The 2d prize was deservedly won by Mr. Hiram Shaw, nurseryman, Richmond, Sheffield, with a splendid group; here flowering and foliaged plants were more equally represented, and excellent taste was displayed in the arrangement of the colours, but Mr. Shaw did not aim at artistic effect in the sense as applied to Mr. Thacker's group, and evidently relied upon the quality of his plants individually and collectively, without any reference to "scenes from Nature," and the effect produced was magnificent. Mr. Benjamin Crosland, Sheffield, was a good 3d with a very meritorious arrangement, reflecting great credit upon his young sons. Mr. Webb, gr. to J. H. Manners-Sutton, Esq., Newark, was the fourth exhibitor, who would in all probability have secured a better position had he elevated a few of his graceful foliage plants, instead of nearly burying them amongst their stiffer neighbours, and presenting a nearly even surface to the eye; "a word to the wise" is sufficient.

Five collections of fruit were staged in the open class, all of good quality. The premier position was deservedly won by Mr. E. Gilman, gr. to the Earl of Shrewsbury and Talbot, Ingestre, Stafford, who staged good Grapes, Pines, Melons, superb Peaches and Nectarines, and nice dishes of Figs and Apricots; Mr. Edmonds, gr. to the Duke of St. Alban's, Bestwood, was a good 2d; and Mr. Ward, of The Reddings, Alfreton, was 3d.

In single dishes of Grapes, Mr. Ward was 1st, and Mr. Shaw was 2d.

Six Peaches.—1st, Mr. Webb; 2d, Mr. Gilman.

Six Nectarines.—1st, Mr. Gilman; 2d, Mr. Ward.

Six Apricots.—1st, Mr. Gilman; 2d, Mr. Goodacre, Elvaston Castle.

Roses and Dahlias were well shown by Messrs. Proctor, of Chesterfield; Clarke, and Boston.

In the class for gentlemen's gardeners, Messrs. Walker, Broomhall Field Gardens; Foggin, Tapton Hall; Albiston, Rotherham Park; Urton, of Greenhill; and Needham, of Ridgeway, were the chief prizetakers. The Grapes exhibited in this class would have been much better hidden from the popular gaze by means of their own foliage.

Competition amongst vegetables in the amateurs' and cottage gardeners' classes was very keen, the prizes being taken by growers in the surrounding localities.

## BANBURY.

THE thirty-ninth annual show of this Society was held on Tuesday, August 25, in the beautiful grounds of Neithrop House, the residence of Captain Benyon. The exhibition on this occasion fully maintained its former standard of excellence throughout.

For the best collection of ornamental and flowering plants arranged for effect, the prize went deservedly to Mr. Doherty, gr. to Lord North, who displayed judgment and taste in his arrangement; he was also 1st for Ferns, six varieties (British), 1st for black Grapes (not Hamburgh), and 1st for white Grapes (not Muscats).

The 1st card for eight varieties of stove or greenhouse plants went to Mr. Pearce, gr. to Foster Melliar, Esq., followed closely by Mr. Doherty.

For cut flowers, twenty-four bouquets, and not less than eighteen varieties, Mr. Wingrove, gr. to R. N. Byass, Esq., carried off the 1st prize.

The 1st prize for white Muscat Grapes, as also Black Hamburgh was secured by Mr. G. Parker, gr. to M. P. W. Boulton, Esq., in both instances very meritorious exhibits.

The 1st honours for the best collection of fruit went to Mr. Wiles, gr. to R. A. Cartwright, Esq., and the 1st honours for a collection of nine varieties of Potatos, nine tubers of each, was awarded to Mr. Smith, gr. to the Ven. Archdeacon Holbech.

The Onion classes produced a good competition, and proved a feature of the show. Mr. Wingrove, gr. to R. N. Byass, Esq., for the third year in succession, carried off the 1st prize with twelve massive bulbs of Deverill's Rousham Park Hero, some of which girthed 15 inches, and weighed 1 lb. 6 oz. each; the 2d, 3d, and 4th prizes were awarded to the same variety. Mr. Deverill, of the Royal Seed Stores, Banbury, exhibited one of the best collections of Onions ever staged, comprising no less than twenty-six varieties of the leading kinds, all named and tastefully arranged. This stand proved a source of great interest. The same collection will be exhibited at the Dundee and Royal Caledonian shows next month.

One of the best things in the vegetable classes was the new Runner Bean, Neal's Ne Plus Ultra. Mr. Wingrove exhibited fifty specimens, the like of which have never been seen in this district before, and which gained the 1st prize, being a long way before any other variety.

## SCOTTISH HORTICULTURAL ASSOCIATION.

AT a largely attended meeting of this Association, held on Tuesday, September 1, at 5, St. Andrew's Square, Edinburgh—Mr. Malcolm Dunn, Dalkeith Gardens, presiding—Mr. Peter Fairgrieve, Dunkeld, read a paper on "The Formation of Borders for Hardy Fruit Trees." If, he said, the ground was at all inclined to be damp, or the subsoil adhesive, by all means let the border be properly drained. After the drainage was finished the best thing to do was to trench the entire border to the subsoil. With regard to the site he thought sloping ground to the south a great advantage; a dry bottom was indispensable; and it was necessary that the site should be protected from the north and east. Soil had a very great deal to do with the successful cultivation of all fruits, and he believed a good garden soil properly managed would grow most of their fruits most successfully. He did not think it proper to plant on the same place and in the same soil the identical fruit trees that were there previously.

Referring to the danger of drought he pointed out that a proper quantity of soil was a most important matter in the formation of a fruit border, and that, again, had to be determined by the nature of the soil and subsoil. In thin borders roots suffered very much from drought in summer, but that evil could be met by deepening the border. Twenty-four inches of soil was not too much if resting on the chalk or gravel. Less would do if the border rested on heavy impenetrable till. By regulating that matter properly gardeners would be able to avoid the necessity of watering fruit borders out-of-doors. He knew of no fruit that suffered more from inattention in regard to that matter than Apricots. What was the border to be composed of? For wall fruit generally

too much sand, clay, or dead heavy loam was not desirable. Substantial loam was no doubt what was wanted for Apples and Pears; but for Plums, Nectarines, Peaches, and Apricots loam with a little sand in it was best. No doubt under different circumstances different compositions might be adopted with success. Where the soil was a good fresh loam in its natural state trenching was about all that was necessary.

If a place was being newly constructed for the purpose of growing fruit, a first-class border being desired, and the natural soil not being suitable, either from its being too stiff or too sandy, the original soil ought to be taken away, and fresh soil introduced. Nothing would suit better than a nice maiden loam with the turf in it, especially when brought from the banks of a river. It would not be necessary to add any manure, as most likely the wood of the trees would be quite strong enough without it, but a little charcoal added would be advantageous. It would be desirable to give the border a slope to face the sun.—Discussion followed the reading of the paper, and Mr. Fairgrieve received a vote of thanks.

The meeting concluded with a hearty vote of thanks to Mr. Dunn for his conduct in the chair. The exhibits consisted of a new seedling red Currant, named Mrs. Gladstone, from Mr. Peter Robertson, Hartrigge House, Jedburgh. Messrs. Dickson & Co., exhibited a collection of Carnation blooms, and also a bundle of seedling Vines, which are grown from Raisins on the tract of the old Wroughton burn in their nurseries. Mr. P. Martine, Corrielee, Ecklinvale Apple; Mr. A. Laing, Stanhopea oculata grandiflora.

## WHY WOODLANDS DO NOT PAY.

IN these days agriculture is becoming a source of loss instead of gain, and in spite of the best of seasons and abundant crops, the farmer declares it cannot pay. Rents are reduced to a minimum, and even then too frequently are but badly paid. The natural question, then, arises among desponding owners of land, "What are we to do with it? We can neither sell it nor cultivate it, except at a loss, and yet we are compelled to pay ruinous charges upon it of various kinds. Is it to remain idle and barren, and England become a desert?" One answer says "Plant it; trees grow while you sleep." Yes, let those who can afford to do so, plant, and plant freely, but remember you plant for others; you sow and they reap, while you find the capital.

It is my object now, while advocating the idea of planting, to show shortly what are the real difficulties and obstacles which lie in the way of arriving at the period of the first ripe crop of timber. I wish also to avoid entering into any details relating to the planting and general management of the young woodlands which are to be found in many useful works on the subject; and strongly advising the intending planter to secure the services of a skilful, active, and intelligent woodman, and one who obeys orders, I must proceed to say a few words as to the only trees which I consider worth growing in woods, solely for the sake of timber and with a view to the best profit.

These are the Oak and the Ash, both nearly equally valuable as timber, and in case of accidental losses the one will readily replace the other. The Ash also, for the first forty or fifty years, by decennial fellings, produces underwood for hurdle making and other useful purposes, and so will bring in some small returns—better than anything else which could be grown—Hornbeam and other kinds of underwood for burning purposes being now in most places nearly unsaleable. Spanish Chestnut makes good underwood, and is useful as timber, but I prefer the Ash myself. With respect to other trees, most of the Coniferæ, under the general name of deals, are now imported ready sawn up, and are to be bought cheaper than we can grow them. The following trees have occasionally, and locally, very considerable value, and will grow on soils less suitable for Oak; they are also better grown singly in the open, where they are both useful and ornamental: these are the Lime, Sycamore, Alder, Horse Chestnut, Walnut, Spanish Chestnut, and Beech, all of which frequently command high prices, but are not so generally marketable as the Oak and Ash, which are always in high demand, and are not likely to be interfered with by foreign importations. The Larch also is invaluable for home use, although buyers will not give its full worth.

In speaking of decennial fellings, I mean that of necessity, as well as for convenience, whatever may be the amount of land that the planter has determined to turn into woodland, he should divide it into equal portions, one of which is to be planted each year, till the whole is completed, when he will turn back, and begin with felling the Ash on the portion first planted, leaving the Oaks at 12 feet apart, which is the distance at which they should have been planted at first, and at which distance they may be allowed to remain till the first felling for timber takes place, at the age of fifty or sixty years, on the first planted portion, always taking care to replace any failures among the young Oaks by a corresponding number of Ash; this will always keep up the number of young trees reserved for timber to about 300 trees to the acre. I have preferred the decennial period to any other because the Ash of ten years' growth is then quite fit for hurdle-making, or other useful purposes; it also grows quicker than the Oak, so much so that I have often found it desirable to fell it twice in the course of the first ten years, lest it should overgrow the young Oaks, until they have grown high enough to out-top the Ash underwood, which must be left to the planter's discretion.

We have seen by this arrangement, that after the first cutting of the Ash on each of the ten portions of woodland, there should be left for timber 300 Oaks or Ash where the former may have partially failed, and a little further calculation would show that it ought to be quite possible to fell annually thirty trees to the acre, commencing at fifty years' growth, and to last out at that rate for 100 years, by which time the whole crop of timber originally planted on the whole extent of woodland will have been felled, and if proper care and management should have been taken by the various owners through whom the property may have passed, there ought to be another crop of young trees growing up in succession for future generations.

To those who have practically observed the rate of growth of the Oak, whether planted or from the acorn, it will be well known that the early increase is comparatively very slow, but that after the first thirty or forty years the ratio of growth rapidly increases. This is shown curiously by a very fine Oak (Q. pedunculata), which now contains by measurement 99 cubic feet of timber, and which I was made to sow as an infant, in October, 1811. In a similar way, an acorn of Q. sessiliflora was sown by my son in September, 1840, which now only measures 19 cubic feet. Again, an acorn of Q. pedunculata sown by my eldest grandson in October, 1865, girths only 15 inches at 6 feet from the ground. And many Oak plantations which I made about the year 1835 would not yet average 15 cubic feet per tree. These are interesting facts and would almost seem to show that it is just possible for the same individual to sow, or plant Oak trees, and live to see them in perfection, but as a rule every one ought to consider that when he plants it is for the benefit of those who come after him. It will be seen, however, from these data that if a tree fifty years old might possibly measure 15 cubic feet, it might very well attain to 60 or 80 cubic feet at 100 years' growth, and at the final terminus of 150 years from the commencement of the planting, the remaining number of trees on the last felled portion would very possibly average 120 cubic feet per tree. Thus, at a moderate value of 2*s.* 6*d.* per foot, and supposing the original extent of the planted woodland to have consisted of 200 acres, the value of the fall of this last decennial portion of 20 acres would amount to £9000, which would give an average of from £4000 to £5000 per annum for 100 years on the 200 acres of woodland, from which would have to be deducted rent of land, interest on invested capital, and other charges, taking also into consideration the loss sustained during the first 50 years before there was any return.

Here let the curtain drop without daring to venture further into the uncertainties of a distant future. If I have given too favourable a view of the case I have spoken of it more as it might be and could be, but for serious obstacles and unavoidable difficulties which more or less must intervene to prevent it, and of which I now propose briefly to make mention.

It will appear quite evident from the foregoing statements that no one individual, however early in life he may commence planting Oaks for a future crop of timber, should venture to expect any beneficial result for himself during his lifetime; he, therefore, makes the outlay for his successors, and it will depend entirely upon his knowledge, skill, and careful watching for the whole of his life as to whether it will prove a very valuable or a worthless inheritance to those who come after him.

Many and various are the causes and accidents which may irrevocably defeat the successful result of his labours, and one of the most fatal would arise from rabbits, which, if not sufficiently kept under, destroy many a thriving plantation in a hard winter's night, with snow upon the ground. But now we arrive at one of the irremediable obstacles in the way of the tree cultivator, inasmuch as his outlay and labours and the future cropping extend over a period of at least 150 years, during which time several generations may have passed away; and under so many changes it is contrary to the usual course of human events to expect that each successive inheritor or possessor of this woodland property will follow out the plan proposed by the original planter. And yet to obtain the full profit from the timber it is absolutely necessary that it should be so; indeed, it too frequently happens that on its first lapse into new hands necessity, reckless indifference, or fatal ignorance induces the new owner to make serious inroads into the half ripe crop, which, with proper management, should have formed an annual source of income for himself and his heirs; and here, then, would end the history of this woodland farm, and the property would become one of those very common and sadly hopeless spectacles of a treeless extent of bad and profitless underwood.

This frequent change of hands which the shortness of life renders unavoidable, is then the real cause of the ill-success of woodland farming, as change of hands means usually change of management, which is fatal when the work of a good and skilful planter falls into the hands of an ignorant or obstinate successor. Nevertheless, this need not always be so, and in my own case, having benefited greatly by the good deeds of tree-loving predecessors, I have full hopes that the results of the efforts of a long life in the pleasant pursuit of woodcraft will be equally cared for and as long enjoyed by those who come after me. *W. R. Baker, Bayfordbury.*

## The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 2, 1885.

| Month and Day. | Barometer: Mean Reading at 32° Fahr | Barometer: Departure from Average of 32 Years | Temperature of the Air: Highest. | Lowest. | Range. | Mean for Day | Departure of Mean from Average of 99 years. | Dew Point. | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity Sat = 100 | Wind. Average Direction | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug. | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 27 | 29 75 | —0 10 | 63 | 52.0 | 11 | 0 55 | 7 — | 46 | 53 | 8 | 94 | E. | 0.58 |
| 28 | 29 68 | —0 17 | 62 | 50 | 12 | 3 55 | 3 — | 49 | 49 | 0 | 79 | E. N.E. | 0.00 |
| 29 | 29 65 | —0 22 | 67.0 | 48 | 18 | 5 56 | 4 — | 37 | 45 | 7 | 67 | E. N.E. | 0.00 |
| 30 | 29 82 | —0 05 | 62.5 | 49.0 | 16.5 | 55 | 5 — | 45 | 45 | 8 | 76 | N. N.E. | 0 00 |
| 31 | 29 86 | —0 02 | 63 | 54 | 8 | 15.0 | 53 | 7 — | 61 | 49 | 6 | 84 | S.E. E.S.E. | 0 02 |
| Sept. 1 | 29.91 | +0.02 | 65.5 | 46 | 0 | 19.5 | 55.2 | — | 42 | 43 | 6 | 67 | E | 0.00 |
| 2 | 29 71 | —0 18 | 67.5 | 45 | 0 | 22 | 5 55 | 7 — | 36 | 51 | 1 | 87 | E | 0.08 |
| Mean | 29 77 | —0.10 | 64.6 | 48.1 | 16 | 5 55 | 4 — | 45 | 48 | 4 | 79 | Variable | 0 68 |

Aug. 27.—Rain from early morning till 1 P.M., finer afterwards.
— 28.—Dull day, windy throughout.
— 29.—Fine bright day, small amount of cloud, rough wind.
— 30.—Fine day.
— 31.—Rain about 10 A.M.; dull day.
Sept. 1.—Fine day, bright at times.
— 2.—Dull day, rain began to fall at 9 A.M., frequent slight showers afterwards.

LONDON: *Atmospheric Pressure.*—During the week ending August 29, the reading of the barometer at the level of the sea increased from 29.84 inches at the beginning of the week to 30.03 inches by 1 P.M., decreased to 29 99 inches by 5 P.M. on the 24th, increased to 30.05 inches by 9 A.M. on the 25th, decreased to 29 99 inches by 1 P.M. on the 26th, increased to 30 inches by 5 P.M. on the same day, and was 29 81 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.94 inches, being 0.08 inch lower than last week, and 0.08 inch below the average of the week.

*Temperature.*—The highest temperature in the

shade in the week was 72°.5, on the 25th, on the 23d the highest was 62°.5. The mean of the seven high day temperatures was 66°.9.

The lowest temperature was 47°, on the 25th; on the 27th the lowest was 52°. The mean of the seven low night temperatures was 49°.4.

The greatest range of temperature in one day was 25°.5, on the 25th; the smallest on the 27th was 11° The mean of the seven daily ranges was 17°.5.

The mean temperatures were—on the 23d, 54°.7; on the 24th, 58°.7; on the 25th, 59°; on the 26th, 59°.3; on the 27th, 55°.7; on the 28th, 55°.3; and on the 29th, 56°.4; and these were all below their averages by 6°, 1°.9, 1°.5, 1°.1, 4°.6, 4°.9 and 3°.7 respectively

The mean temperature of the week was 57°, being 0°.9 lower than last week, and 3°.4 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 124°.5, on the 29th. The mean of the seven readings was 103°.6.

The lowest reading of a minimum thermometer placed on grass was 38°, on the 23d and 24th. The mean of the seven readings was 40°.1.

*Rain.*—Rain fell on the 27th to the amount of 0.58 inch.

ENGLAND: *Temperature.*—During the week ending August 29, the highest temperatures were 76°.4 at Cambridge, 75° at Truro and Bristol; the highest at Sunderland 62°, at Sheffield and Newcastle 64°. The general mean was 69°.4.

The lowest temperatures were 38° at Hull, 41°.1 at Cambridge, 41°.9 at Wolverhampton; the lowest at Sunderland was 49°, at Blackheath 47°, and at Plymouth and Nottingham 46°.2. The general mean was 44°.4.

The greatest ranges were 35°.3 at Cambride, 30°.2 at Bristol, 30° at Truro; the least ranges were 13° at Sunderland, 19° at Newcastle, 20° at Sheffield. The general mean was 25°.

The mean of the seven high day temperatures was highest at Truro, 69.°9, at Plymouth 69°.2, at Bristol 67°.3; and was lowest at Sunderland, 57°.4, at Newcastle 59°.5, at Hull 60°.3. The general mean was 63.°3.

The mean of the seven low night temperatures was highest at Plymouth, 53°, at Truro 52°.7, at Nottingham and Sunderland 50°.5; and was lowest at Cambridge, 46°, at Wolverhampton 46°.2, at Hull 46° 7. The general mean was 49°.4.

The mean daily range was greatest at Cambridge, 21°.2, at Bristol 18°.7, at Truro 17°.2; and was least at Sunderland, 6°.8, at Newcastle 9°.7, and at Sheffield 10°.1. The general mean was 13°.9.

The mean temperature was highest at Truro, 59°.7, at Plymouth 59°.5, at Blackheath 57°; and was lowest at Hull, 51°.9, at Sunderland, 52°.4, at Bolton, 52°.5. The general mean was 54°.7.

*Rain.*—The largest falls were 1.06 inch at Bristol, 0.96 inch at Plymouth, 0.68 inch at Truro; the smallest falls were 0.01 inch at Newcastle, 0.02 inch at Hull. No rain fell at Leeds or Sunderland. The general mean fall was 0.31 inch.

SCOTLAND: *Temperature.*—During the week ending August 29, the highest temperature was 71° at Edinburgh; at Aberdeen the highest temperature was 60°. The general mean was 65°.9

The lowest temperature in the week was, 38°, at Perth; at Aberdeen the lowest temperature was 44°. The general mean was 41°.6.

The mean temperature was highest at Greenock, 53°.8; and lowest at Leith, 52°.2. The general mean was 53°.1.

*Rain.*—The largest fall was 0.10 inch, at Aberdeen; the smallest fall was 0.01 inch, at Leith. No rain fell at Glasgow, Greenock, Paisley, or Perth. The general mean fall was 0.02 inch.

JAMES GLAISHER, F.R.S.

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SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Aug. 31, 1885, issued by the Meteorological Office, 116, Victoria-street, London, S.W.:—The *weather* has been fine and bright in the north and east of Scotland, but very cloudy or dull in nearly all other parts of the kingdom. Very little rain has fallen, however, except in the extreme south-west of Scotland.

The *temperature* has been below the mean in all districts, the deficit ranging from 1° in "Ireland, S." of the "Channel Islands," and 2° in "England, S.," and "England, S.W." to 5° over central and eastern England and to 6° or 7° in Scotland. The maxima, which were recorded in most places on the 25th, ranged from 59° in "Scotland, E.," and 60° in "Scotland, N.," to 76° in the "Midland Counties," and 78° in "England, S.W." Towards the end of the period the maxima were very low for the season, the thermometer at many stations not rising to 60°. The minima, which were registered on different days in the various districts, were as low as 31° in "England, N.W.," and 32° in "Scotland, N." and "England, S.W.;" in most other districts they varied from 33° to 41°, but 45° was the lowest reading recorded in the south of Ireland, and 51° in the "Channel Islands."

*The rainfall* has been rather more than the mean in "Ireland S." and the "Channel Islands," but less elsewhere.

*Bright Sunshine* has been more prevalent in the south and east of England and in the north and east of Scotland than it was last week, but less in all other districts. The percentage of the possible amount of duration varied from 7 in "Ireland, N." and 8 in "England, N.E.," to 35 in "England, S.," 42 in "Scotland, E.," and 58 in "Scotland, N."

*Depressions observed.* — The distribution of barometric pressure has been rather more complex than of late, the barometer being comparatively high over the United Kingdom, while depressions have been observed over the southern parts of Scandinavia, and also to the south-westward and southward of our islands. The depression which most influenced the winds in our neighbourhood travelled in an easterly and south-easterly direction over France on the 29th, causing violent gales and heavy rains in all parts of that country, and strong north-easterly winds or moderate gales in the south and south-east of England. At the close of the period a small shallow depression was moving over our south-west coasts from the westward.

# Obituary.

MR. PHINEAS BROWN HOVEY, so well known to the horticultural public from his business connection, died recently at his residence on Brookline Street, Cambridge, Massachusetts, at the age of eighty-one years and nine months. He was born in Cambridge, September 3, 1803, and had always resided not only in that city but in the place where he was born. In early life he took a great interest in flowers and flower culture, and in 1834 became senior partner of the seed and nursery firm of Hovey & Co. Mr. Hovey retired from the Boston house in January, 1883, but retained his connection with the nursery and greenhouses on Cambridge Street, Cambridge, at the time of his death. He was a member of the Massachusett's Horticultural Society from the first year of its existence in 1829, under the presidency of General Dearborn. He served as vice-president four years, was chairman of the committee of arrangements for the annual exhibitions for ten years, and a member of the fruit committee for twenty-four years,—a longer term of service, it is believed, than that of any other member. His judgment in all matters pertaining to every department of floriculture and horticulture was considered unimpeachable.

The death of Mr. Hovey closes a long and honourable business career; and the Society with which he was so long and so prominently connected loses an earnest and useful member, and the community where he had resided for nearly eighty-two years a good citizen. He leaves a widow and three children.

# Answers to Correspondents.

AFRICAN MARIGOLDS: *W. Cauldwell.* A very pretty strain of these old favourite flowers, the bar markings on the single flowers being very clear and regular as to width and outline; but the doubles are more pleasing.

APPLE RINAHKOWSKI: *Cranston.* We do not know the Apple under this name. We have, however, fruited several Russian Apples greatly resembling it. Although a pretty enough fruit, we do not consider it of any great value.

ARTICHOKES: *W. Cutbush & Son.* There are several dwarf varieties of Artichokes in existence—notably the Violet de Provence—but we have never noted this to be any particular advantage.

BEGONIA PICTA AND ADIANTUM: *Mairis & Co.* The Adiantum looks quite distinct, and is, we think, very elegant in character. We publish a description of it, by Mr. Moore, at p. 294. There are now so many hybrid, or supposed hybrid Adiantums, that the name *A. hybridum* would not be a desirable one for it to bear. It has therefore been called A. Mairisii. The Begonia is a very pretty and distinct form of those varieties of which *B. Rex* is the best known type.

BOOKS: *J. L.* The book you mention has no special interest now.

CROSS FERTILISATION: *A. D. W.* This can only be said to be effected when the pollen is taken from the flower of one plant and placed on the stigma of a flower of another; for when the pollen is taken from a flower on the same plant it can be only a form of self-fertilisation, and therefore as little likely to produce variation in the progeny as when the pollen of a flower is applied naturally or intentionally to the stigma of the same flower.

DISEASED BULBS: *J. G.* Yes, the Eucharis-mite. Burn the bulbs and get fresh soil. The "larvæ" are, 1, small worms, and, 2, larvæ, of some two-winged fly, which have nothing to do with the mites. The Crotons have been checked by cold probably. The other leaves were rotten when we unpacked them.

ERRATUM.—By error our reporter gave Messrs. Cannell & Son credit for exhibiting Dahlia Mrs. Hawkins at the last meeting of the Royal Horticultural Society, when it should have been Mr. Thomas Ware.

FERNS: *G. F. G.* 1, Scolopendrium vulgare laciniatum; 2, Athyrium Filix-fœmina plumosum; 3, Polypodium vulgare crenatum; 4, Scolopendrium vulgare form of var. marginatum; 5, Athyrium Filix-fœmina depauperatum; 6, Lastrea Filix-mas crispa.

GALL ON OAK: *Dr. P.* The gall in question is the Artichoke gall, always found in the axils of the leaves, and consisting of a number of overlapping scales, surrounding a central gall. It is the working of a cynips (Aphilothrix gemmæ).

GARDENERS' SITUATIONS IN THE CHANNEL ISLANDS: *C. R.* Of course you could not do better than to advertise in our paper, which circulates largely in those parts. Any one possessing a good character, and fair knowledge of gardening, should find but little difficulty in obtaining a post there. We do not suppose the wages given are so high as in some parts of England, but they are not likely to be under those commonly given to young gardeners in the South and West counties.

GRAPES: *A. O.* Mrs. Pearson.

GROS COLMAR GRAPE CRACKING: *J. A. C.* As the other varieties you grow are not affected in the same way, can it be that on your giving water to the borders after a long period during which it had been withheld, the large foliage of this Grape has pumped up the sap from the soil quicker than the skin of the berries could expand to receive it?

INSECTS: *C. F. B.* Your Cyclamens are attacked by the larvæ of one of the Curculionidæ (weevils), differing from those of the Otiorhynchi (which are also often destructive to Cyclamens), in being less curved and much more active, with rows of fine setæ across the back. They have no legs, but have fleshy warts in their stead on the underside of the three segments following the head. We will try to rear those sent. *I. O. W.*—*J. S.* Your Coronilla leaves are infested by aphides, which we suppose are the cause of the minute patches of white matter. The small brown insects are very young larvæ of Dipterous flies, which are feeding on the aphides. Fumigate and well syringe the plants. You do not state from what plants the seeds with very long delicate hairs have been gathered. *I. O. W.*

MELON PLANTS DYING: *Donald M'Clean.* It is a case of the ordinary Melon disease, which has been alluded to frequently in our columns.

NAMES OF FRUITS: *G. J. W.* As the fruits you send are not nearly developed we cannot name them with any degree of certainty. No. 1 is most probably King of the Pippins; 2 may be so also; and 3 most nearly resembles Dumelow's Seedling: we should almost say it is that variety.—*L. G. A.* 1, Louise Bonne of Jersey; 2, Beurré Giffard; 3, Beurré Hardy; 4, Williams' Bon Chrétien; 5, Summer Franc Real; 6, Fondante d'Autômne; 7, Souvenir du Congrès; 8, not recognised: might be a small Catillac.

NAMES OF PLANTS: *Hodgson.* 1, Lysimachia vulgaris; 2, Achillea; 3, A. ptarmica, double-flowered variety; 4, Veratrum nigrum.—*H. K. & Co.* Clethra arborea.—*A. B. C.* 1, Juniperus japonica aureo-variegata; 2, Æschynanthus splendens.—*Rob.* Œnothera macrocarpa.—*X. Y. Z.* 1, Thuia filifera; 2, Gleditschia sp.; 3, Kerria japonica (not a climber); 4, Clematis flammula; 5, Coronilla Emerus.—*C. W.* Skull-cap (Scutellaria galericulata.)—*Reid & Co.* Clethra arborea.—*H. J. P.* 1, Cryptomeria japonica; 2, Juniperus virginiana, probably; 3, Cupressus Lawsoniana; 4, Thuiopsis borealis; 5, Berberis Darwinii.—*W. C. B.* 1, Rhus Cotinus; 2, Solidago virga aurea; 3, Pernettya mucronata; 4, Spiræa callosa; 5, Calycanthus occidentalis; 6, Acer platanoides (Norway Maple); 7, Cotoneaster affinis; 8, Ribes aureum.—*C. W., Beachy Head.* Carum segetum.—*Omega.* 1, Crepis virens; 2, Thuia occidentalis; 3, T. Lawsoniana; 4, T. orientalis; 5, Leontodon hirtus; 6, Juniperus (?). The insect that causes the Bedeguar gall on the Rose is Cynips rosæ.—*Hortus.* 1, Lastrea æmula; 2, L. Filix-mas pumila; 3, Athyrium Filix-fœmina multifidum; 4, Cystopteris fragilis Dickieana; 5, Polystichum

aculeatum ; 6, Athyrium Filix-fœmina Fieldiæ.—*Red Wood.* Vanda Bensoni ; the others were withered when received.—*Toxteth.* Probably Cattleya labiata Warneri.—*Camjee.* Cattleya Eldorado.—*John Edwards.* Cattleya Eldorado Leeana, and Pescatorea Klabochorum.—*G. Wall.* 1, Fuchsia Riccartoni ; 2, a florist's var., name not known to us ; 3, Salvia coccinea.

NEW RUNNER BEAN, NEAL'S NE PLUS ULTRA : *H. Deverill.* A very fine example of the Scarlet Runner Bean, measuring over 12 inches in length.

PRIMULAS : *R. M.* The flowers are pretty, and of good form, but deficient in size.

SUMMER-HOUSES, URINALS, &C., FOR PUBLIC PARK : *N. Rooke.* Consult G. R. Julian. Esq., 8, Delahay Street, Westminster, W.

## CATALOGUES RECEIVED.

R. CLEAVER, Bore Street, Lichfield—Bulbs.
W. BULL, King's Road, Chelsea, London, S.W.—Bulbs and Tuberous-rooted Plants.
T. WARNER, The Abbey, Leicester—Dutch and other Flower Roots.
W. SAMSON & Co., 8 and 10, Portland Street, Kilmarnock—Flower Roots, Forest Trees, &c.
DOBIE & MASON, 66, Deansgate, Manchester—Flower Roots.
E. MORSE, Epsom—Narcissi Bulbs.
H. E. SHARP, Waikomiti Nurseries, Waikomiti, Auckland, New Zealand—Apple Trees.
E. P. DIXON, Hull—Bulbous Roots, &c.
S. SPÄTH, Rixdorf, Berlin—Flower Bulbs, Roses, &c.
R. VEITCH & SONS, Exeter—Dutch Bulbs.
W. SMITH & SON, Aberdeen—Dutch Flower Roots.
FOTHERINGHAM & WALLACE, Dumfries—Dutch Flower Roots.

COMMUNICATIONS RECEIVED.—G. Stanton (with thanks)—E. W. B.—W. B. H.—J. G.—W. R.—E. B.—J. Strasser.—C. W. D.—Messrs. Draper.—R. W. B.—R. Derry.—G. L.—G. F. W. (Vine disease—under examination it is not new to us, but not common).—M. D.—Sir A. W.—G. R. J.—F. W. B.—J. L. M.—F. v. M.—A. R. H. E.—J. E.—W. N.—C. A. M. C.—R. Fitzgerald.—J. D.—R. P.—A. D.—P. G.—T. B.

## Enquiries.

*"He that questioneth much shall learn much."*—BACON.

POISONOUS PROPERTIES OF YEW. — Is it a fact that the fastigiate or upright-growing Yews are less poisonous to cattle than Yews of the ordinary spreading habit?

DIED.—We regret to have to announce the death, on August 28, at Upper Clapton, of FRANCES SARAH, the wife of Mr. F. CASEY, the well-known and able Foreman at Messrs. Hugh Low & Co.'s nurseries at that place.

# Markets.

*COVENT GARDEN, September* 3.

PLUMS, Damsons, and early Pears are now in heavy supply, considerably affecting foreign stuff. Hothouse fruit quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | 3 0 | Peaches, per doz. | 2 0 | 8 0 |
| Figs, per dozen | 0 6 | 1 0 | Pine-apples, Eng. lb. | 2 0 | 3 0 |
| Grapes, per lb. | 0 6 | 2 0 | — St. Michael, each | 2 6 | 5 0 |
| Kent Filberts, 100 lb. | 22 6 | .. | Pears, per dozen | 0 9 | 1 3 |
| Lemons, per case | 15 0 | 30 0 | — per ½-sieve | 1 6 | 3 0 |
| Melons, each | 0 6 | 1 6 | Plums, ½ sieve | 1 6 | 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | .. | 3 0 | Lettuces, English Cos, doz. | .. | 1 6 |
| Aubergines, each | 0 4 | .. | Mint, green, bunch | 0 4 | .. |
| Beans, Eng., per lb. | 0 4 | .. | Mushrooms, basket | 1 0 | 1 6 |
| Beet, per dozen | 1 0 | .. | Onions, per bushel | 5 0 | .. |
| Cabbages, per dozen | 1 6 | 2 0 | — Spring, per bun. | 0 6 | .. |
| Carrots, per bunch | 0 6 | .. | Parsley, per bunch | 0 4 | .. |
| Cauliflowers, English, per dozen | .. | 2 0 | Peas, per quart | 1 0 | 1 6 |
| Celery, per bundle | 1 6 | 2 6 | Radishes, per dozen | 1 0 | 2 0 |
| Cucumbers, each | 0 6 | 1 0 | Small salading, per punnet | .. | 0 4 |
| Endive, per dozen | 2 0 | .. | Spinach, per bushel | 4 0 | .. |
| Garlic, per lb. | 0 6 | .. | Tomatos, per lb. | 0 6 | 0 9 |
| Herbs, per bunch | 0 2 | 0 4 | Turnips, new, bunch | 0 6 | .. |
| Horse Radish, bun. | 3 0 | 4 0 | Vegetable Marrows, each | .. | 0 3 |
| Lettuces, Cab., doz. | 1 6 | .. | | | |

POTATOS.—Magnum Bonums, 70s. to 100s. ; Regents, 70s. to 110s. ; Myatt's, £7 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 18 0 | Ferns, in var., dozen | 4 0 | 18 0 |
| Arbor-vitæ (golden), per dozen | .. | 6 0 | Foliage Plants, various, each | .. | 2 0 |
| — (common), dozen | 6 0 | 12 0 | Fuchsias, per dozen | 2 0 | 6 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen | .. | 15 0 |
| Bouvardia, dozen | 9 0 | 18 0 | — longifolium, doz. | 9 0 | 18 0 |
| Calceolarias, doz. | 4 0 | 6 0 | Marguerite Daisy, per dozen | .. | 8 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Myrtles, per dozen | 6 0 | 12 0 |
| Dracæna terminalis, per dozen | .. | 30 0 | Palms in variety, each | .. | 2 6 |
| — viridis, per doz. | 12 0 | 24 0 | Pelargoniums, per dozen | .. | 6 0 |
| Euonymus, in var., per dozen | .. | 6 0 | — scarlet, dozen | 3 0 | 9 0 |
| Evergreens, in var., per dozen | .. | 6 0 | | | |
| Ficus elastica, each | 1 6 | 7 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Marguerites, 12 bun. | 3 0 | 6 0 |
| Asters, 12 bunches | 2 0 | 6 0 | Mignonette, 12 bun. | 1 6 | 3 0 |
| Bouvardias, per bun. | 0 6 | 1 0 | Pelargoniums, per 12 trusses | .. | 0 6 |
| Carnations, 12 bun. | 2 0 | 4 0 | — scarlet, 12 trusses | 0 4 | 0 6 |
| — 12 blooms | 1 0 | 2 0 | Pinks, var., 12 bun. | 1 0 | 4 0 |
| Eucharis, per dozen | 3 0 | 6 0 | Rhodanthe, 12 bun. | 6 0 | 9 0 |
| Gardenias, 12 blooms | 3 0 | 5 0 | Roses (indoor), doz. | 1 0 | 3 0 |
| Lapageria, white, 12 blooms | .. | 2 0 | Stephanotis, 12 spr. | 3 0 | 4 0 |
| — red, 12 blooms | 1 0 | 2 0 | Sweet Peas, 12 bun. | 2 0 | 4 0 |
| Lavender, 12 bunch. | 4 0 | 6 0 | Tropæolum, 12 bun. | 1 0 | 1 6 |
| Lilium longiflorum, 12 blooms | .. | 2 0 | Tuberoses, 12 blms. | 0 6 | 0 9 |

## SEEDS.

LONDON : *Sept.* 2.—The trade for autumn sowing seeds continues exceedingly active. With regard to Trifolium, supplies have suddenly stopped, and much higher figures are consequently asked ; the tendency continues in favour of holders. Mustard firmly maintains the late rise in values ; there are more buyers than sellers of this article. Rape seed continues at the low figures previously reported. There being an increased demand for Rye has caused rates to harden. Winter Tares sell at last week's currencies ; supplies are now more plentiful. Good large blue boiling Peas are in brisk request ; fine samples continue in narrow compass. Canary unchanged. Hemp slow. Feeding Linseed firmer. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday, although the market opened flatly for English Wheat, a fair business was eventually concluded at, for white, 32*s.* to 36*s.* ; red, 30*s.* to 33*s.* Foreign Wheats were not relatively so cheap as English, and remained as dull and inactive as before. There was not, however, any pressure to sell at lower rates. Flour was very quiet, but the small sales showed previous value. Beans moved oft in retail quantity at steady prices ; Peas, with large supplies, were easier to buy. Flat Maize was scarce and firm at 22*s.* 3*d.* to 22*s.* 6*d.* ; round corn dull at 21*s.* 6*d.* to 21*s.* 9*d.* A small sale of prime new English Barley was made at 39*s.*, but there was not enough doing to establish current value. Grinding sorts were slow. Oats found a very dull dragging sale.—On Wednesday there was little if any change to note in the general condition of the trade, which was still dull. In Wheat there was no quotable change, but the market was also very slack. Flour ruled quiet and unchanged. The small transactions in spring corn did not alter quotations of any description.—Average prices of corn for the week ending August 29 :—Wheat, 33*s.* 3*d.* ; Barley, 28*s.* 4*d.* ; Oats, 20*s.* 6*d.* For the corresponding week last year :—Wheat, 35*s.* 1*d.* ; Barley, 32*s.* 1*d.* ; Oats, 20*s.*

## CATTLE.

At Copenhagen Fields on Monday there was a better market for cattle, and prices in favour of the seller, especially for good second and prime qualities. Beyond this there was no improvement. Sheep and lambs were less numerous than in recent markets, and although the prices were only in occasional instances better the pens cleared rather more readily of English stock. Imported sheep were more difficult to sell. The calf trade was stagnant. Quotations :—Beasts, 4*s.* to 4*s.* 6*d.*, and 4*s.* 8*d.* to 5*s.* 4*d.* ; calves, 3*s.* to 4*s.* 10*d.* ; sheep, 3*s.* 8*d.* to 4*s.* 6*d.*, and 4*s.* 10*d.* to 5*s.* 8*d.* ; lambs, 5*s.* to 5*s.* 8*d.* ; pigs, 3*s.* 8*d.* to 4*s.* 4*d.*—On Thursday a fair inquiry prevailed for beasts, and prices were maintained. Sheep were a dull market, at about Monday's rates. Calves were firm, but quiet for choice qualities. Pigs were steady.

## HAY.

Tuesday's Whitechapel Market report states that trade was dull, with good supplies, especially of new Clover and new hay. Quotations :—Clover, prime, 80*s.* to 110*s.* ; prime second cut, 85*s.* to 105*s.* ; inferior, 60*s.* to 75*s.* ; new, 80*s.* to 95*s.* ; hay, prime, 70*s.* to 95*s.* ; inferior, 36*s.* to 60*s.* ; new, 65*s.* to 84*s.* ; and straw, 28*s.* to 39*s.* per load.—Cumberland Market quotations :—Clover, best, 90*s.* to 100*s.* ; inferior, 60*s.* to 80*s.* ; hay, best, 80*s.* to 92*s.* ; inferior, 50*s.* to 70*s.* ; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The Borough and Spitalfields Markets reports state that supplies are fully adequate to demand, which is dull. Quotations :—Regents, 80*s.* to 90*s.* ; Magnum Bonums, 80*s.* to 90*s.* ; Early Roses, 70*s.* to 80*s.* ; Shaws, 70*s.* to 80*s.* ; kidneys, 100*s.* to 110*s.* ; Hebrons, 100*s.* to 120*s.* per ton.—The imports into London last week consisted of 6066 bags from Boulogne, and 2858 from Hamburg.

## COALS.

The following are the prices current at market during the week :—Bebside West Hartley, 14*s.* 9*d.* ; Ravensworth West Hartley, 14*s.* 9*d.* ; East Wylam, 15*s.* 6*d.* ; Walls End—Tyne (unscreened), 11*s.* 3*d.* ; Heiton, 17*s.* ; Hetton Lyons, 15*s.* ; Lambton, 17*s.* ; Wear, 15*s.* ; East Hartlepool, 15*s.* 9*d.* and 16*s.* ; South Hartlepool, 15*s.* ; Harton, 14*s.* 6*d.* ; Haswell, 17*s.* ; Hulam, 15*s.* ; Tees, 17*s.* ; Dowlais Merthyr, 16*s.* 6*d.*

**Government Stock.**—Consols closed on Monday at 100⅛ to 100⅜ for both delivery and the account. Tuesday's figures were 100⅛ to 100⅜ for delivery, and 100 9/16 to 100 11/16 for the account. Prices closed on Wednesday at 100 to 100⅛ for both transactions. Thursday's transactions closed at 100 to 100⅛ for delivery, and 100 9/16 to 100 11/16 for the account.


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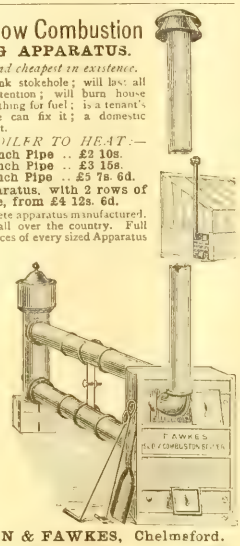
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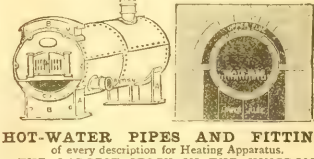
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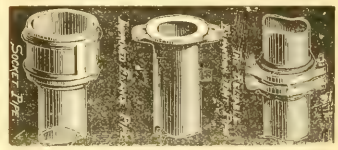
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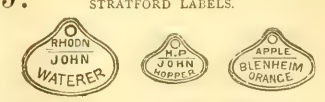

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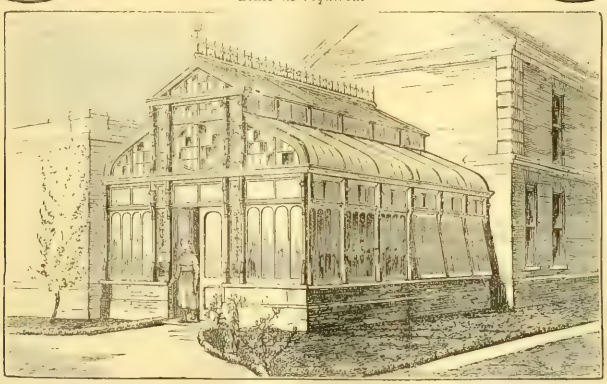
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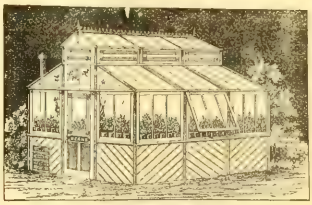


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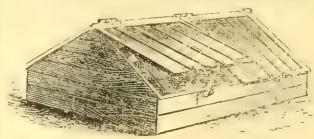
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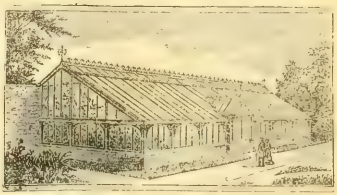
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GARDENER (UNDER), in a private establishment.—Age 22, single; total abstainer. Practical knowledge of Cucumbers, Mushrooms, Pot Strawberries, Pines, Grapes, &c.; no objection to assist with Scythe in busy time, take turn with Fires, &c. Prefers to live in Bothy. Can have good references.—Apply in first instance to the HEAD GARDENER, Gillingham Hall, near Beccles, Norfolk.

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FOREMAN, in the Houses.—Age 24; five years' experience. Well recommended. Leaving to better. Abstainer.—W. SAVAGE, Hamble Cliff Gardens, Netley, Southampton.

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FOREMAN, in a good establishment; age 28.—C. ROBERTS, Gardener to E. C. Glover, Esq., Highfield Hall, Leek, Staffs, wishes to recommend his Foreman, W. Smith, as a thorough good practical man. Fourteen years' experience in good establishments, and three years in present place.

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**To the Trade.**

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ORCHID GROWER, CULTIVATOR, and PROPAGATOR of Stove and Greenhouse Plants in General.—Age 24; native of Germany, but speaks English well.—Messrs. THOMAS CRIPPS AND SON, The Tunbridge Wells Nurseries, Kent, can confidently recommend the above, and will have pleasure in answering any inquiries.

JOURNEYMAN.—Age 22; 9 years' experience. Good characters.—A. BELL, 8, Agar Street, Charing Cross, Strand, W.C.

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JOURNEYMAN, in the Houses; age 25.—Mr. J. ANDERSON, The Gardens, Streatham Grove, Norwood, S.E., can highly recommend a young man as above. Singularly industrious, obliging, and persevering.

JOURNEYMAN, in a good establishment.—Age 21; over two years in present place. Excellent references.—J. BROOKS, The Gardens, Worksop Manor, Worksop, Notts.

IMPROVER, in a Nobleman's or Gentleman's establishment.—Age 20; eighteen months' experience. Premium £5. Good references.—H. BECK, 30, Cornfield Terrace, Eastbourne.

IMPROVER, in a Gentleman's Garden.—Age 20; three years' good character. Bothy preferred.—W. SALISBURY, 23, Stanmore Street, Caledonian Road, London, N.

TO HEAD GARDENERS.—T. LOCKIE, Oakley Court, Windsor, would be pleased to highly recommend a young man (age 24) as FIRST JOURNEYMAN in Houses, or FOREMAN in a moderate sized place. Has been five years under his charge, and is strong, able, and willing; honest, sober, and industrious, with a good general knowledge of his work.

TO GARDENERS, &c.—Wanted, a situation in a Gentleman's Garden, by a young man (age 21) Five years' experience. Good character.—C. R., 16, New Bent Street, Hendon, N.W.

TO NURSERYMEN.—Wanted a situation under Glass. Used to the Work. Market Nursery preferred. Age 19.—P. BOURNER, Cowbeech Hill, Magham Down, Hailsham, Sussex.

TO NOBLEMEN'S and GENTLEMEN'S GARDENERS.—The Rose Foreman here has a son (18 years of age), who has been working with him the last four years, and is now anxious to place him under a thorough practical Gardener. Does not object to pay small Premium and has excellent references.—W. A. GATER, The Royal Nurseries, Slough.

TO NURSERYMEN, GARDENERS, &c.—A respectable young man (age 19) seeks a situation in a good Garden or Nursery where he would improve. Willing, and of good character.—WM. POTTER, Hazelwick, Three Bridges, Sussex.

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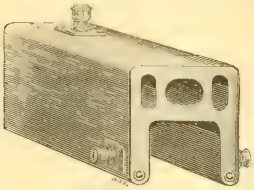
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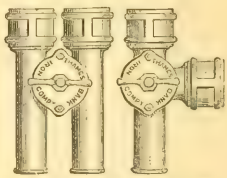
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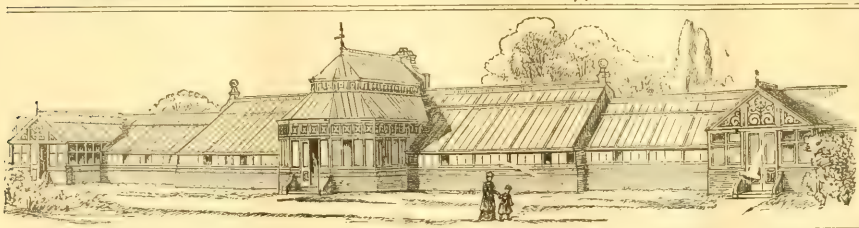
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### Great Horticultural Sale Week.

MESSRS. PROTHEROE AND MORRIS beg to call the attention of the Trade to the following SALES for NEXT WEEK, fuller particulars of which appear in the succeeding advertisements :—

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TUESDAY.—ANNUAL SALE of HEATHS, &c., at the Burnt Ash Nurseries, Lee, by order of Messrs. F. Maller & Sons—1150 lots.

WEDNESDAY.—ANNUAL SALE of HEATHS, &c., at the Lea Bridge Nurseries, Leyton, by order of Mr. John Fraser—1100 lots.

THURSDAY.—ANNUAL SALE of HEATHS, &c., at the Brunswick Nursery, Tottenham, by order of Mr. John Mailer—1200 lots.

,, DUTCH BULBS and 13,000 TUBEROSES, at Messrs. Protheroe & Morris' Rooms.

FRIDAY.—SPECIAL TRADE SALE of ORCHIDS, at Messrs. Protheroe & Morris' Rooms.

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N.B. The Sale on THURSDAY NEXT will include 1000 GOLD FISH.

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GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock in consequence of the large number of lots.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, adjoining Lee Railway Station, on TUESDAY, September 15, at 11 o'Clock punctually, without reserve, 20,000 WINTER BLOOMING HEATHS, beautifully grown and well set with bloom-buds, including 15,000 Erica hyemalis, 3000 gracilis, 1000 Caffra, and large quantities of ventricosa and other varieties; large numbers of gracilis autumnalis in 60-pots for growing on; 7000 well-berried SOLANUMS, 1000 CYCLAMEN PERSICUM, 1000 GREVILLEA ROBUSTA, 2000 ADIANTUM CUNEATUM, 2000 LOMARIA GIBBA, and other choice decorative Ferns in 48-pots; 2000 GENISTAS, 6000 BOUVARDIAS, including the new double Sang-Lorrain and V. Lemoine, also Alfred Neuner and President Garfield; 1000 decorative PALMS, 1000 EPACRIS, double white PRIMULAS, Maréchal Niel and other TEA ROSES, extra strong STEPHANOTIS, HOYAS, English-grown CAMELLIAS and AZALEAS, 3000 CLEMATIS FLAMMULA, one year transplanted, and other stock.

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N.B.—Messrs. P. & M. desire to call the attention of intending Purchasers to the Stock to be offered as above. The Plants are remarkably well grown, fit for immediate sale, and the whole will be found in an equally good condition as in former years.

### Lea Bridge Road Nurseries, Leyton, E.

GREAT ANNUAL UNRESERVED TRADE SALE of WINTER FLOWERING HEATHS and other PLANTS, by order of Mr. John Fraser.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION on the Premises, the Lea Bridge Road Nurseries, Leyton, E., close to Hoe Street Railway Station, on WEDNESDAY, September 16, at 11 o'Clock precisely (in consequence of there being upwards of 1100 lots), without reserve, many thousands of winter blooming and other HEATHS remarkably well grown, including hyemalis, gracilis, caffra, hybrida, candidissima, persoluta alba, ventricosas, and others; 2000 EPACRIS of the choicest kinds, 2000 AZALEA INDICA, 4000 CYCLAMEN PERSICUM, 2000 GENISTA FRAGRANS, 400 Double White PRIMULAS in 40 and 48-pots, 500 BOUVARDIAS, best sorts; Tea-scented and Noisette ROSES, SOLANUM CAPSICASTRUM in berry, several hundreds of well grown CAMELLIAS well set with bloom, CLEMATIS INDIVISA LOBATA, and other GREENHOUSE CLIMBERS; 1500 early flowering CHRYSANTHEMUMS, 300 Maréchal Niel and other ROSES, from 7 to 10 feet; a large quantity of AMPELOPSIS VEITCHII, a variety of GREENHOUSE PLANTS, fine healthy young plants of LAPAGERIA ALBA and ROSEA SUPERBA, a beautiful lot of about 300 ARAUCARIA EXCELSA, 3000 CLEMATIS JACKMANNI, and other fine varieties; a splendid lot of variegated IVIES, 400 large variety White JASMINE, a quantity of other hardy climbers, 400 HOLLYHOCKS, fine named sorts, and other Stock.

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13,000 TUBEROSES.—TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS will include in their SALE of DUTCH BULBS, on THURSDAY NEXT, Ten Cases of fine Bulbs of Double African TUBEROSES, just received, in Lots of One Case each, containing 13,000 roots.

On view morning of Sale, and Catalogues had.

### Tottenham, N.

GREAT ANNUAL TRADE SALE of WINTER-FLOWERING HEATHS, STOVE and GREENHOUSE PLANTS, &c., to commence punctually at 11 o'Clock, there being upwards of 1200 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Mailer to SELL by AUCTION, on the Premises, the Brunswick Nursery, Tottenham, N., close to White Hart Lane Station, Great Eastern Railway, on THURSDAY, September 17, at 12 o'Clock punctually, without reserve, 20,000 Winter-blooming HEATHS, beautifully grown, and abundantly set with flower-buds, including hyemalis, gracilis, caffra, Wilmorea, assurgens, and other best kinds; 1000 EPACRIS, in best varieties; 5000 remarkably well-berried SOLANUM CAPSICASTRUM, 5000 well-grown FERNS, including Adiantums and Gymnogrammas; 500 FICUS ELASTICA, 4000 TREE CARNATIONS, best varieties; 5000 BOUVARDIAS, including the new double scarlets, Sang-Lorrain, Triomphe de Nancy, and Victor Lemoine; 1000 EUPHORBIA JACQUINIFLORA, large plants of CAMELLIAS and AZALEAS for cutting from, 4000 GENISTAS, 2000 Double White PRIMULAS, including Gilbert's new varieties; many thousands of small ERICAS, GENISTAS, FERNS, &c., for growing on; large quantities of AZALEAS, budded CAMELLIAS, GARDENIAS, BEGONIAS, ACACIAS, PALMS, PASSIFLORAS CERULEA and CONSTANCE ELIOTT, the new white; and a variety of other remarkably well-grown STOVE and GREENHOUSE PLANTS. AMPELOPSIS VEITCHII, CLEMATIS, EUONYMUS OVATUS AURUS in pots, and many thousands in store; and SHRUBS for potting, suitable for the Trade and other extensive Buyers.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the Stock is in first-rate condition, the ERICAS being especially well set for flower.

### Sidcup, Kent, S.E.

GREAT ANNUAL TRADE SALE of WINTER FLOWERING HEATHS, and other Plants, forming one of the largest collections ever offered to the Public. The stock of Heaths is unrivalled, the plants being particularly well grown and beautifully set with flowers, and well worthy of an inspection by intending purchasers.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longlands Nursery, Sidcup, ten minutes' walk from Pope Street Station (S.E.R.), on FRIDAY, September 18, at 11 o'Clock precisely (there being nearly 1100 Lots), an immense quantity of unusually well-grown WINTER BLOOMING HEATHS, and OTHER PLANTS, including :—

| | | | |
|---|---|---|---|
| 20,000 | Erica hyemalis, well set. | 10,000 | Cytissus racemosa, in 48-pots. |
| 10,000 | ,, gracilis. | 5,000 | Adiantum cuneatum, in 48-pots. |
| 5,000 | ,, mesanthera. | 5,000 | Solanums, in 48 pots. |
| 5,000 | ,, Cavendishi. | 5,000 | Bouvardias of sorts, in 48-pots. |
| 5,000 | ,, magnifica. | 3,000 | Cyclamen, in 48-pots. |
| 10,000 | ,, coccinea minor. | 2,000 | Grevillea robusta, in 48-pots. |
| All in flowering pots. | | 50,000 | Heaths of sorts, in 60-pots, for growing on. |
| 1,000 | Tree Carnations, in 48-pots. | | |
| 1,000 | Double Primulas, in 48-pots. | | |
| 300 | Camellias, well budded. | | |

The stock is now on view. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Friday Next.—Trade Sale of Orchids.

CATTLEYA DOWIANA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 18, at half-past 12 o'Clock precisely, a very fine lot of IMPORTED ORCHIDS, selected with a view of meeting the requirements of the Trade. The Sale will comprise a splendid importation of Cattleya Dowiana, in exceptionally fine condition, and including one of the largest masses ever imported, Epidendrum Schomburgki, Eriodium, Odontoglossum planifolium, Lælia purpurata, &c.

On view morning of Sale, and Catalogue had.

### Sidcup.

ABSOLUTE SALE, by order of Miss Sim, who is giving up the Nursery.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Sidcup Hill Nursery, Sidcup, on MONDAY, September 21, at 12 o'Clock, without reserve, 50,000 of Hardy and Exotic FERNS, in variety, for which this Nursery has been so celebrated; 5000 Standard and Dwarf BAYS, 3000 LAURELS, 1000 FRUIT TREES, hundreds of HOLLIES, AUCUBAS, and ORNAMENTAL TREES and SHRUBS; 7000 HERBACEOUS PLANTS, four GREENHOUSES, HOT-WATER PIPING, BOILERS, &c.

Now on view. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The NURSERY TO BE LET.

### Hendon, N.W.

TRADE CLEARANCE SALE of STOVE and GREENHOUSE PLANTS, grown specially for the London Cut Flower Trade, by order of Mr. J. H. Pounce, without reserve, the land being required for building purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., ten minutes' walk from the Station, on WEDNESDAY, September 23, at 12 o'Clock precisely, the whole of the well-grown STOVE and GREENHOUSE PLANTS—50,000 Carnations, including Gloire de Nancy, Prince of Orange, Dr. Abercrombie, Alegatiere, and other choice sorts; large Eucharis amazonica, large Azaleas, principally white; Tea and other Pot Roses, early and late Chrysanthemums, Imantophyllums, Pancratium fragrans, Myrtles, Hardy Climbers, and quantities of other Stock, lotted to suit the Trade and private Buyers. Also one GREENHOUSE, and HOT-WATER PIPING.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The OUTDOOR NURSERY STOCK will be SOLD on THURSDAY, November 29.

### Acton, W.

GREAT TRADE SALE of FERNS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Reeves, to SELL by AUCTION on the Premises, The Nursery, Uxbridge Road, Acton, W., five minutes' walk from the station, North London Railway, on THURSDAY, September 24, at 12 o'Clock precisely, 10,000 FERNS, in pots and store boxes, including Adiantums, Lomarias, Pteris cretica, and cretica alba lineata, Aspleniums, &c.; 2000 CORYPHA AUSTRALIS, 1000 ASPARAGUS PLUMOSUS, 1000 AZALEAS, well set with buds; PELARGONIUMS, 5000 Old Crimson CLOVE CARNATIONS, 5000 Green EUONYMUS, 5000 AUCUBAS, 1 to 3 feet; Green and Variegated HOLLIES, and a quantity of other SHRUBS.

May now be viewed. Catalogues may now be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

### Preliminary Notice of Forthcoming Sales of Nursery STOCK.

Important to Noblemen, Gentlemen, Nurserymen, Landscape Gardeners, Builders, and others proposing to Plant during the coming season.

MESSRS. PROTHEROE AND MORRIS beg to give notice of their Forthcoming Sales as at present arranged :—

OCTOBER 13, at the NURSERY, CLAPTON, by order of Messrs. Offord & Sons, the Lease having expired.

OCTOBER 14 and 15, at the NURSERY, FELTHAM HILL ROAD, SUNBURY, by order of Mr. Dawson.

OCTOBER 19 and four following days, at the NURSERY, CANTERBURY, by order of Messrs. Kinmont & Kidd, the Lease having expired.

OCTOBER 20, at the JOYNINGS' NURSERY, WALTHAM CROSS, by order of Mr. W. Rumsey.

OCTOBER 27 and 28, at the NURSERY, PUTNEY, by order of Messrs. Mahood & Son, the Lease having expired.

OCTOBER 29, at PRINCE'S NURSERY, HENDON, the Land being required for Building.

NOVEMBER 3, at the HALE FARM NURSERY, TOTTENHAM, by order of Mr. T. S. Ware.

NOVEMBER 4, at OSBORN'S NURSERY, HAMPTON, by order of Mr. W. Taylor.

Other Sales are being arranged, and when the dates are finally settled they will be duly announced.

Messrs. P. & M. will be pleased to forward Catalogues on application.

### Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to give notice that their next SALE of the above will take place on TUESDAY, September 29, for which they will be glad to RECEIVE ENTRIES in due course.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### Thursday Next.—(Sale No. 6970.)

IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 17, at half-past 12 o'Clock precisely, about 200 lots of good Imported ORCHIDS, in fine condition, from Messrs. Shuttleworth, Carder & Co.

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No. 6971.)

ORCHIDS IN FLOWER, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 17, at half-past 1 o'clock precisely, a fine COLLECTION of ORCHIDS in flower, comprising Aërides Rohaneana, Phalænopsis Sanderiana, Odontoglossum vexillarium rubellum, Dendrobium Brymerianum, D. Williamsoni, Cattleya superba splendens, C. Dowiana, &c., also about seventy lots of good ESTABLISHED ORCHIDS from a private collection, including over fifty fine plants of Odontoglossum Alexandræ in splendid health, fine pieces of O. Lindleyanum, Cattleya Trianæ, &c.

On view morning of Sale, and Catalogues had.

### St. Martin's, Chichester.

TO GRAPE GROWERS, FRUITERERS, CAPITALISTS, AND OTHERS.

Sale of a FREEHOLD GARDEN, known as The Graperies.

MESSRS. WYATT AND SON will SELL by AUCTION, on THURSDAY, September 17, at The Dolphin Hotel, Chichester, at 3 o'Clock precisely, by direction of Mr. Isaiah Baker, who is retiring from business, a very valuable and productive FREEHOLD GARDEN, known as THE GRAPERIES, ST. MARTIN'S, CHICHESTER, with eight Glasshouses thereon in capital condition, heated with flues and hot-water pipes, having a total length of 518 feet, and an area of 9646 feet of glass. Four of the largest houses are well stocked with the choicest Vines for market produce and in full bearing; the other four are used as Strawberry and Tomato houses. The garden is planted with Plum, Pear, and Mulberry trees, and is stocked with fruit buds. There is also a plentiful supply of water from a pump in the garden, three large water tanks, and a Tool and Fowl-house thereon. The above garden is situated in the centre of the city of Chichester, with a carriage entrance from Little London. It has been for many years in the possession of Mr. Isaiah Baker, who has done a lucrative trade with the London market and trade customers at Southsea, the Isle of Wight, Salisbury, and other places.

Possession will be given at Christmas next, with the exception of the vineries where the Grapes are not then cut, with right of access thereto. One half of the purchase money may remain on mortgage at 4½ per cent.

The garden may be viewed on application to Mr. ISAIAH BAKER, The Graperies, St. Martin's, Chichester; and particulars, with conditions of sale, obtained of Messrs. RAPER AND FREELAND, Solicitors, West Street, Chichester; and of Messrs. WYATT AND SON, Estate Agents, Valuers, and Auctioneers, East Street, Chichester, and Auction Mart, Havant.

**Upton Nurseries, Stratford, E.**

STOVE and GREENHOUSE PLANTS, including Ficus elastica, Eucharis amazonica, Palms, Aspidistras, Cyperus alternifolius, 700 Geraniums in flower (including Madame Thibaut and other well-known varieties), Coleus, double white Primula, Begonias, Chrysanthemums, &c., 1000 Maidenhair Ferns, also a fine stock of Tea Roses, Carnations, Myrtles, Camellias, 500 Tuberoses, &c.

MR. CURTIS will SELL the above by AUCTION, on the Premises, in suitable lots, on SATURDAY AFTERNOON, September 19.

Catalogues can be obtained at the place of Sale, and of the Auctioneer, the Broadway, Plaistow, E.

**Highfield Nurseries, Matlock, Derbyshire.**

To Noblemen, Gentlemen, Nurserymen, and Others.
HIGHLY IMPORTANT AND ATTRACTIVE SALE OF NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. J. J. Marriott, who is giving up a portion of his ground, to SELL by AUCTION, without reserve, on MONDAY, TUESDAY, and WEDNESDAY, September 28, 29, and 30, the whole of the very Superior Stock of the above-named ground, all in the best possible condition for removal, including large quantities of ROTUNDIFOLIA, CAUCASICUM, LATIFOLIA, COLCHIC, and other LAURELS; extra strong ovali-leaved PRIVET; a choice collection of Variegated and Green HOLLIES; CUPRESSUS, RETINOSPORAS, ARAUCARIAS, and ARBOR-VITÆS; choice named RHODODENDRONS Tree PÆONIES, 12,000 Transplanted Seedling RHODODENDRONS from the finest named sorts, and 30,000 from hybrids; 3000 ROSES on their own roots, in choicest variety; a very select collection of Herbaceous PÆONIES in strong flowering plants; 40,000 transplanted LARCH, clean, stout, and well-rooted; extra good PINUS AUSTRIACA, &c.

Particulars of which are given in Catalogues, to be had one week prior to the Sale, from Mr. MARRIOTT, Lime Villa, Walsall, or the Auctioneers, Matlock Bridge

Messrs. ELSE & SON desire to call special attention to this Sale, the stock to be offered being of unusually good quality, particularly worthy of the notice of THE TRADE as well as PRIVATE BUYERS, there being nothing old or over-grown, or spoiled by over-crowding.

**London, W.**

TO FLORISTS and GARDENERS.—Commanding position, in one of the principal main thoroughfares. Capital FLORIST'S BUSINESS—Show House, 3 Greenhouses, several Pits, Dwelling-house, and Stable. Lease 52 years at a low rent. Price £600. Stock optional. Excellent opportunity.
Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C. (Folio 6242.)

**Important Notice to Florists, Nurserymen, and OTHERS.**

TO be SOLD, by Private Treaty, a very Valuable Enclosure of LAND, containing about 5 Acres, well adapted for the above purposes, also Poultry Farm, Public Institution, or Building Purposes. It has a frontage to a high road, rich gravel subsoil, only a short distance from Hampton and Fulwell Railway Stations, S.W.R., and in order to effect an immediate sale will be sold a bargain.
Apply to Mr. J. EMBLETON, Suffolk House, New Hampton.

**To Nurserymen.**

TO BE SOLD, the Old-established NURSERY BUSINESS of Mr. William Hounslow, of Ringwood, which was established in 1800, and has been successfully carried on by the family to the present time, old age being the sole reason for retiring from the same. The Nurseries are admirably adapted for growing Seedlings of all descriptions, and contain about 7 acres. The stock consists of Forest Trees, Conifers, Flowering Shrubs, and American Plants, to be taken at valuation. The Nurseries are within 100 yards of the Railway Station, thus offering a rare opportunity for an enterprising man, as the business can be greatly increased.
For further particulars, and to view, apply to F. AVLES, Auctioneer, Ringwood.
N.B. In case the Business should not be disposed of, the ANNUAL SALE will take place EARLY IN NOVEMBER, of which due notice will be given.

**To Nurserymen and Beginners**

FOR SALE, a SMALL NURSERY, situate in Tottenham—held for 3 years on agreement, at a rent of £6 per annum—comprising 3 Houses, 30 feet long by 11 feet wide; 1 House, 15 feet long by 9 feet wide—a row of 4-feet Pit in front of one House. Stabling, Shed, and good Stock. Price £40 Reason of selling, death. Apply to
Mr. SOUTH, The Pottery, Angel Road, Edmonton.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.
Full particulars furnished upon application, personally or by letter, to GEO. J. THEOBALD AND CO., 419, California Street, San Francisco, California.

TO SELL or LET (arising through death), a Small NURSERY and SEED BUSINESS, with immediate possession, if required. Direct communication with London by Great Eastern Railway. Distance 80 miles. Ten Acres of LAND can also be had suitable for Seed Growing or Market Garden purposes. Apply to
J. K., Messrs. Hurst & Son, 152, Houndsditch, London, E.

TO LET, with 13 years' unexpired Lease, a SMALL FLORIST and JOBBING BUSINESS, in an increasing neighbourhood. To any one with a small capital this is a first-class opportunity.
Apply, G. ROUSE, Florist, &c., The Green, Twickenham.

TO BE LET, on Lease, a Small NURSERY, about 1 Acre; 6 Greenhouses, Seed-shop, and Dwelling House. Well situated. In a large Market Town, 12 miles from London. Goodwill, stock, and fixtures, £250.
Apply in first instance, HORTUS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

NURSERY, with Three Houses over 100 feet long each, well built, comfortable, double fronted COTTAGE. Lease nineteen years. Rent £20. Acre of Ground. 8 miles from London. Parties with £350 apply.
C. H. COWLES, Woodford Green, Essex.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared.
115, Listria Park, Stamford Hill, N.

**The Grand New Narcissus.**

"SIR WATKIN."
2s. each, 21s. per dozen, 160s. per 100.
The largest and finest known. First-class Certificate Royal Horticultural Society.
Descriptive CATALOGUE post-free. Plant at once.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

The Queen's Seedsmen. Specially Appointed.

F. & A. DICKSON & SONS,
106, EASTGATE STREET, CHESTER.
DICKSON'S Superb Strains of PRIMULA, CALCEOLARIA, CYCLAMEN, and other FLORIST'S FLOWERS, are pronounced to be unsurpassed if equalled. They represent the most advanced and perfect types of the day.
VEGETABLE and FLOWER SEEDS for Autumn Sowing. All of the very best types of their respective kinds.
DICKSON'S Improved MUSHROOM SPAWN is THE best procurable. See numberless Testimonials from famous growers.
DICKSON'S Extra Strong Medicated TOBACCO PAPER is the most effectual and always reliable.
CATALOGUES Gratis and Post-free.
Free Delivery by Post or Rail.

F. & A. DICKSON & SONS,
THE QUEEN'S SEEDSMEN, CHESTER.

RASPBERRY,
*BAUMFORTH'S SEEDLING*
TRANSPLANTED CANES.

EDMUND PHILIP DIXON
Is now booking orders for above for delivery as soon as ready.
Planting Canes .. .. 17s. 6d. per 100
Fruiting Canes .. .. 25s. ,, ,,
*Price to the Trade on application.*

THE YORKSHIRE SEED ESTABLISHMENT, HULL

BULBS FOR EARLY FORCING.

B. S. WILLIAMS'
*WELL RIPENED and HEAVY BULBS*

| | Per 100—s. | d. |
|---|---|---|
| ROMAN HYACINTHS ... ... | 15 | 0 |
| From 5 to 5¾ inches in circumference. | | |
| PAPER-WHITE NARCISSUS ... | 10 | 0 |
| From 5 to 6 inches in circumference. | | |
| DOUBLE ROMAN NARCISSUS | 10 | 6 |
| From 5 to 6½ inches in circumference. | | |

*EARLY ORDERS SOLICITED.*

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

BULB GUIDES.

These most interesting and instructive Catalogues are Now Ready, and may be had gratuitously upon application.

**Part 1** consists of HYACINTHS, TULIPS, CROCUS, and a LIST of MISCELLANEOUS BULBS.

**Part 2** consists exclusively of LILIES and NARCISSUS, and includes every variety worthy of cultivation, all of which are fully described.

THOMAS S. WARE,
Hale Farm Nurseries,
TOTTENHAM, LONDON.

FERNS A SPECIALTY.
THE LARGEST STOCK IN THE TRADE.
ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1s.
SMALLER CATALOGUE, of over 1250 species and varieties, free on application.
Special Descriptive "LIST OF NEW, RARE, AND CHOICE FERNS," free.
Descriptive "LIST OF HARDY NORTH AMERICAN FERNS," free.

W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.

BULBS
200,000 DIRECT FROM HOLLAND.
Very Cheap LIST, with interesting Pamphlet on Growing Bulbs, free on application. HYACINTHS, from 7s. 6d. per 100; TULIPS, from 2s. per 100; CROCUS, from 1s. per 100; NARCISSUS, from 2s. per 100. Liberal Discount to Large Buyers.
ROBERT SYDENHAM, Bristol Road, Birmingham.

DUTCH BULBS AND POT ROSES.

PAUL & SON,
THE "OLD" NURSERIES, CHESHUNT,
HAVE NOW READY THEIR
Large Importations of HYACINTHS, TULIPS, NARCISSUS, &c.,
selected from the leading growers in France and Holland.
POT ROSES FOR FORCING,
READY TO SELECT FROM.
*CATALOGUES and LISTS Post-free.*

AUTUMN and WINTER-FLOWERING and DECORATIVE PLANTS

HUGH LOW & CO.
Invite inspection, by purchasers, of the immense and well-grown Stock growing in their Nurseries at
CLAPTON and BUSH HILL, ENFIELD,
COMPRISING
ACACIAS, AZALEAS, BOUVARDIAS, CAMELLIAS, CARNATION (TREE), CLEMATIS, CYCLAMEN, DRACÆNAS, ERICAS, EPACRIS, FICUS, FERNS, GENISTAS, GARDENIAS, GREVILEA ROBUSTA, JASMINUM, LAURUSTINUM, LATANIA BORBONICA, PALMS in variety, SOLANUMS, &c.

Fruit Trees and Roses in large quantities of splendid quality.

*The Glass Structures cover an area of 246,000 superficial feet.*

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*For Prices and Cultural Instructions, see the New Edition of*

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WORDSLEY, STOURBRIDGE

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A VERY EXTENSIVE & VERY SUPERIOR STOCK

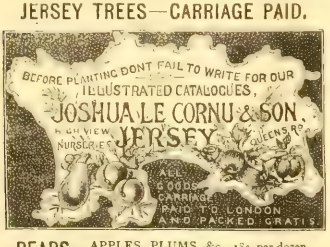
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JERSEY TREES—CARRIAGE PAID.




PEARS—APPLES, PLUMS, &c., 18s. per dozen.
Espalier trained, 24s. per dozen.
ROSES—Magnificent Bushes, 3s. per dozen.
Standards, strong, 15s. per dozen.
Cash Orders most liberally treated.

# BULBS.

## B. S. WILLIAMS

Has much pleasure in announcing that he has this year been entrusted with the whole of the Order for **BULBS** required by the **METROPOLITAN BOARD of WORKS**, for the various Parks, &c., under their jurisdiction in the Metropolis—**his Tender in Open Competition being accepted.**

Orders for DUTCH and FRENCH FLOWERING ROOTS of all kinds are now being executed.

*The quality of the Bulbs is excellent this year, they being unusually large and well ripened.*

**Early Orders Solicited.**

*ILLUSTRATED BULB CATALOGUE*
is now ready, and will be forwarded post free to all applicants.

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

# DUTCH BULBS.

*DIRECT FROM THE GROWERS.*

## ANT. ROOZEN & SON'S

CHOICE FLOWER ROOTS.

## OUR GUINEA PACKAGES

Of CHOICE HARDY FLOWER-ROOTS for Indoor and Spring Gardening have been much enlarged, and contain as under:

**COLLECTION "P," FOR SPRING GARDENING, Containing 900 Bulbs.**

36 Hyacinths, distinct colours.
50 Tulips, single early.
25 Tulips, double.
25 Tulips, single late.
20 Narcissus, Polyanthus.
10 Narcissus, incomparabilis.
24 Narcissus, Poeticus.
50 Anemones, double.
400 Crocus, in 4 distinct colours
50 Ranunculus, double.
36 Gladiolus.
50 Snowdrops, single.
25 Spanish Iris.
25 Triteleia uniflora.
25 Scilla hyacinthoides.
4 Lilium umbellatum.

**COLLECTION "C," FOR INDOOR. Containing 277 Choice Bulbs for Pots and Glasses.**

Hyacinths, 18 in 18 splendid named varieties.
3 Roman Hyacinths.
Tulips, single early—
12 in 4 fine named varieties.
6 Duc van Thol, red & yellow
6 ,, ,, scarlet.
Tulips, double early—
6 La Candeur, pure white.
6 Rex Rubrorum, fine crimson.
6 Tournesol.
Crocus—
100 in 10 fine namrd varieties.
Narcissus, Polyanthus.
12 in 4 finest named varieties.
Narcissus, double and single—
12 in 4 named varieties.
Jonquils—
6 double, sweet-scented.
6 single, ,, ,,
12 Scilla sibirica (præcox).
12 Choice Ixias.
12 ,, Sparaxis.
12 ,, Oxalis.
12 Grape Hyacinths (H. botryoides).
6 Eranthis Hyemalis.
6 Snowdrops.
6 Iris Pavonia.

HALF OF EITHER OF THE ABOVE FOR 10s. 6d.

The above Packages may be had from our Agents, Messrs. MERTENS AND CO., 31, Cross Lane, St. Mary-at-Hill, London, E.C., on receipt of Cheque or Post-office Order.

For particulars of our other Collections of Bulbs for INDOOR and SPRING GARDENING, see our complete and revised CATALOGUE for 1885, which will be sent, post-free, on application to our Agents, or ourselves direct.

ANT. ROOZEN AND SON, Nurserymen,
Overveen, near Haarlem, Holland.

## CHOICE IMPORTED DUTCH BULBS.

**JARMAN'S No. 6 COLLECTION** contains 1000 selected and assorted Bulbs, for Indoor and Out-of-door combined. Price 21s. cash. Package and Carriage Free. Others at 6s. 6d. to £4 4s.

**ROSES**, 9s. per dozen. A big stock and fine Plants.

*Send for large Descriptive LIST of Bulbs, Roses, Plants, Seeds, &c., to*

## E. J. JARMAN,

The People's Seedsman,
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# BEAUTIFUL FLOWERS

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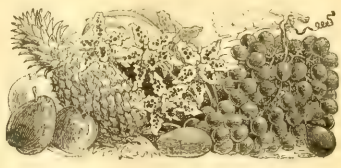


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THE

# Gardeners' Chronicle.

*SATURDAY, SEPTEMBER* 12, 1885.

## MR. FENN AT HOME.

AWAY at Sulhampstead, and perched on the hillside overlooking the pretty valley through which the Kennet flows from Newbury way towards Reading and the Thames, Mr. Robert Fenn reigns over a wider domain than was known to his former visitors within the walls of the old Woodstock Rectory. There, very often mistaken for the Rector himself by strangers, now almost a Rector in reality—for being one of the three or four freeholders of his parish, and one of the most active and useful of its inhabitants, he has assumed the responsible duties of overseer, highway surveyor, and even of churchwarden; so that the energy which rendered him so famous in certain spheres of garden life has also lifted him into a niche in that Temple of Fame wherein the services of energetic and conscientious officials of the body parochial are duly recorded.

But these same energies are not all exhausted in the occupation of parochial offices, for there seems no limit to the agricultural or horticultural enterprises into which Mr. Fenn embarks—so far, at least, as the area of his small farm and its resources will permit. Agriculturally the visitor is charmed with the plethoric horses which draw the wains, plough the soil, and otherwise assist to convert Mother Earth into a gold mine, if not a too productive one. There are some handsome Alderney cows, free of milk and butter, of which not a whit too much is found to satisfy the cravings of consumers. Pigs galore—and splendid pigs, too—almost enough to make 'overs of rashers long for a slice from the living hog. Mr. Fenn is a great believer in the efficacy of Potatos to create pig meat, and certainly the fine litter of porkers in their ample run speaks volumes for the belief, for are they not well cultured on Solanum tuberosum? Every pig is killed at home, and being coverted into good wholesome Berkshire bacon, is almost entirely sold in small quantities to the neighbours, such is the love for this comestible which pervades the hard-working fraternity of that rural locality. Certainly, if there be merit in good pigs, Mr. Fenn is to be congratulated, not only on the excellence of his breed, but also on the capital appearance the stock presents. Fowls, too, run about the farmyard and grass orchard, and give their eggs daily in considerable abundance, forming for the housewife a constant source of income. These poultry are of a cross-bred strain, half Dorking, half Brahma, and turn out for table juicy fleshy bodies of perfect whiteness, as a well cooked sample showed. A few ducks luxuriate in a meadow pond, but these are created from eggs in the spring for autumn killing only, and are not permanent part of the live stock.

Mr. Fenn has resuscitated his bee stocks, for as a bee-master he had a reputation when some now classed as experts were in their long-clothes. One of these, doubtless, useful personages called upon the old Woodstock bee-master not so long since, and began to expa-

tiate upon proper apiarian methods. The greybeard quickly produced from his literary store some numbers of the *Cottage Gardener* of nearly forty years since, and showing how ancient was his knowledge of the subject, put the expert to flight. Now the old hives of his own and others' design, once so useful in the old Woodstock garden, where we have often gazed out upon the Blenheim domain, have been refurbished and brought into renewed activity. A dozen or so, some as big as washing-tubs, are full of fine stocks, three of which are producing honey, and in that direction adding sweetness to the life of the toiler in a double sense, for some will be converted into current coin. Out in the meadows may be seen a noble haystack, chiefly of Clover, for the cattle have needed the pasturage, and this stack presents no mean or valueless item in the year's production. The Clover leys have given two good swaths, and now only need moisture to enable them to throw up a rich supply of herbage for the autumn production of milk.

On the arable land out on the brow of the hill—for the lay of the 13 acres within the farm boundaries is varied, and considerably undulated—may be seen growing a piece of Mangel of some rich golden and exceedingly handsome strain, to which Messrs. Sutton & Sons are looking to give them seed next year. We have seen Potatos so handsome as to be mistaken for wax models. Wurzels seem to be becoming æsthetic, for these growing at Sulhampstead are as smooth as mahogany, and as handsome as can be; then there is a big piece of ripening Broad Windsor Beans for seed; also an extensive breadth of the Canadian Wonder Bean, between the rows of which may be seen peeping up lines of white Turnips, to follow in quick succession, dwarf Peas, and specially (Mr. Fenn affirms by his excellent namesake) Robert Fenn. Marrows are being harvested, whilst a big breadth of Potatos of many kinds, and chiefly of the Woodstock seed, are being gradually got up, for the drought has ripened these off early. There are large quantities of Alderman De Keyser; a fine white kidney; Antagonist, and others, old and new; specially taking is a white kidney named Faith, which got very high mention at Chiswick the other day. With the faith which becomes a prophet, and he courage of an old soldier in literary, and especially in Potato, warfare, Mr. Fenn contends, first, that whilst many of the beautiful kinds he has raised have been put aside for larger or bigger cropping kinds, yet not a monarch in the world—not a nobleman or gentleman in the kingdom, with all the wealth and fine gardens at their disposal—ever dines off better Potatos than he does; or perhaps, as a rule, half so good. Sulhampstead soil produces fine quality usually in Potatos, but always the finest quality in the first-class eating kinds which Mr. Fenn has from time to time put into the market or the seed trade. Rector of Woodstock, Woodstock Kidney, Early Regent, Lady Truscott, Prizetaker, Reading Russet, Early Market, Ringleader—these are but a few of this raiser's productions, and stocks of all which are duly preserved, so that samples in great variety may be partaken of from day to day, and thus maintain a perfect feast of Potatos all the year round. After all Mr. Fenn is quite content to rest his reputation as a raiser of Potatos upon what he has given to the world, and whilst it is possible for others to produce bigger sorts none can excel in the production of such excellent quality. Though almost determined to leave the field to younger men, yet the old fire has been potent enough to create in him an interest in some of the species, and a successful cross, it is anticipated, has been made with Solanum maglia and the white kidney Antagonist, for there are pendent a couple of fine berries, which will probably prove the progenitors of something interesting. S. maglia, as grown under glass in a small tub, is some 4 feet in height, with stems and foliage like to those of any ordinary Potato, and it rather sets afloat doubts as to whether it is not, after all, one of the chief progenitors of our present race of Potatos. Very diverse is the other species, Solanum Fendleri, which is dwarf, small-leaved, fairly stiff and erect, and apparently a long way removed from the garden Potato. Mr. Fenn has succeeded in crossing this with Reading Russet Potato and a couple of small speckled berries have been produced, but it will need very much faith in this species to believe that anything good can result.

To utilise garden fruits to his fancy, after the needful stock of preserve has been made, fallen Apples are being brewed into cider, Pears into perry, and bush fruit made into wine. Very interesting still are the representative bottles of the old Woodstock brews which Mr. Fenn exhibited in London, Manchester, Birmingham, and elsewhere years ago, and which obtained medals and honourable mention. A bottle of Rhubarb wine made forty-two years ago is pronounced by competent judges to be equal to the best Madeira; whilst of other samples are Esperione, Muscadine, and Muscat of Alexandria Grapes wine some thirty to twenty years of age, with Gooseberry wine, honey-beer, and other home-made liquids of high-class quality.

## THE BRITISH ASSOCIATION.

SIR LYON PLAYFAIR'S address at Aberdeen is so full of instruction and suggestion for all concerned in progress, mental or material, that we greatly regret our inability to print it in full, the more so as the maimed abstracts in most of the daily papers give a very inadequate idea of the scope and practical wisdom of the address. Dr. Playfair's aim is to emphasise the importance of scientific training if Britain is to hold its own in the great race—pre-eminent it can scarcely be now in the old sense. The following are a few extracts from this remarkable address:—

### ENLARGED SCIENTIFIC TRAINING.

Passing from learned or public professions to commerce, how is it that in our great commercial centres, foreigners—German, Swiss, Dutch, and even Greeks—push aside our English youth and take the places of profit which belong to them by national inheritance? How is it that in our colonies, like those in South Africa, German enterprise is pushing aside English incapacity? How is it that we find whole branches of manufactures, when they depend on scientific knowledge, passing away from this country, in which they originated, in order to engraft themselves abroad, although their decaying roots remain at home? The answer to these questions is that our systems of education are still too narrow for the increasing struggle of life. Faraday, who had no narrow views in regard to education, deplored the future of our youth in the competition of the world, because, as he said with sadness, "our schoolboys, when they came out of school, are ignorant of their ignorance at the end of all that education." The opponents of science education allege that it is not adapted for mental development, because scientific facts are often disjointed and exercise only the memory. Those who argue thus do not know what science is. No doubt an ignorant or half-informed teacher may present science as an accumulation of unconnected facts. At all times and in all subjects there are teachers without æsthetical or philosophical capacity—men who can only see carbonate of lime in a statue by Phidias or Praxiteles; men who can look at trees without getting a conception of a forest, and cannot distinguish a stately edifice from its bricks. It is, however, true that as science teaching has had less lengthened experience than that of literature, its methods of instruction are not so matured. Scientific and literary teaching have different methods; for while the teacher of literature rests on authority and on books for his guidance, the teacher of science discards authority and depends on facts at first hand, and on the book of Nature for their interpretation. Natural science more and more resolves itself into the teaching of the laboratory. In this way it can be used as a powerful means of quickening observation, and of creating a faculty of induction. In England manufacturers cry out for technical education, in which classical culture shall be excluded. In the schools of the middle classes science rather than technics is needed, because when the seeds of science are sown, technics as its fruit will appear at the appointed time. Epictetus was wise when he told us to observe that though sheep eat grass, it is not grass but wool that grows on their backs. Should, however, our grammar schools persist in their refusal to adapt themselves to the needs of a scientific age, England must follow the example of other European nations, and found new modern schools in competition with them. For, as Huxley has put it, we cannot continue in this age of "full modern artillery to turn out our boys to do battle in it, equipped only with the sword and shield of an ancient gladiator." In a scientific and keenly competitive age an exclusive education in the dead languages is a perplexing anomaly. The flowers of literature should be cultivated and gathered, though it is not wise to send men into our fields of industry to gather the harvest when they have been taught only to cull the Poppies and to push aside the Wheat.

### STATE ENDOWMENT OF UNIVERSITIES.

The State has always felt bound to alter and improve universities, even when their endowments are so large as to render it unnecessary to support them by public funds. When universities are poor, Parliament gives aid to them from Imperial taxation. In this country that aid has been given with a very sparing hand. Thus the universities and colleges of Ireland have received about £30,000 annually, and the same sum has been granted to the four universities of Scotland. Compared with Imperial aid to foreign universities such sums are small. A single German university, like Strasburg and Leipsic, receives above £40,000 annually, or £10,000 more than the whole colleges or Ireland or of Scotland. Strasburg, for instance, has had her university and its library rebuilt at a cost of £711,000, and recives an annual subscription of £43,000. In rebuilding the University of Strasburg eight laboratories have been provided, so as to equip it fully with the modern requirements for teaching and research. The cost of these laboratories has been as follows:—Chemical Institute, £35,000; Physical Institute, £28,000; Botanical Institute, £26,000; Observatory, £25,000; Anatomy, £42,000; Clinical Surgery, £26,000; Physiological Chemistry, £16,000, Physiological Institute, £13,000. Prussia, the most economical nation in the world, spends £391,000 yearly out of taxation on her universities The recent action of France is still more remarkable. After the Franco-German war the Institute of France discussed the important question—"Pourquoi la France n'a pas trouvé d'hommes supérieurs au moment du péril?" The general answer was because France had allowed university education to sink to a low ebb. Before the great revolution France had twenty-three autonomous universities in the provinces. Napoleon desired to found one great university at Paris, and he crushed out the others with the hand of a despot, and remodelled the last with the instincts of a drill-sergeant. The central university sank so low that in 1868 it is said that only £8000 were spent for true academic purposes. Startled by the intellectual sterility shown in the war, France has made gigantic efforts to retrieve her position, and has rebuilt the provincial colleges at a cost of £3,280,000, while her annual budget for their support now reaches half a million of pounds. In order to open these provincial colleges to the best talent of France, more than 500 scholarships have been founded at an annual cost of £30,000. France now recognises that it is not by the number of men under arms that she can compete with her great neighbour, Germany, so she has determined to equal her in intellect. Other European nations are advancing on the same lines. Switzerland is a remarkable illustration of how a country can compensate itself for its natural disadvantages by a scientific education of its people. Switzerland contains neither coal nor the ordinary raw materials of industry, and is separated from other countries which might supply them by mountain barriers. Yet, by a singularly good system of graded schools, and by the great technical college of Zurich, she has become a prosperous manufacturing country. In Great Britain we have nothing comparable to this technical college, either in magnitude or efficiency. Belgium is reorganising its universities, and the State has freed the localites from the charge of buildings, and will in future equip the universities with efficient teaching resources out of public taxation. Holland, with a population of 4,000,000 and a small revenue of £9,000,000, spends £136,000 on her four universities. Contrast this liberality of foreign countries in the promotion of higher instruction with the action of our own country. Scotland, like Holland, has four universities, and is not very different from it in population, but it only receives £30,000 from the state. The wealthy universities of Oxford and Cambridge are gradually constructing laboratories for science. The merchant princes of Manchester have equipped their new Victoria University with similar laboratories.

Edinburgh and Glasgow Universities have also done , partly at the cost of Government and largely by private subscriptions. The poorer universities of Aberdeen and St. Andrews are still inefficiently provided with the modern appliances for teaching science. London has one small Government college and two chartered colleges, but is wholly destitute of a teaching university. It would excite great astonishment at the Treasury if we were to make the modest request that at the great metropolis, with a population of ,000,000, should be put into as efficient academical position as the town of Strasburg, with 104,000 inhabitants, by receiving as that town does, £43,000 annually for academic instruction, and £700,000 for university buildings. Still, the amazing anomaly that London has no teaching university must before long cease. It is a comforting fact that, in spite of the indifference of Parliament, the large towns of the kingdom are showing their sense of the need of higher education. All these are healthy signs that the public are determined to have advanced science teaching, but the resources of the institutions are altogether inadequate to the end in view. Even in the few cases where the laboratories are efficient for teaching purposes, they are inefficient as laboratories for research. Under these circumstances the Royal Commission on Science advocates special Government laboratories for research. Such laboratories, supported by public money, are as legitimate subjects for expenditure as galleries for pictures or sculpture. Nevertheless our wealth is proportionately much greater than that of foreign States which are competing with so much vigour in the promotion of higher education. They deem such expenditure to be true economy, and do not allow their huge standing armies to be an apology for keeping their people backward in the match of knowledge. Preparations for war will not insure to us the blessings and security of an enlightened peace. Protective expenditure may be wise, though productive expenditure is wiser.

Universities are not mere storehouses of knowledge; they are also conservatories for its cultivation. Professors in a university have a higher function, because they ought to make new honey as well as to store it. The widening of the bounds of knowledge, literary or scientific, is the crowning glory of university life. Germany unites the functions of teaching and research in the universities, while France keeps them in separate institutions. The former system is best adapted to our habits, but its condition for success is that our science chairs should be greatly increased, so that teachers should not be entirely absorbed in the duties of instruction. Germany subdivides the sciences into various chairs, and gives to the professors special laboratories. It also makes it a condition for the higher honours of a university that the candidate shall give proofs of their ability to make original researches. Our universities are still far from the attainment of a proper combination of their resources between teaching and research. Even Oxford and Cambridge, which have done so much in recent years in equipment of laboratories and in adding to the scientific staff, are still far behind a second-class German university. There are too few autonomous universities in England in proportion to its population. While Scotland, with a population of 3¾ millions, has four universities with 6500 students, England, with 26 millions of people, has only the same number of teaching universities with 6,000 students. Unless English colleges have such ambition, they may be turned into mere mills to grind out material for examinations and competitions. Higher colleges should always hold before their students that knowledge, for its own sake is the only object worthy of reverence. Beyond college life there is a land of research flowing with milk and honey for those who know how to cultivate it.

### The Application of Scientific Facts.

Though the accumulation of facts is indispensable to the growth of science, a thousand facts are of less value to human progress than is a single one when it is scientifically comprehended, for it then becomes generalised in all similar cases. Isolated facts may be viewed as the dust of science. The dust which floats in the atmosphere is to the common observer mere incoherent matter in a wrong place, while to the man of science it is all-important when the rays of heat and light act upon its floating particles. It is by them that clouds and rains are influenced; it is by their selective influence on the solar waves that the blue of the heavens and the beauteous colours of the sky glorify all Nature. So, also, ascertained through isolated facts, forming the dust of science, become the reflecting media of the light of knowledge, and cause all Nature to assume a new aspect. It is with the light of knowledge that we are enabled to question Nature through direct experiment. The hypothesis or theory which induces us to put the experimental question may be right or wrong; still, *prudens quæstio dimidium scientiæ est*—it is half-way to knowledge when you know what you have to inquire. Davy described hypothesis as the mere scaffolding of science, useful to build up true knowledge, but capable of being put up or taken down at pleasure. Undoubtedly a theory is only temporary, and the reason is, as Bacon has said, that the man of science "loveth truth more than his theory." The changing theories which the world despises are leaves of the tree of science, drawing nutriment to the parent stems, and enabling it to put forth new branches and to produce fruit; and though the leaves fall and decay, the very products of decay nourish the roots of the tree and reappear in the new leaves or theories which succeed. When the questioning of Nature by intelligent experiment has raised a system of science, then those men who desire to apply it to industrial inventions proceed by the same methods to make rapid progress in the arts. They also must have means to compel Nature to reveal her secrets.

In illustration of how slowly at first and how rapidly afterwards science and its applications arise, I will take only two out of thousands of examples which lie ready to my hand. One of the most familiar instances is air, for that surely should have been soon understood if man's unaided senses are sufficient for knowledge. Air has been under the notice of mankind ever since the first man drew his first breath. It meets him at every turn; it fans him with gentle breezes, and it buffets him with storms. And yet it is certain that this familiar object—air—is very imperfectly understood up to the present time. We now know by recent researches that air can be liquified by pressure and cold; but as a child still looks upon air as nothing, so did man in his early state. A vessel filled with air was deemed to be empty. But man, as soon as he began to speculate, felt the importance of air, and deemed it to be a soul of the world upon which the respiration of man and the god-like quality of fire depended. Yet a really intelligent conception of these two essential conditions to man's existence—respiration and combustion—was not formed till about a century ago (1775). There was no intelligent conception as to the composition of air until Priestley in 1774 repeated with the light of science, an empirical observation which Eck de Salbach had made 300 years before upon the union of mercury with an ingredient of air and the decomposition of this compound by heat. This experiment now proved that the active element in air is oxygen. From that date our knowledge, derived from an intelligent questioning of air by direct experiments, has gone on by leaps and bounds. The air, which mainly consists of nitrogen and oxygen, is now known to contain carbonic acid, ammonia, nitric acid, ozone, besides hosts of living organisms which have a vast influence for good or evil in the economy of the world. These micro-organisms, the latest contributions to our knowledge of air, perform great analytical functions in organic nature, and are the means of converting much of its potential energy into actual energy. Through their action on dead matter the mutual dependence of plants and animals is secured, so that the air becomes at once the grave of organic death and the cradle of organic life. The consequences of the progressive discoveries have added largely to our knowledge of life, and have given a marvellous development to the industrial arts. Combustion and respiration govern a wide range of processes. The economical use of fuel, the growth of plants, the food of animals, the processes of husbandry, the maintenance of public health, the origin and cure of disease, the production of alcoholic drinks, the processes of making vinegar and saltpetre all these and many other kinds of knowledge have been brought under the dominion of law. No doubt animals respired, fuel burned, plants grew, sugar fermented, before we knew how they depended upon air. But, as the knowledge was empirical, it could not be intelligently directed. Now all these processes are ranged in order under a wise economy of Nature, and can be directed to the utilities of life; for it is true, as Swedenborg says, that human "ends always ascend as Nature descends." There is scarcely a large industry in the world which has not received a mighty impulse by the better knowledge of air acquired within a hundred years. If I had time I could show still more strikingly the industrial advantages which have followed from Cavendish's discovery of the composition of water. I wish that I could have done this, because it was Addison who foolishly said, and Paley who as unwisely approved the remark, "that mankind required to know no more about water than the temperature at which it froze and boiled, and the mode of making steam." When we examine the order of progress in the arts, even before they are illumined by science, their improvements seem to be the resultants of these conditions:—1. The substitution of natural forces for brute animal power, as when Hercules used the waters of the Alpheus to cleanse the Augean stables; or when Kamchadel of Eastern Asia, who has been three years hollowing out a canoe, finds that he can do it in a few hours by fire. 2. The economy of time, as when a calendering machine produces the same gloss to miles of calico that an Arican savage gives to a few inches by rubbing it with the shell of a snail; or the economy of production, as when steel pens, sold when first introduced at one shilling apiece, are now sold at a penny per dozen; or when steel rails, lately costing £45 per ton, can now be sold at £5. 3. Methods of utilising waste products, or of endowing them with properties which render them of increased value to industry, as when waste scrap iron and the galls on the oak are converted into ink; or the badly-smelling waste of gasworks is transformed into fragrant essences, brilliant dyes, and fertilising manure; or when the effete matter of animals or old bones is changed into lucifer-matches. All three results are often combined when a single end is obtained—at all events, economy of time and production invariably follows when natural forces substitute brute animal force. In industrial progress the sweat of the brow is lessened by the conceptions of the brain. Slaves are mere machines, and machines neither invent nor discover. The bondmen of the Jews, the helots of Sparta, the captive slaves of Rome, the serfs of Europe, and uneducated labourers of the present day, who are the slaves of ignorance, have added nothing to human progress. But as natural forces substitute and become cheaper than slave labour, liberty follows, advancing civilisation. Machines require educated superintendence. One shoe factory in Boston by its machines does the work of 30,000 shoemakers in Paris, who have still to go through the weary drudgery of mechanical labour. The steam power of the world, during the last twenty years, has risen from 11½ million to 29 million horse-power, or 152 per cent. Let me take a single example of how even a petty manufacture improved by the teachings of science affects the comforts and enlarges the resources of mankind. When I was a boy the only way of obtaining a light was by the tinder-box, with its quadruple materials, flint and steel, burnt rags or tinder, and a sulphur match. If everything went well, if the box could be found and the air was dry, a light could be obtained in two minutes; but very often the time occupied was much longer, and the process became a great trial to the serenity of temper. The consequence of this was that a fire or a burning lamp was kept alight through the day. Old Gerard, in his *Herbal*, tells us how certain fungi were used to carry fire from one part of the country to the other. The tinder-box long held its position as a great discovery in the arts. Time had to elapse before chemical analysis showed the kind of bodies which could be added to phosphorus so as to make it ignite readily. So it was not till 1833 that matches became a partial success. Intolerably bad they were then, dangerously inflammable, horribly poisonous to the makers, and injurious to the lungs of the consumers. It required another discovery by Schrötter in 1845 to change poisonous waxy into innocuous red-brick phosphorous in order that these defects might be remedied, and to give us the safety-match of the present day. Now what have these successive discoveries in science done for the nation, in this single manufacture, by an economy of time? If before 1833 we had made the same demands for light that we do now, when we daily consume eight matches per head of the population, the tinder-box could have supplied the demand under the most favourable conditions by an expenditure of one quarter of an hour. The lucifer match supplies a light in fifteen seconds on each occasion, or in two minutes for the whole day. Putting these differences into a year, the venerable ancient who still sticks to his tinder-box would require to spend ninety hours yearly in the production of light, while the user of lucifer matches spends twelve hours; so that the latter has an economy of seventy-eight hours yearly, or about ten working days. Measured by cost of production at 1*s.* 6*d.* daily, the economy of time represented in money to our population is £26,000,000 annually. This is a curious instance of the manner in which science leads to economy of time and wealth even in a small manufacture. In larger industries the economy of time and labour produced by the application of scientific discoveries is beyond all measurement. Thus the discovery of latent heat by Black led to the inventions of Watt, while that of the mechanical equivalent of heat by Joule has been the basis of the progressive improvements in the steam engine which enables power to be obtained by a consumption of fuel less than one-fourth the amount used twenty years ago. It may be that the engines of Watt and Stephenson will yield in their turn to more economical motors; still they have already expanded the wealth, resources, and even the territories of England more than all the battles fought by her soldiers or all the treaties negotiated by her diplomatists. The coal which has hitherto been the chief source of power probably represents the product of five or six million years during which the sun shone upon the plants of the carboniferous period, and stored up its energy in this convenient form. But we are using this conserved force wastefully and prodigally; for, although horse-power in steam engines has so largely increased since 1864, two men only now produce what three men did at that date. It is only 300 years since we became a manufacturing country.

### RESULTS DUE TO NEGLECT OF SCIENCE.

According to Professor Dewar, in less than 200 years more the coal of this country will be wholly exhausted, and in half that time will be difficult to procure. Our not very distant descendants will have to face the problem—What will be the condition of England without coal? The answer to that question depends upon the intellectual development of the national that time. Few would ask now, as was constantly done a few years ago, "What is the use of an abstract discovery in science?" Faraday once answered this question by another, "What is the use of a baby?" Yet round that baby centre all the hopes and sentiments of its parents, and even the interests of the State, which interferes with its upbringing so as to insure it being a capable citizen. The processes of mind which produce a discovery or an invention are rarely associated in the same person, for while the discoverer seeks to explain causes and the relation of phenomena, the inventor aims at producing new effects, or at least of obtaining them in a novel and efficient way. In this the inventor may, sometimes succeed without much knowledge of science, though his labours are infinitely more productive when he understands the causes of the effects which he desires to produce. A nation in its industrial progress, when the competition of the world is keen, cannot stand still. Three conditions only are possible for it. It may go forward, retrograde, or perish. Its extinction as a great nation follows its neglect of higher education, for, as described in the Proverbs of Solomon, "They that hate instruction love death." In sociology, as in biology, there are three states—the first of balance, when things grow neither better nor worse; the second, that of elaboration or evolution, as we see it when animals adapt themselves to their environments; and third, that of degeneration, when they rapidly lose the ground they have made. For a nation a state of balance is only possible in the early stage of its existence, but it is impossible when its environments are constantly changing. The possession of the raw materials of industry and the existence of a surplus population are important factors for the growth of manufactures in the early history of a nation, but afterwards they are bound up with another factor—the application of intellect to their development.

### RESULTS DUE TO SCIENCE.

Science has in the last hundred years altered altogether the old conditions of industrial competition. She has taught the rigid metals to convey and record our thoughts even to the most distant lands, and, within these limits, to reproduce our speech. This marvellous application of electricity has diminished the cares and responsibilities of Governments, while it has at the same time altered the whole practice of commerce. To England steam and electricity have been of incalculable advantage. The ocean, which once made the country insular and isolated, is now the very lifeblood of England, and of the greater England beyond the seas. As in the human body the blood bathes all its parts, and through its travelling corpuscles carries force to all its members, so in the body politic of Englade and its pelagic extensions, steam has become the circulatoty and electricity the nervous system. The colonies, being young countries, value their raw materials as their chief sources of wealth. When they become older they will discover it is not in these, but in the culture of scientific intellect, that their future prosperity depends. Older nations recognise this as the law of progress more than we do; or, as Jules Simon tersely puts it—"That nation which most educates her people will become the greatest nation, if not to-day, certainly to-morrow." Higher education is the condition of higher prosperity, and the nation which neglects to develope the intellectual factor of production must degenerate, for it cannot stand still. The true cultivators of the tree of science must seek their own reward by seeing it flourish, and let others devote their attention to the possible practical advantages which may result from their labours. There is, however, one intimate connection between science and industry which I hope will be more intimate as scientific education becomes more prevalent in our schools and universities. Abstract science depends on the support of men of leisure, either themselves possessing or having provided for them the means of living without entering into the pursuits of active industry. The pursuit of science requires a superfluity of wealth in a community beyond the needs of ordinary life. Such superfluity is also necessary for Art, though a picture or a statue is a saleable commodity, while an abstract discovery in science has no immediate or, as regards the discoverer, proximate commercial value. My argument is that no amount of learniug without science suffices in the present state of the world to put us in a position which will enable England to keep ahead or even on a level with foreign nations as regards knowledge and its applications to the utilities of life. Take the example of any man of learning, and see how soon the direct consequences resulting from it disappear in the life of a nation, while the discoveries of a man of science remain productive amid all the shocks of empire. As I am in Aberdeen I remember that the learned Dutchman Erasmus was introduced to England by the encouragement which he received from Hector Boece, the Principal of King's College in this University. Yet even in the case of Erasmus—who taught Greek at Cambridge, and did so much for the revival of classical literature, as well as in the promotion of spiritual freedom—how little has civilisation to ascribe to him in comparison with the discoveries of two other other Cambridge men—Newton and Cavendish. The discoveries of Newton will influence the destinies of mankind to the end of the world. When he established the laws by which the motions of the great masses of matter in the universe are governed, he conferred an incalculpable benefit upon the intellectual development of the human race.

Newton's discovery cast men's minds into an entirely new mould, and levelled many barriers to human progress. This intellectual result was vastly more important than the practical advantages of the discovery. It is true that navigation and commerce mightily benefited by our better knowledge of the motions of the heavenly bodies. Still, these benefits to humanity are incomparably less in the history of progress than the expansion of the human intellect which followed the withdrawal of the cramps that confined it. Truth was now able to discard authority, and marched forward without hindrance. Before this point was reached Bruno had been burned, Galileo had abjured, and both Copernicus and Descartes had kept back their writings for fear of offending the Church. The recent acceptance of evolution in biology has had a like effect in producing a far profounder intellectual change in human thought than any mere impulse of industrial development. Already its application to sociology and education is recognized, but that it is of less import to human progress than the broadening of our views of Nature. Abstract discovery in science is then the true foundation upon which the superstructure of modern civilisation is built; and the man who would take part in it should study science, and, if he can, advance it for its own sake, and not for its applications. Ignorance may walk in the path lighted by advancing knowledge, but she is unable to follow when science passes her, for, like the foolish virgin, she has no oil in her lamp. An established truth in science is like the constitution of an atom in matter—something so fixed in the order of things that it has become independent of further dangers in the struggle for existence. The sum of such truths forms the intellectual treasure which descends to each generation in hereditary succession. Though the discoverer of a new truth is a benefactor to humanity, he can give little to futurity in comparison with the wealth of knowledge which he inherited from the past. We, in our generation, should appreciate and use our great possessions—

"For me your tributary stores combine,
Creation's heir; the world, the world is mine."

## KÆMPFERIA ORNATA.

THIS is a Bornean introduction of the Compagnie Continentale of Ghent, and figured at t. 537 of the *Illustration Horticole*. The plant has long-stalked, lanceolate leaves, bright green above, with a central band of white. The lower surface is wine-purple, and the margin somewhat undulate. It is a handsome stove foliage plant, the general habit of which is shown in our illustration (fig. 60), which we owe to the courtesy of the Compagnie Continentale.

## SEED RAISING.

### VITALITY OF SEEDS.

With very few exceptions all seeds retain their germinating power for at least a year under ordinary conditions; and, when placed in circumstances specially favourable, they remain fresh for a very lengthened period. Several remarkable instances of this have already been mentioned, but cases even more remarkable than these are recorded. In the ground, when buried deeply, the length of time seeds will retain life is indefinite—according to some authorities, even unlimited. The accounts of seeds which had been taken from ancient Egyptian tombs germinating on being placed under favourable conditions, and other similar cases of an astonishing nature, might be mentioned. These are, however, of little or no practical moment, beyond showing us how wonderfully tenacious of life is the tiny germ which lies enclosed in its often thin and delicate wrappers. How long a seed will remain good when placed under the conditions supplied in the seed-house, or when sown and treated for germination, is a question to which we may turn for more useful information. A seed, when properly matured and kept dry in an even and suitable temperature, will remain healthy for a more or less lengthened period, according to whether it is oily or starchy, or whether it belongs to the exalbuminous or the albuminous kinds. Oily seeds usually perish in a comparatively short time, so that it becomes necessary to sow them as soon as possible after they are ripe; such seeds are those of Tea, Coffee, Camellia, Theobroma, Acorns, Brazil-nuts, Walnuts, &c. Seeds of a starchy nature are generally much longer-lived. It is, however, impossible to draw a hard-and-fast line between long-lived and short-lived seeds, as there are so many conditions other than those we perceive, and often altogether beyond our control, which affect the vitality of seeds. Lindley says:—"Seeds are probably possessed of different powers of life, some preserving their vital principle through centuries of time, while others have but an ephemeral existence under any circumstances. The reasons for this difference are unknown to us." In the case of many of our most popular and long-cultivated plants, however, we have data sufficient to enable us to perceive how long their seeds may be expected to remain capable of germinating. The following list was prepared by the well-known seed merchants, Vilmorin-Andrieux & Co., of Paris, and with it is incorporated a portion of a list printed in Burbridge's *Propagation and Improvement of Plants*:—

AVERAGE DURATION OF THE VEGETATIVE POWER OF THE SEEDS OF SOME CULTIVATED PLANTS.

| | Years. | | Years. |
|---|---|---|---|
| Acacia | 20 to 30 | Fennel | 4 |
| Aster | 4 | Lettuce | 3 |
| Amaranth | 5 | Mangel | 5 |
| Angelica | 1 | Mallow | 5 |
| Anise | 3 | Marigold | 2 |
| Artichoke | 2 | Melon | 8 |
| Aster, China | 1 | Mustard | 5 |
| Asparagus | 4 | Nasturtium | 5 |
| Balsam | 10 to 15 | Onion | 2 |
| Basil | 7 | Parsley | 3 |
| Beans, Broad | 4 | Parsnip | 2 |
| Beans, Kidney | 5 | Peas | 3 |
| Beetroot | 5 | Petunia | 4 |
| Borage | 5 | Purslane | 6 |
| Burnet | 2 | Radish | 5 |
| Cabbage | 5 | Rampion | 4 |
| Capsicum | 4 | Rhubarb | 3 |
| Carrot | 3 | Rocket | 2 |
| Celery | 7 | Rosemary | 4 |
| Chervil | 3 | Salsify | 3 |
| Chives | 2 | Savory | 2 |
| Coleus | 1 | Scorzonera | 2 |
| Cornflower | 3 | Sea-kale | 3 |
| Corn Salad | 5 | Sorrel | 2 |
| Cress | 5 | Spinach | 5 |
| Cucumber | 6 | Strawberry | 8 |
| Egg Plant | 7 | Thyme | 4 |
| Endive | 5 | Tomato | 4 |
| Leek | 3 | Turnip | 5 |

The above table does not profess to give in every case the longest time possible for the seeds to remain good, but only the average time during which, under the conditions supplied in an ordinary seed-room, they might be expected to retain their power to vegetate. Cabbage seeds have been known to germinate after being kept for ten years, and Kidney Beans after five years. As above stated, the conditions which affect the duration of life in seeds are too often beyond control, or altogether hidden from us.

It has been already pointed out that under certain conditions some seeds will remain dormant in the ground for a long time without losing their vitality; in like manner seeds will sometimes lie for years without commencing to grow, even when the conditions under which they are placed are what we consider favourable to germination. Lindley mentions various instances of this, all tending to show how necessary it is to have patience in the management of seeds, and more especially when the age of the seeds is unknown. Old seeds always germinate more slowly than young ones; the hardening of the testa or seed-coats through long exposure, no doubt, accounting to some extent for their tardiness in starting. By steeping in warm water or by removing the outer shell from seeds, germination, as shown above, is much forwarded. Fruits of Hawthorns, Hollies, Birch, and other hardy berry-bearing trees are generally subjected to a softening process before their seeds are sown. This process is what is termed the "rot-heap," and is managed as follows:—The fruits are gathered in the autumn as soon as ripe, and are thrown in heaps. A quantity of sand, ashes, or light soil is mixed up with them by frequently turning them; they are then buried in a pit, or placed in heaps and covered with turf, where they remain till the following spring. The whole is then prepared for sowing by partly

drying and then sifting. In this manner the seeds are separated, whilst the warmth and moisture in which they were stored through the winter has softened the hard shell of the seeds, and, no doubt, has excited the germinative process.

Seeds of plants belonging to the Ranunculus and Primrose families sometimes remain in the ground for several years without moving. Mr. Anderson-Henry states that some seeds of Ranunculus Lyalli, the Shepherd's Lily, sown by him in 1878, did not germinate till 1881; and in the case of seeds of a second species of Ranunculus, germination took place four years and a half afterwards. The same extraordinary slowness has often been observed in seeds sown at Kew. How far this slowness to vegetate may be considered as natural to the plants, or whether it is due to some untoward influence to which the seeds had been subjected, is not clear. Seeds of Ranunculus Lyalli vegetated in about eleven months at Kew. I suspect that with most of those plants the seeds of which usually remain in the soil a long time before growing, it would be better to sow the seeds immediately on their becoming ripe. Mr. A. Henry found Primula japonica and Gentians slow to germinate, but when the seeds of these plants are gathered and sown as soon as ripe, they generally germinate in a few weeks. It is said that Colchicum-seeds generally take over two years to start into growth. It is always best to select the largest and heaviest seeds in all cases where robustness of growth is the first aim; smaller seeds being slower to get away, and containing less vital force that larger ones of the same kind. It is also supposed that large seeds retain life for a longer time than smaller ones do. *W. Watson, in "Cassell's Popular Gardening."*

## MESSRS. W. FROMOW & SONS' NURSERY, CHISWICK.

"Chiswick" and "horticulture,"—the terms would appear to be synonymous from their connection with the historic gardens of the Royal Horticultural Society. But it is not our province just now to dilate upon the aforesaid gardens, nor upon the good work performed there. The heading to these remarks will sufficiently explain our purpose. The Messrs. Fromow have been established at Chiswick for upwards of half a century, the dwelling-house in the nursery carrying our thoughts back to a far more remote period, it having been built about 200 years ago, and it will bear favourable—ay, very favourable—comparison with structures of modern date. In the old coaching days it was known as the "Corner Pin" inn, and there may still be seen the spacious wine cellars and vaults in which were kept the "good things" for the revellers in those good "old times." Blue ribbonism was not in the ascendant then. What is now known as Wellesley Road, running on one side of the nursery, was formerly the main road to Hampton Court. The front of the old house is just now wreathed with the intense violet-purple flowers of Clematis Jackmanni, giving it quite a picturesque appearance. In passing, how profusely the Clematis appears to be flowering this year. Query, has the season anything to do with it? This is perhaps one advantage of a peculiar season, such as has been the present one. It brings out the capabilities and merits or otherwise of certain subjects, which under ordinary circumstances would not be observed, and in some cases cultivators (in consequence) may strike out "new lines" of procedure, preconceived notions being quite upset.

But we have been digressing—so to the matter under consideration. Amongst what, for want of a better term, may be called "suburban" nurseries, the establishment under notice holds no mean position; for Chiswick can now no longer be, as it was once, termed a "village." It has been quite transformed—"swallowed up," in fact—in mighty Babylon, London.

Messrs. Fromow may be said to have "stepped into the shoes" of those once famous nurserymen—the Messrs. Glendinning—whose productions at the renowned Chiswick shows of the Horticultural Society are recorded for our edification in the journals of that day.

The attention of horticulturists has been directed to the nursery under notice by the charming groups "arranged for effect" sent from it of recent years to some of our leading horticultural exhibitions, and which have generally occupied a high position in the prize lists. It might, therefore, be not unreasonably supposed that "at home" also there would be something worth seeing, and it was with this object in view that the writer of these made a pilgrimage to Chiswick recently, and the "notion" was not a mistaken one.

The visitor who went there filled with the idea of seeing a grand "show" place would be disappointed; the proprietors are severely business people, and it is owing to this very important and—to be successful—indispensable factor in their method of procedure that their present position is due.

The houses, some fifteen in number, are built with the special object of plant growing, and are therefore plain, commodious, useful, well-built structures.

And now for a few brief notes on their occupants. Rightly gauging the public taste, a collection of Orchids, good, useful, and varied, is being formed, which will, when established, be a special feature. Of course, it is now the wrong season of the year to see what these plants are principally grown for—their flowers—but we noted a few in bloom. Cattleya Eldorado, the pale pink variety; C. labiata speciosissima, and C. Gaskelliana. C. Mossiæ is grown somewhat largely, but is not now in bloom; Aërides Lobbi just coming into flower with its long sprays of pale pink blossoms resembling a wreath.

The well-known Sophronites grandiflora was in bloom, in fact it keeps in this stage for months, so that it is useful on this account, even although its red flowers be somewhat small—the trio to complete those in flower (and good plants they were) are Cypripedium Sedeni, Lælia Dayana, and Oncidium crispum. Of that useful cool Orchid, Odontoglossum grande, a good batch was seen, the foliage plump and healthy. Eucharis amazonica was represented by a numerous batch of specimens in rude health, just showing flower, these will be invaluable a little later on when flowers will be getting scarce. The new form, E. candida (true), is also grown—not quite so large in flower as amazonica, but still a useful acquisition amongst white flowers.

Amongst flowering greenhouse climbers we noted finely bloomed specimens of these favourites, Lapageria rosea and L. alba. A good collection of Camellias is grown, well known and good sorts; the plants are in vigorous health, and will well repay a visit when in flower.

In ornamental foliaged plants were seen some well coloured Crotons; they were light and effective, quite "lighting up" the sombre foliage Palms, with some of which they were associated. Pandanus Veitchii, so excellent a plant for table decoration; Eulalia japonica variegata, a graceful and effective grass; and Ananassa sativa variegata (variegated Pine-apple), represented by a noble specimen; Aspidistra lurida and A. lurida variegata also claim attention here, as being useful, effective plants, and withal standing hard treatment.

Of Palms a good and select collection is grown, a house being specially devoted to their culture, and comprising the best and popular sorts, grown in 32 and 24-sized pots, and therefore manageable and come-at-able plants. We noticed Seaforthia elegans, Areca rubra, A. lutescens, Kentia Canterburyana, very graceful; Phœnix sylvestris. Before we dismiss the Palms a word must be said in praise of Cocos Weddelliana as grown in 60's. It is a variety much used for table decoration, for which it is eminently suited; in this stage the plants for this purpose are transferred from their pots to suitable vases, and these being surface-mossed give them a neat, attractive, and dressy appearance.

Ferns are well cared for, the popular Adiantum cuneatum being grown in quantity, and well done. Pteris crerica and P. serrulata, with its varieties cristata and cristata major, deserve special mention.

As it will soon be Chrysanthemum time it may not be out of place to mention that a good collection of this best of autumn flowers is grown, and they give promise of a good display of bloom. There are about 1000 plants grown of the incurved and Japanese varieties, of various sizes, from those in 48's, short and thick, to large plants, 3 to 4 feet in height. The large plants are disbudded, so as to get very fine flowers, which come to a great size, and are sold to the London florists for table decorations, vases, &c., who get as much as *6d.* and *1s.* per bloom for them. Appended are the names of a few of the best amongst the large flowering varieties (necessarily space forbids any lengthy lists), viz.:—Antonelli, salmon-orange; Golden Eagle, red and gold; White Eve, white, fine; Avalanche, snow-white; Barbara, golden-yellow: Refulgence, dark crimson. Of the Japanese varieties the following were noted:—Triomphe de la Rue de Chatelatel, salmon, shaded rose—good; Garnet, bright blood-red; Boule d'Or, bright gold; George Gordon, chestnut-red; Source d'Or, golden-yellow, extra good; Elaine, white.

A large stock of Pelargoniums of the various sections is grown, and to those whom it may concern it may be somewhat of interest to know that amongst golden tricolors Mrs. Pollock (even now, though old, an unsurpassed variety), Lady Cullum, and Mr. H. Cox are considered the best varieties, and in the gold and bronze class Maréchal McMahon, Black Douglas, and W. E. Gumbleton.

Conifers, Ornamental Trees, and generally Hardy Plants are principally grown at the two

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Fig. 69.—Kæmpferia ornata: leaves dark green, with a central white stripe. (see p. 328.)

branch nurseries of the firm at Hounslow, and contain some special features, which it is our intention to refer to in a future issue. Meanwhile there are some plants in this way at Chiswick that deserve a passing notice. We may well begin with

Ampelopsis Veitchii.—Of this hardy, valuable, and peculiarly graceful variety of Virginia Creeper, over 1000 plants are grown from 2 to 3 feet in height, established in pots.

The Golden Elder, Sambucus nigra var. aurea.—Leaves of a rich golden hue, making it very effective when planted amongst other shrubs. A round-leaved variety of Laurel, aptly called rotundifolia, deserves mention as an acquisition. It is not yet very common, but would appear to be a very desirable kind. What may be well described as one of the finest hardy deciduous plants grown, is Hydrangea paniculata grandiflora, a low growing shrub, covered with its pyramidal panicles of large white flowers.

Golden Yews impart quite an air of attractiveness when viewed in contrast with other Conifers of more sober hues. Adjacent to their Chiswick nursery, and near to the Acton Green station of the District Railway Company, Messrs. Fromow have a plot of ground which is used principally for striking young cuttings of evergreen shrubs, such as Euonymus, Aucubas, Laurels, Privet, &c., and for various kinds of hardy climbers, and then sent to the other nurseries for growing on. There also may be seen a large stock of Ivies—green and variegated—in pots, for immediate use. There are some thousands of small shrubs grown here for filling London window boxes for the autumn season; already preparations are being made for the commencement of this work. To meet the requirements of a rapidly extending business a substantial block of buildings has been erected at Chiswick, at some considerable cost, for the purposes of seed and bulb stores, offices, &c. *J. B.*

## PERENNIAL SUNFLOWERS.

DURING the months of August and September perennial Sunflowers ought to be amongst the most conspicuous ornaments of herbaceous borders. After collecting and testing about twenty species, I have come to the conclusion that all the forms worth retaining in ordinary collections, where decoration is the chief object, are included in six or seven species. Nearly or quite all of these do best when replanted every spring. This should be done when the green shoots are just appearing above the ground. The soil should be prepared, rich and well pulverised; and about half-a-dozen well rooted shoots, more or less, planted in an open but sheltered place, and never allowed to flag from drought. If not too large or crowded the plants may be left for a second year, but the flowers are not so fine as the first, and after the second nearly all kinds degenerate rapidly. The kinds I recommend are—

1. *Helianthus decapetalus.*—The typical form of this is one of the earliest to flower, being fully out by the end of July. It grows about 5 feet high, and the flowers are many, but not large. It is, however, far surpassed as an ornament by its garden variety, H. multiflorus, a very well known plant, easily becoming double, and often producing double and single flowers on the same plant. Its forms of doubling are also various, but the large flowered single forms are the finest. Any one who carefully examines the botanical characters may observe that in spite of the great difference in appearance and size of flower and leaf, H. multiflorus is identical in species with H. decapetalus.

2. *H. rigidus.*—The best of all the Sunflowers is a month late this year in flowering. This plant is now in nearly every garden. I do not know whether a perfectly double form of it has yet been grown, but I expect to have one in a year or two, as one of my plants, quite single three years ago, has been annually adding another row of rays, and has now very little disc left.

3. *H. lætiflorus.*—I have had some difficulty in identifying this plant. The living collection at Kew, which I examined a week ago, did not help me, as the plant marked H. lætiflorus had not then even a bud visible, and was so like H. rigidus in leaf and habit that I could not distinguish it; but Asa Gray tells us that it "resembles tall forms of H. rigidus;" that the leaves are rather thinner, and less rough, and the bracts of the involucrum longer. I have a very beautiful Sunflower, which came to me some years ago from Mr. W. Thomson, of Ipswich, as H. doronicoides. It is taller than H. rigidus; flowers fully a month later, and the bracts in all stages of bud meet over the disc, whilst in H. rigidus the disc is bare even in early bud. This answers in all respects to Asa Gray's H. lætiflorus, except that he puts the plant under the heading of "disc yellow." He tells us, however, that he adopts the H. lætiflorus of De Candolle, who describes the disc of this plant as "sub-atro-rubens," which certainly cannot be translated "yellow." The disc of my plant is, in fact, less dark than that of H. rigidus, but is not yellow. I may mention that a plant which has become common in gardens, having been sold by London nurserymen as H. lætiflorus, with a tall very branching habit, a black stalk, and many rather small flowers, does not bear the least resemblance to Asa Gray's H. lætiflorus, nor can I identify it with any of his species. It is a good late garden plant, but, I suspect, a hybrid.

4. *H. doronicoides* is hardly inferior as an ornament to H. rigidus, and its flowering season comes between that plant and H. lætiflorus. The flowers are quite as large as those of either of the others, but the disc is narrower, and the rays more upright. The height is often 7 feet. It increases very fast, and soon suffers from crowding. It has an elegant habit, but not a very long flowering season, lasting good for about a month. It ripens seed in abundance, from which, no doubt, varieties might be obtained, as well as hybrids. My plants vary in the shades of yellow.

5. *H. giganteus.*—Would be an excellent plant if 5 feet high, instead of 8 or 9. The flower, which is about 3 inches wide when stretched, is elegantly cupped, and the rays very regularly arranged, not unlike those of a Doronicum. Of course so tall a plant requires to be staked; but it branches very freely and produces flowers from half its height. All the kinds I have mentioned are exceedingly easy of cultivation, and with the attention I have advised, may be grown by any one to perfection. There are many other perennial Sunflowers, either of inferior merit or less enduring of ordinary English climate, or of cold soils I have adopted Asa Gray's names, and the synonyms and cross-naming will be found somewhat puzzling. But except lætiflorus, of which the characters are rather obscure, all those I have described are very distinct. I may add that H. atro-rubens of De Candolle (*Prodromus*, vol. v., p. 586), and of *Bot. Mag.*, t. 2668, is the H. rigidus of to-day. The former name was given from the colour of the disc, the latter from the stiffness of the leaves. *C. Wolley Dod, Edge Hall, Malpas, Sept.* 1.



## FUCHSIAS.

THE grand plants of these popular flowers seen at certain of the West of England shows, and occasionally at some in the South, do but serve to show that the art of specimen Fuchsia culture is still existent, although very localised, and it is to be feared even in those few favoured localities it is dying out. Really fine specimen Fuchsias are indeed rare at any shows, whilst in not a few exhibitions very good ones are never seen. Probably very many who grow Fuchsias have never seen such grand pyramids as may be witnessed at Trowbridge or Devises, or as were shown the other day at Southampton, plants some 7 to 8 feet in height, and as perfectly formed massive outlines as it is possible to create. Till such are seen it is evident that very many have no conception of what a first-class Fuchsia is; hence, having no standard of quality, no ideal is aimed at, and specimens so-called are grown in a very perfunctory way.

Londoners never see a really good Fuchsia, but it may be well worthy the consideration of some of our exhibition authorities whether it is not worth while to offer show *habitués* wearied with the constant repetition of metropolitan show plants a chance to see what country growers can produce, by offering prizes such as shall encourage them to bring their finest plants to London, and show them to wondering and admiring multitudes.

We saw a single plant, the other day, at a country show, carrying off a prize value 5*s.*, worth in beauty and quality alone more than the six plants which took a 1st prize of £5 at South Kensington last month. If three classes, as at that show, could be made open to all exhibitors, three prizes to each, and of a value of not less than £40, no doubt the finest Fuchsias in the kingdom would be brought to compete. In offering prizes for these big things it must not be forgotten that they are big—indeed, very much so—each plant needing some 8 to 9 feet of head-room, and an area of 6 to 7 feet square. Hence it is evident that transit is costly. If, therefore, these grand plants are to be seen by Londoners, prizes of tempting value must be offered.

It is very evident to the most casual readers of flower show reports, as also to observers, that the very best kinds for the production of grand specimens, which will also travel well—that is, retain their flowers through a long journey—are comparatively limited in number, and include chiefly sorts raised by that Fuchsia veteran, Mr. J. Lye. Even if that famous grower had not been the pioneer of specimen Fuchsia culture as seen in the West, he would have merited the gratitude of every admirer of Fuchsias for his energy and success in producing so many new and fine kinds. Mr. Lye has given his labour to the production of sorts having good free-blooming habits rather than to the production of huge flowers, and the present race of show kinds is his worthy monument.

It would be a serious error were it assumed that Fuchsias are difficult to grow into these huge and perfect pyramids. It is hard enough, no doubt, to those who do not know, but it is not hard to learn how, and, once having learned, the art is simple enough. Employers would be delighted to see grand Fuchsias about their gardens, even if not grown for exhibition, but there are few who would not be as pleased to permit their gardeners to show the results of their cultural skill to the public.

We have seen for the present enough of hackneyed things, most of which may well be termed hothouse Rhubarb and Cabbages, and shall hail with satisfaction a return to specimen flowering plants, amongst which none are more beautiful, few more graceful, than are really finely grown pyramid Fuchsias. *D.*

## HARDY ORNAMENTAL SHRUBS.

CATALPA BUNGEI.—Although of somewhat rare occurrence in this country, yet where they thrive the various species of Catalpa are singularly beautiful, and well worthy of extensive culture, if even for decorative purposes alone. The charming effect produced by the ample foliage and large clusters of deliciously fragrant flowers of C. Bungei prompts me to recommend it as a first-class garden or lawn subject. Although not generally hardy in this country, and usually cut back during severe winters, it soon recovers, and throws out dense masses of new growth in spring. In Britain it is a dwarf shrub of 5 or 6 feet in height, with glabrous, generally entire, ovate, acuminate leaves. Here this singular plant seems quite at home planted in rather stiff loam and an open situation, and is at present covered with its racemose inflorescences of Horse Chestnut-like flowers—greenish-yellow with red spots.

C. BIGNONIOIDES.

The better known C. bignonioides, or Indian Bean, is another highly ornamental as well as useful timber tree (it is usually shrubby in this country), with large leaves, downy beneath, and pretty white flowers tinged with violet, and speckled with purple and yellow in the throat. The variety aurea is about one of the best golden-leaved shrubs that we remember having seen. Other desirable species are the Japanese plant, C. Kæmpferi, a near ally of the latter, and C. speciosa, a finer and more rapid growing tree than C. bignonioides, and with larger flowers, fruit, and seed.

BERBERIS WALLICHIANA.

The second flowering of this lovely shrub puts me in mind of its value as a decorative plant. It is a remarkably handsome and very distinct species, with a compact easy habit and clear yellow flowers, which contrast strangely with the deep green tint of its evergreen foliage. As a wall plant we find it to do best, although several clumps planted out in the grounds for ornamental effect have given general satisfaction. This plant is known in not a few collections under the name of B. Hookeri, but as it was first discovered and sent home by Wallich, and ulti-

mately reintroduced by Sir Joseph Hooker, we think the latter name should be disused, and priority given to that of the finder. There is another variety under the name of B. Jamesi, which if not identical with Wallichi, is certainly so closely allied as to have quite puzzled us to point out a difference. Almost any quality of soil comes alike to these plants: light peat, sandy loam, or even vegetable refuse, growing them very successfully.

HYDRANGEA PANICULATA GRANDIFLORA, AND H. THOMAS HOGG.

These are now well in bloom, and when grown under peculiar circumstances are decided improvements on the older and better known H. hortensis. The former, when well grown, is certainly a magnificent plant, with large panicles of pure white sterile flowers, which last for a considerable time, frequently from July till frosts set in. It is much improved by a yearly pruning, which not only induces good habit, but materially assists in enlarging the flower-clusters. It is readily propagated by cuttings of well-ripened wood from last season's growth. H. Thomas Hogg is a beautiful plant with pure white very handsome flowers; indeed, the great point in growing these plants should be to procure pure white flowers, for in the "greenery yallery" too often seen half their beauty is lost.

H. HORTENSIS.

The flowering of H. hortensis is this season unusually fine, and specially recommends this old-fashioned plant for extensive outdoor use in the more favourable parts of England. Planted in good bold masses, at a respectable distance from drives and walks, and backed up by taller-growing, dark-foliaged evergreens, this lovely plant has, during the flowering period especially, few equals for beauty of effect or general lasting qualities. *A. D. Webster.*

## FROM A DUBLIN GARDEN.

A LITTLE gathering from an old garden of things not generally common. *Imprimis*, fruits of Pæonia corallina, from the steep Holme Island in the Bristol Channel, where only in Britain it grows wild, and where for company the odorous parent of our garden Leek, Allium ampeloprasum, grows also. If these as yet unopen capsules of the Pæony be placed on a mantelshelf or in a warm room they expand and form beautiful objects just as they do if left upon their parent plants. There is a Pomegranate-like richness of colour, the fertile black seeds contrasting so forcibly with the abortive crimson ones. Lotus tetragonolobus is a pretty crimson or yellow-flowered annual, its winged pods being peculiar, with its longish tap-root densely covered with tubercular growths, which are found in all Leguminous plants. The scarlet berries of Sambucus racemosus are a little *passé*, but still beautiful as seen against the sky, or in contras with the soft dove-like Magnolia flowers in the sun.

Aster Ptarmicoides is quite a little gem amongst Michaelmas Daisies with its slender stems a foot high, covered with grassy leaves and terminated with milk-white flowers? I think it most beautiful as seen growing. It is very bright and useful for cutting, as its little rounded heads retain their colour well, as also do those of its larger cousin, E. Olivierianum.

When in flower the Billiardiera longiflora is not very winning, but now all our visitors are most enthusiastic in their admiration for its lovely purple fruits, so gracefully strung on leafy string-like shoots. It is hardy on a warm wall, and well deserves a place among rare or select shrubs. The "Carrot-bush," or "Hare's Ear," Bupleurum fruticosum, is now covered with golden-green umbels above its soft glaucous leaves, and so contrasts well with its relations, the Eryngiums. "Let it rain kissing comfits, hail Potatos, and snow Eryngoes," as Shakespeare says, in allusion to the former custom of candying the roots of our common Sea Holly.

Here also are the little hedgehog-like fruits of the "Calvary Clover" (Medicago echinus), a hardy annual, or prettier if a few of its seeds be sown in a basket or hanging pan in greenhouse or window, so that its trailing shoots and red spotted leaves are seen to advantage. Its pods are curiously twisted up spirally into a ball, and being prickly along their outer margins gives them the "hedgehog" appearance whence, no doubt, their specific name. Having red or blood-like spots upon its leaves, of course superstition has invented a legend to fit the spots; but the legend belongs to Palestine, and does not the plant belong to sunny Spain? *F. W. B.*

## TERRESTRIAL ORCHIDS OF SOUTH AFRICA.

(*Continued from p. 308.*)

SATYRIUM.—Sepals and petals nearly alike, forming together the five-parted lower lip of the flower. Labellum helmet or hood-shaped, with two short or long spurs, forming the upper lip of the flower. Natives of India, Madagascar, Tropical and South Africa, the majority of the species inhabiting the latter region. The flowers are usually numerous, in a dense spike, many of them being very handsome.

*S. Atherstonei*, Rchb. f.—A tall, slender species, with linear-lanceolate, three-ribbed leaves, and a rather dense spike, 2—3 inches long, of small flowers, which are described by various collectors as "white and yellow," "pure white," and "creamy-white;" the bracts are lanceolate acuminate, spreading or reflexed, two or three times as long as the flowers, and, judging from their appearance when dried, seem to be white, or cream coloured. This appears to be a very distinct and striking species; it is a native of Natal and the Transvaal, where it grows in swamps.

*S. bracteatum*, Thunb.—A small but pretty species, 4—6 inches high, with elliptic lower leaves, the upper ones decreasing in size, and becoming more ovate-lanceolate. Flower-spike 1½—2 inches long, many-flowered; bracts broadly ovate acuminate, spreading or reflexed; flowers small, white, with purple lines, spurs reduced to small pouches. A very neat little plant, growing in moist sandy places amongst grass, on the mountains of the Cape peninsula, flowering in October.

*S. candidum*, Lindl.—Stem 6—12 inches high, with two large roundish, or very broadly ovate radical leaves, and three to four large open obliquely cup-shaped stem sheaths. Flower-spike 3—6 inches long, many flowered, bracts elliptic acute, reflexed. Flowers about ⅔ inch in diameter, pure white, with an aromatic fragrance, spurs slender, an inch long. A beautiful species, which was first introduced by the renowned astronomer Sir John Herschel, about 1838, and was described from his plants. It grows on the Cape peninsula, in sandy boggy places, at low altitudes (50—100 feet), and flowers in September and October.

*S. carneum*, R. Br., *Bot. Mag.*, t. 1512; *Flore des Serres*, iv., t. 329; Reichenbach, *Flora Exotica*, t. 266.—A fine robust species, the lower leaves large and orbicular, those on the stem becoming more and more sheathing and cucullate. Spike elongating, bracts broad, pale green, edged with reddish. Flowers large and handsome, an inch or more in diameter, light rose-pink, with spurs an inch long. Mr. Bolus writes of this as follows:—"Less common than S. coriifolium, grows in moist sandy places, ascending the mountains up to 800 or 1000 feet; does not approach within 8 or 10 miles of Cape Town; has robust spikes of rose-pink flowers; soil, &c., nearly as in S. coriifolium" (which see). "The *Botanical Magazine* figure" of which the two other figures above quoted are exact copies) "represents a specimen much below the average beauty as it grows here, either wild or in cultivation. In gardens it grows and flowers freely." This appears to be a very handsome Orchid, and well worth cultivation.

*S. coriifolium*, Swartz, *Bot. Reg.*, t. 703; *Bot. Mag.*, t. 2172; Sweet, *Flow. Gard.*, ii., t. 3.—Stem 12—30 inches high, robust, with 3—4 oblong-lanceolate acute, concave, leathery, deep green basal leaves, passing upwards into stem sheaths, and a many-flowered spike, 3—6 inches long, of rich yellow flowers, about an inch in diameter, suffused on the hood with deep orange, spurs 4 lines long. Bracts broadly ovate-lanceolate acute, reflexed, A fine handsome Orchid, which has this summer flowered at Kew, but did not appear to me to equal the wild specimens in beauty, concerning which point and its habitat Mr. Bolus writes as follows:—"The *Bot. Mag.* and *Bot. Reg.* figures of this species represent specimens much below the average of beauty as they grow here, either wild or in cultivation. It is one of the commonest Orchids near Cape Town; it grows on moist sandy downs between Table Bay and False Bay, and has an unusually long flowering season, say from September 10 to November 10. It reaches a height of 24 to 30 inches, with spikes of brilliant orange or flame-coloured flowers; the tubers in their native soil are in a constant state of moisture from about May 15 to September 15, when they gradually dry, and become very dry between November and April, when there are usually only occasional showers." The stem and sheaths of the leaves are sometimes spotted with purple-brown.

*S. erectum*, Swartz (*S. pustulatum*, Lindl., *Bot. Reg.*, vol. xxvi., t. 18).—Stem 8—18 inches high, with two roundish radical leaves 2—4 inches long, 1½—3½ inches broad, several stem-sheaths, and a rather dense flower-spike 3—6 inches long. Bracts broadly lanceolate acute, reflexed. Flowers ⅔ inch in diameter, rose-pink dotted with darker, spurs 4 lines long, galea with an obtuse recurved or erect apex. A showy species, growing in clay soil which becomes baked hard by the sun, in the south-western part of the Cape Colony, and extending eastwards as far as the district of Albany; it flowers in October. Mr. Bolus writes of it, that it "grows to twice the size of the figure in the *Botanical Register*, in the warmer inland country, and stiffer soil. Flowers rosy and spotted, handsome." Lindley writes of it:—"The flowers are of a deep clear rose colour, melting into white, and richly spotted with purple in the throat; they smell like sweet vernal-grass. I know no Orchidaceous plant prettier than this."

*S. Hallackii*, Bolus.—A tall, robust plant with leafy stem; leaves broadly lanceolate or linear-oblong acute, the lower ones 5—6 inches long, the upper gradually smaller, and cucullately sheathing. Flower-spike dense 3—6 inches long; bracts ovate-lanceolate acute, reflexed as the flowers open. Flowers nearly ½ inch in diameter, bright rose, spurs 4 lines long, slender. A fine and handsome plant, growing in moist sandy plains, near Port Elizabeth, Knysna, Zeekoe valley, &c.; flowering in December and January.

*S. longicolle*, Lindl. (= *S. maculatum*, Lindl.).—In habit and general appearance this much resembles S. erectum, but is at once distinguished by its much longer ovaries and spurs, the latter being a full inch long, and exceeding the ovaries a little. The flowers are white, tinted with pink, the petals and labellum marked with rosy-purple spots, and the throat of the galea striate with purple. A rather fine species, that would seem to be tolerably common in several parts of Cape Colony, but I have no notes as to habitat, &c.

*S. sphærocarpum*, Lindl.—About a foot high, lower leaves (2—3) elliptic-oblong obtuse, upper ones more or less sheathing. Flower-spike 3—5 inches long; bracts broadly ovate-lanceolate acuminate, reflexed; flowers ⅔ inch in diameter, white pencilled with pink; spurs 4—6 lines long, longer than the short ovary, which becomes ellipsoidal in fruit. A native of Natal and the eastern districts of Cape Colony, ascending to an altitude of 800 feet, flowering from October to December, and appears to be a very ornamental species.

SCHIZODIUM.

Dorsal sepal helmet-shaped, with one spur, lateral sepals channelled, spreading. Petals small, unequally 2-lobed or twisted, attached to the column. Labellum free, narrow, lanceolate acuminate, or broader and more or less undulate, constricted at the base.

A genus of but few species, consisting of small plants, remarkable for their rigid, wiry, flexuose stems and small radical leaves; all are natives of South Africa. The flowers are not numerous or remarkably showy, but the two following species appear to me worthy of cultivation.

*S. flexuosum*, Lindl.—Stem flexuose, 8—12 inches high, slender. Radical leaves about an inch long, stalked, elliptic obtuse, stem leaves coriaceous, oblong acute, concave. Spike few flowered. Flowers ⅔ inch in diameter, white, with a deep golden-yellow labellum spotted with dark purple-brown. This grows in moist sandy or clayey soil near Paarl, &c., at low elevations, in a warmer climate than the Cape peninsula species enjoy. The flowers are not numerous, but of fair size and open, and in a mass would be very effective. It flowers in September and October.

*S. rigidum*, Lindl.—Dwarfer than S. flexuosum, and with smaller leaves. The flowers are about ¾ inch in expanse, and are said to be "delicate pink-spotted (or spotted with brown);" the dorsal sepal has a horizontal or upwardly curved spur 4—6 lines long, the lateral sepals are narrow

linear-oblong, and the lip arched, narrow, lanceolate acuminate. It grows in sandy places near Cape Town at a very slight elevation above sea-level, and flowers in August. *N. E. Brown, Kew.*

*(To be continued.)*

## NATURE IN GARDENS.

As one whose views are somewhat at variance with those of "J. D. D.," as set forth in your issue of August 22, permit me a brief space in order to examine what appears to be the drift of his contentions. Unfortunately it is not given to mortals—and particularly to that section of mortals whose lot is cast in the world of gardening—to see with that intensely critical (hypercritical, I had almost written) vision which characterises the remarks of "J. D. D." What is true in Art must be very dear to every true lover of Nature; as Nature must also be the true basis upon which Art is built. But is it not somewhat too sweeping to describe as worse than savagery all that does not accord with "J. D. D.'s" views of the beautiful?

I fear I shall shock the susceptibilities of those who think with your correspondent when I aver that I can trace beauty in the curves of a well formed gravel walk quite as distinctly as in the circuitous windings of some silvery stream, though, of course, in a different degree. Then as to geometrical bedding, which seems to come in for a large share of declamation. I do not intend to pose as an apologist for this system or style of bedding; although from my own knowledge it is a style which affords much pleasure to thousands of persons for whom the vivid colour of the Poppy, or the brief glories of the Columbine have no charms. True, they may be incapable of criticising either what is truly artistic or truly natural, from the high pinnacle from which "J. D. D." evidently writes; but who shall say that their enjoyment is one whit the less real because of this inability? Fashion, no doubt, plays strange freaks with other things besides costumes; but to declare that a well arranged bed of this description is a hideous disfigurement because it happens to be found where "J. D. D." would have his flowers, is, to say the least of it, using adjectives somewhat indiscriminately.

I am afraid I can hardly lay sufficient claim to good taste, to acquiesce in the statement that the colouring of these beds is a "disgrace to civilised beings," and if that great potentate, common sense, condemns everything which it is necessary to keep under glass during the winter, he is a more arbitrary being than I thought him. But may it not prove, upon close examination, that this is hardly in strict accordance with the fact? What, for instance, would be the use of a greenhouse for such plants as these:—Herniarias, Antennarias, Sedums, Sempervivums, Stellarias, Spergula, Mentha, Achilleas, Pyrethrums, and a host of other good things? (The hardy kinds, are, of course, meant.) Let us have the beautiful things mentioned by "J. D. D." by all means, but do not ask us to discard every plant whose flowers are not as striking as a Poppy or a Parrot Tulip. If we must follow Nature implicitly, let us at least be consistent, and to the glowing picture of shrubberies with all their splendour of fallen leaves and glorious disorder let us return—to the simple style of dress favoured by our forefather before the Fall, so that all may be in delightful harmony. Cowper in one of his beautiful poems says:—

> "But 'tis not timber, lead, and stone,
> An architect requires alone
> To finish a fine building—
> The palace were but half complete
> If he could possibly forget
> The carving and the gilding."

And as the carving and gilding are essential to the palace, so also are neatness and order in our gardens, as well as those hundred and one little touches of Art which reclaims the waste to make it blossom as the Rose, or even the Poppy. By Art, however, I do not mean the distorted trees one sometimes sees clipped into the supposed resemblance of some extinct mammalian monster, or the broken glass, pounded spar, red brick, and coal-slack, considered by some to be necessary adjuncts to the flower garden, but that Art which removes the superabundant branch from the tree in order that he may "mend Nature," or the disposing of a bit of colour here, and a striking form yonder, the enlivening of this, or the subduing of that; let us have the wilderness also, but not in the garden, I beseech you, my masters—not in the garden, but where old Mother Nature may revel undisturbed. *H. L., Leamington.*

## THE SEED-VESSELS OF ORCHIDS.

THE publication of our previous illustrations attracted so much attention to a hitherto neglected field that we now lay before the reader further



FIG. 70.—SEED-VESSEL OF EPIDENDRUM NOCTILUM.




FIG. 71.—EPIDENDRUM NEMORALE: SEED VESSEL AND PEDUNCLE.

illustrations taken from specimens in the collections of the Royal Gardens, Kew, of Sir Trevor Lawrence, and of Sir Charles Strickland. The drawings are for the most part sufficiently illustrative to obviate the necessity for detailed description. One or two points, however, demand explanation. The ribs which vary so greatly in degree of prominence represent the midribs and the combined edges of the three constituent carpels which constitute the fruit. Another feature worth notice is the retention of the column (see fig. 70), which even becomes thickened in some cases after fertilisation. The segments of the perianth also, in some cases remain attached to the fruit, while in others it not only persists, but enlarges in size, and assumes a more or less leafy condition, just as the sepals of the Helleborus niger, or Christmas Rose, often do after flowering. It is reasonable to suppose that this resumption of the leafy character may facilitate the development of the seed by ensuring a further supply of nutriment. Another point worth attention is the manner in which these flowers become fertilised in our hothouses. Some are purposely impregnated artificially; but others are fertilised, either by insects or by close fertilisation, in which the pollen of any particular flower impregnates the stigma of the same flower. This is a subject which has excited a great deal of attention on the part of Mr. Darwin, Professor Meehan, the Rev. George Henslow, and many others. The last-named observer in particular points out the frequency with which self or close-fertilisation may occur without injury to or deterioration of the seedling; but however true this may be in individual cases, it does not invalidate Darwin's doctrine, that an occasional cross is necessary for the prolonged vitality or perpetuation of the species. Latterly Mr. H. O. Forbes has added considerably to the number of Orchids which are known to be close-fertilised, and to those in which the structure is such that access of insects is prevented, and close-fertilisation must ensue or none at all. In illustration of this subject we may cite one or two extracts from Mr. Forbes' paper in the *Journal of the Linnean Society*, lately issued:—

"One of the prettiest and commonest Orchids of the neighbourhood [in Java] was the pure white Dendrobium crumenatum, Swartz, of which I have examined thousands of flowers; scarcely one in eighty ever sets a seed-capsule.

"Calanthe veratrifolia produces quite a dense head of elegant white flowers, but the number of these that become fertilised is in enormous disproportion to those that fall off barren. I have examined plants in numerous situations, on heights amid the dense forest, as well as in open places. I have studied them low down, both in sun and in shade, and I have invariably found that a very small proportion of flowers produce fruit. Generally the pollinia are found in the anther after the fall of the flower, but they are often absent without any pollen being left in return on the stigma.

"In five different plants (taken at random from my note-book), out of 360 flowers 109 were withered with intact anthers, or had lost their pollinia, and were unfertilised; 245 had fallen off; six only had produced capsules. . . . .

"My first acquaintance with Phaius Blumei was in a specimen which had been under cultivation for about a year, but I have since found numerous examples, in a state of Nature, presenting the same appearance in every rerpect.

"Here, then, we have an Orchid presenting every attraction to insects to pay the flower at least a first visit (when they would find no nectar), a large showy flower, with some perfume which is not disagreeable, a distinct nectary, an attractive labellum embracing the column, yet self-fertilised, and rarely, if ever, anything else. The above account of Phaius Blumei would perfectly suit all the species that I have examined growing in their wild state or in cultivation. . . . .

"One of the most singular Orchids that has come under my observation is of a species unknown to me, and nearly related, if not belonging, to the genus Chrysoglossum. It carries the contrivances for self-fertilisation to the utmost limit. It is terrestrial, has long pointed fleshy leaves, and produces a spike about 1 foot long, with alternate flowers at short intervals. It is not only self-fertilised, but cleistogamous. I first found it at a height of 3000 feet, where I observed that all the flowers were fertilised, but to all appearance none had ever opened. I brought several plants home and planted them in pots, where they at length threw out new spikes, which appeared to be perfectly healthy. The flowers remained as buds nearly two weeks, during which the ovary daily increased in size; then they shrivelled and dried up, while the ovary enlarged to its full size. On opening it I found it to be well filled with seeds. The labellum is beautifully marked with lines of purple-carmine; the column with carmine and yellow; but no insect could ever be fascinated and allured by its painted whorls. . . .

"The great family of the Vandeæ, however, seem rarely, if ever, to be self-fertilised; they are either cross-fertilised, or altogether fail to set seed capsules. Terrestrial Orchids seem more liable to self-fertilisation than epiphytic species. . .

"In the foregoing pages I have drawn attention to the facts:—(1) that a number of Orchids with showy flowers never set any seed capsules; and (2) have given additional examples to those mentioned by Mr. Darwin of Orchids of different genera being invariably self-fertilised, and in many cases impossible to be other than self-fertilised; I have also described the mechanism of their fertilisation, such as occurs in the species of Phaius, in P. pathoglottis plicata, and other species of the genus, and especially in Arundina speciosa. Eria albido-tomentosa and E. javensis, I have never found otherwise than self-fertilised; and a species belonging to a genus near to Chrysoglossum I have shown to be cleistogamous. The observations above given would seem, therefore, to support the Rev. G. Henslow's conclusions so ably given in his *Memoir on the Self-fertilisation of Plants*, already published in the *Transactions* of this Society (n. s., vol. i., pp. 317—398, pl. 46, 1879)."

## FRUIT NOTES.

Trained Pyramidal Fruit Trees — Training and Pruning. — Apple and Pear trees of the above form grafted on the dwarfing stocks are now very handsome in some gardens, and are also bearing very freely where they have been well trained. But the trees are not always well trained. They are sometimes very badly managed, and the fruit produced is consequently of poor quality. Some trees are easily trained into the pyramid form, indeed they take almost naturally to it; others are not so easily managed. It is now a good time to prune them. Some people pinch and cut the young wood too early in the season, with the result that a later growth is made, which is not satisfactory, and buds start into growth that ought not to do so. If the summer pruning, as it is termed, is not done until the end of August or September, the buds do not start to grow, or at least, if they do, it would be to a very limited extent. The blossom-buds form well, and all the buds plump up better when the superfluous growths are removed. The trees have a tendency to become too much crowded with wood; and it requires some judgment on the part of the cultivator to remove what is not required. But even a skilled operator will know better how much wood ought to be removed when the trees are in leaf than they would in winter when all the leaves have fallen. The fruit produced near the centre of a pyramid or bush tree is not of a large size or good quality, unless the outer branches are cut out to admit light and air to them. If the pruning is rightly performed now, the trees will take the form desired by the operator next season. The young wood must be shortened less or more according to the way the tree is furnished. If there is plenty of bearing wood, the ends should just be cut off the young wood, but if the bearing wood is not sufficient to furnish the tree the young wood must be well shortened in proportion, and in cutting it is necessary to observe that the terminal bud left will grow into an open space, rather than into a part of the tree where it is not needed. Many persons with a limited experience do not take any notice of this, and cut away without any thought of the direction in which the main or terminal growth will develope itself. Sometimes I have pruned the trees when the fruit has been gathered, at other times before. Not infrequently the young wood both on Apple and Pear trees is so dense and covered with leafage, that the fruit is not sufficiently exposed to the sun until it has been removed. *J. Douglas.*

### Cherries under Glass.

The Cherry tree as a standard in the open air is seldom found to be satisfactory, the bloom being so frequently destroyed by late spring frost. And even in very favourable seasons, when a crop has been so far secured, there is in most localities a great difficulty in protecting it from the ravages of birds. This is more easily accomplished, it is true, when the trees are trained to walls, but even when grown in this form the crop frequently suffers from the effects of inclement weather in spring. I am alluding to the varieties of the sweet Cherry. As regards the Morello variety, it is different; it blooms later, and it is possible that its flowers can resist the spring frosts better than the flowers of the sweet sorts, at all events the crop of Morellos seldom altogether fails, and birds are less likely to attack them, although they will occasionally do so, if the fruit is allowed to hang upon the trees after it is quite ripe, when the protection of a net is found necessary.

But, as regards the varieties of the sweet Cherry, which are so delicious, and so generally esteemed as a fruit, they are without doubt well worthy of the protection of glass, and as your correspondent "Cerasus" says, "Why not have Cherry-houses as well as Peach-houses?"

As has been frequently shown, the Cherry may, like



Fig. 72.—Seed vessel of Phaius Wallichii



Fig. 73.—Seed vessel of Phaius grandifolius.

the Peach and other fruit trees, be grown in pots under glass, but to successfully cultivate fruit trees in pots, unremitting attention in the matter of watering, &c., is necessary. And they are found to be, at least, equally successfully grown, and with less trouble, when the trees are planted out, in properly prepared borders or beds of soil.

I have had some experience in growing the Cherry, as well as the Peach, &c., according to both methods, but must admit that I greatly prefer the latter, that is, planting out the trees.

In a large unheated span-roofed structure, at one time under my charge, the finest varieties of the sweet Cherry, together with Peaches and Nectarines, were planted out and successfully grown in the form of standards. The various varieties of the Cherry bore freely, while from similar trees of the same varieties planted in the open air, little or no fruit could be obtained.

The Peach and Nectarine trees in the form of standards and pyramids bore also good crops of fruit, but this fruit was always found to be inferior to the fruit of similar varieties planted out in an in all respects similar structure, where the trees instead of being in the form of standards, were trained under the roof at a distance of 20 inches from the glass.

This circumstance leads me to think that Cherry trees trained in this fashion will be likely to produce finer fruit than that produced by trees in the bush or standard form. The Cherry, whether out-of-doors or under glass, frequently suffers severely from the attacks of the black or Cherry-fly, and the trees trained in the form recommeded will be found to be more readily freed from this pest by fumigation or the use of the syringe than when grown in the bush form, whether under glass or in the open air.

It will be admitted that if any of our hardy fruits are deserving of increased attention it is the Cherry, which has even in some respects the advantage of the Peach and the Nectarine, inasmuch as the fruit of the Cherry when quite ripe will not fall from the trees, as is the case with the two former fruits, but will continue to hang upon the trees in good condition for a length of time. And it is somewhat strange to think that this delicious fruit is not more generally grown in the form referred to than appears to be the case. *P. G.*

### Flavour in Pears.

It is hard to see how a classification by flavour is to be effected, No doubt Williams' Bon Chrétien, Seckle, Tillington, Beurré d'Aremberg, Gansel's Bergamot, and others, are quite distinct, as regards flavour, from the general run of Pears, and in most cases from each other. But how is their flavour to be termed? There is nothing exactly like. Musky is an example, and has the merit of antiquity, being used by Parkinson. Buttery is tantamount to mellow, and vinous to very juicy. The flavour of such Pears as the above is known to everybody who has any knowledge of pomology, and must be enumerated in any description to distinguish them from the "reasonable faire and good Peares" which have no such relish. It would be impossible to get three Pears, differing in outward appearance and time of ripening, that could be classed together as regards flavour, except under such epithets as melting, which if a Pear is not, it is hardly worth growing. The best method of classification is, after all, the time of ripening. The peculiarities in this respect, and long-keeping qualities, could be well studied if exhibitors, and those who really desire to make the report of stable value, would continue to send collections of ripe fruit to the Fruit Committee throughout the winter, and not only to the Congress. The influence of stock on scion ought to form an especial feature of utility to the Congress, and the facts educed, together with the influences of soil on quality, put into a connected and readable chapter. *C. A. M. C.*

## FRUIT GROWING AND JAM MAKING.

If the men who farm the broad acres of England had been naturally the veriest dullards to their own interests the world ever saw, it might have been supposed that, with the never-ending advice vouchsafed to them, they would have been able to see their way as to what they should do to make the land pay. The most amazing thing connected with the subject is that one rarely meets with a fairly intelligent individual, no matter what his calling or occupation may be, even if he does not know a clod-crusher from a winnowing-machine, or is unable to distinguish the difference betwixt a crop of Mangels and another of Turnips, still he considers himself quite capable of telling you what the farmers ought to do with a view to their own benefit and the prosperity of the country. If corn, the staple commodity in all countries where agricul-

ture flourishes, does not pay, they are children for their stupidity in not giving up corn growing, and confining their attention to live stock. If foreign competition, and cattle disease, make this a risky proceeding, they are reminded that they should cultivate vegetables and fruit. Yet the would-be monitors never seem to have given a thought as to the comparatively little that can be done in this latter direction before the limits of production exceeding demand are reached. If proof of this were wanting it is now presented in a way that admits of no mistake by what has followed the extension of fruit culture in a single district in Kent, at and about Swanley, St. Mary Cray, and the surrounding parts, where, in addition to the Apples, Pears, Plums, and Cherries that have long been grown, Strawberry and Raspberry cultivation of late years have been largely increased, with the result that prices have been so reduced that after the cost of production is deducted the profits remaining are insufficient. To meet this state of matters one of the largest growers, Mr. Wood, of Woodlands Farm, Crockenhill, Swanley, has this year started an extensive factory adjacent to Swanley station, so as to be able to convert the fruit he grows into jam, in place of, as hitherto, like other growers, having to dispose of it to the jam-makers. The structure is built of bricks, and is a very good-looking substantial erection; it was completed during the spring of this year, and the requisite plant put in ready to commence operations when the earliest fruit, Strawberries, &c., were ripe.

The boiling-house is a large roomy place on the ground floor, with fifteen copper boilers ranged in line on one side. The process is effected by steam, to provide which a 60-horse power boiler has been put down in a shed adjoining the boiling-house; from this the main pipes conveying the steam are carried along under where the boilers are placed. The arrangement is such that a branch pipe connected with the main can easily be attached to, or detached from, each of the boilers; these branch pipes are provided with taps, so that the volume of steam can be regulated at will. The sugar is first put in the boilers with a little water to liquify it; the steam is then turned on, and in about two minutes it is reduced to a clear, transparent syrup; during this time it is kept stirred, the fruit is then put in, and in a few seconds is boiling furiously; it is kept stirred until boiled sufficiently with a long flat utensil of polished wood, in shape like the paddle of a canoe, with which the attendant on each boiler is provided. When boiled sufficiently it is removed to another big room adjoining, where it is put in the jars; after cooling it is sent up to the second storey, where making-up and labelling is done. About seventy hands are employed, most of them young women, who do the lighter work of picking the fruit, and making it up. The boiling is done by men, under an experienced foreman.

It is quick work all through. Plums were the fruit in hand on the day of my visit; they were gathered that morning, and came to hand covered with their blue bloom, and in fifteen minutes from the time the sugar was put in the boiler the steam was shut off, and the boiling completed. As soon as cool enough the jam was put in the jars, allowed to stand a short time, and then the capsules, made of vegetable parchment, were put on, and tied down as tight as the head of a drum, and the labels denoting the kind of fruit the jars contained were attached; with this the process was complete, and the jam ready for packing, to be sent away the same evening. The packing-shed attached to the main building occupies a large space, admitting of the carts and waggons being loaded and unloaded under cover.

Strawberries, Raspberries, Gooseberries, Red Currants, Black Currants, Green Gages, Apricots, Damsons, and coloured Plums, are each preserved separately. No mixtures of any kind are made except one of Apples and Plums, and the household jam, which is a mixture of whatever fruits are ripe at the same time. The sugar used is all of the best quality, superfine Dutch crushed, and American granulated. The sizes of the jars are 14 lb., 7 lb., and 4 lb., glazed earthenware; 14 lb. and 7 lb. tins, 3 lb., 2 lb., and 1 lb. glass jars. Jelly of different kinds is put in 1 lb., ½ lb., and ¼ lb. glasses. Nothing in its way could be finer than the different kinds of fruit, as seen in the glass jars, with much of it showing its natural form, so different from the indescribable "smash" often met with. The jelly is as clear as the "moulds" turned out by a first-class confectioner. A large amount of fruit has been got through—260 tons of jam were made in July, and only something less in August, and the work will be continued until the last of the Plums are over.

Mr. Wood, besides the Swanley Farm, has two others—Greatness Farm, at Sevenoaks; and Horn Park Farm, Lee. Altogether he has 250 acres devoted to the various kinds of fruit. All the fruit that has been converted into jam and jelly during the summer has been his own growing except a few Plums, and in addition 70 tons of Strawberries were sold. Nineteen tons of Raspberries were gathered in one day. Even those who have some knowledge of fruit growing will have a difficulty in fully realising the amount of labour that has to be employed in the gathering alone when such figures as the above are taken into account.

Much is often said, and possibly not without some cause, about the mysterious materials of which some jam is composed, and about the stale half-rotten state of the fruit when it reaches the makers; but here, as already said, every kind is kept separate except the two mixtures named. The superiority of jam when made, as here, from fruit fresh gathered and virtually grown on the spot, is so obvious as to need no comment. The whole process is carried out with scrupulous cleanliness; the floor of the boiling house is composed of channelled vitrified bricks laid in concrete, and is daily scrubbed and flushed with water. Mr. Wood's undertaking is a move in the right direction, which is to bring the producer and the consumer nearer together, which is a matter of vital importance in these days when the cultivators of the land are under a cloud of depression, through which unfortunately there is no break discernible. A word may be said about the trade mark on the labels of the jars of jam—a traction engine. This has some connection with a successful enterprise Mr. Wood embarked in some years ago, and still continues. When cultivation by steam came into vogue he began with several engines to plough and scarify for others in addition to what he required in this way himself. The business has gone on extending until he has now between thirty and forty of these engines, which besides cultivating the land may be seen on the roads in the surrounding district, hauling manure, gravel for the roads, builders' materials, or anything of a like description. *T. B.*

# Orchid Notes and Gleanings.

### CYRTOPODIUM PUNCTATUM.

Pseudobulbs 3 feet high. Leaves sheathing, broadly lanceolate, acuminate. Flowers very numerous, in erect branching panicles, at the base of which are lanceolate undulate bracts marked like the sepals, and producing an appearance as if they were detached sepals. Each flower is about 2 inches across; sepals greenish, undulate, marked with narrow crowded transverse brown blotches; petals of like form, yellow; lip 3-lobed, lateral lobes erect, rounded, chocolate-brown, anterior lobe rounded, yellow, with marginal brown spots. A specimen in the collection of E. J. Partington, Esq., Heaton House, Cheshunt, 4 feet high, bore a panicle containing 175 expanded flowers. *Orchid Album*, t. 202.

### LÆLIA CRISPA.

On page 214 of August 15, I see "B. T. L." finds this plant "not easy to manage." I cannot agree with this, and as it it one of my pet Orchids, permit me to defend it. Treat the plant like L. purpurata and it will thrive. It has always been, to my mind, a regularly conducted species as to its flowering. We count on its blooms at a stated time almost as if it were a calendar point. *De B. Crawshay.*

### EPIDENDRUM PRISMATOCARPUM.

I have lately had a plant of this in bloom (of which I sent you a spike with forty blooms), with twelve spikes, carrying respectively 24, 26, 30, 31, 33, 35, 39, 40, 41, 41, 41, and 43 blooms. I think "B. T. L." underrates this fine species when he says, at page 295, it "bears from eighteen to twenty flowers." My plant, though a very fine one, has narrow lips, yet more than one good judge has pronounced it to be the finest they ever saw. I hope "B. T. L." will pardon a correction, as I feel sure he would not like to misrepresent Orchids. *De B. Crawshay.*

### ONCIDIUM ROGERSI.

Mr. Lee has found out how to grow this plant. Tie it down to a board, hang it up horizontally near the glass, and keep it wet. So treated it grows well, and flowers abundantly. It will not do either freely if treated otherwise.

### MASDEVALLIA CHIMÆRA.

Accompanying a figure of this remarkable species in the *Orchid Album*, t. 203, we find the following suggestive hints as to the culture:—"We find the plants of this group of Masdevallias to thrive best in baskets, or in a kind of boat-shaped arrangement, made after the manner of a basket, with a semi-circular bottom and wooden ends, as their flower-spikes often protrude between the woodwork; it is indeed natural to some of the species to bloom in this way, which also shows the flowers off to better advantage. The basket should not be large—just a little larger than the plant; and as a compost, rough fibrous peat on a little sphagnum moss seems to suit them, with sufficient drainage to admit of a good supply of water being given in their growing season. Even when at rest the material should be kept moist, as they have no thick fleshy pseudobulbs to support them, which makes them impatient of drought. They thrive best suspended from the roof, but shaded from the sun, as the leaves are apt to get scorched and turn yellow if exposed. The cool Odontoglossum-house suits them, but we keep ours in the warmest part of it. They are propagated by dividing the plant when in vigorous health. It is very necessary to keep these plants free from insects."

### ODONTOGLOSSUM KRAMERI.

This species, described by Professor Reichenbach in our columns in 1868, is figured in the last number of the *Illustration Horticole*, t. 562. The flowers are borne in racemes from the base of the roundish two-edged pseudobulb. Each flower is flattish, 1½ inch across, with white oblong segments; lip narrow at the base, dilated in front, with a reniform blade, white, flushed with pink. It is a native of Costa Rica.

## HOYA GRIFFITHII, HOOK. F.*

THIS very fine species was sent to me (through the Editor of the *Gardeners' Chronicle*), in July, 1879, by Mr. W. Swan, of Fallowfield, Manchester, for a name. At that time it was undescribed, and it was intended to figure it in these columns, but a good specimen was not forthcoming, and now a specimen has been again received from the same source, and will be figured in the *Botanical Magazine*; but as the plate may not appear for some time, I take the opportunity of calling attention to it here, as it is one of the finest species in the genus. It is a native of Khasia, in North-eastern India, where it was originally discovered by Griffith, and afterwards collected there at an altitude of 2000 feet, by Sir Joseph Hooker. Concerning the plant in cultivation, Mr. Swan, writing in 1879, states that it "was sent with a quantity of Orchids, &c., about three years ago, to Mr. Leach, from "Northern India."

Hoya Griffithii is a large climbing species, with oblong leaves 3½—6 inches long, ¾—1¼ inch broad, narrowed to an acuminate apex and an acute base, glabrous, as is the entire plant, bright green above, paler beneath. Peduncles stout, 2 inches long; pedicels 1½ inch long, stout. Calyx segments spreading, green, ½ inch long, 2—2½ lines broad, oblong obtuse, concave from the margins, being strongly incurved. Corolla when expanded about 1¼ inch in diameter, pale reddish outside, cream-coloured, tinted with the same reddish hue inside; the lobes are broadly ovate, acute. Corona waxy-white, the segments elliptic in outline as seen from above, with ascending subulate apices, the sides are perpendicular with the upper edge overhanging at the back, and beneath at the base they have a Λ-shaped notch.

This species is at once well distinguished by its unusually large calyx segments. The rather delicate red tint of the corolla is somewhat difficult to describe intelligibly, but perhaps the nearest well-known colour-tint is that of red blotting-paper diluted. *N. E. Brown.*

* Hoya Griffithii, Hook. f., in *Hook. Flora Indica*, vol. iv p. 59.

# Florists' Flowers.

## THE GLADIOLUS.

We were again favoured with a very fine display of this beautiful autumn flower at the Crystal Palace exhibition on September 4 The amateur growers did not come out in great numbers, but those who did exhibit had reason to be proud of their productions. Perhaps the best dozen spikes ever exhibited by an amateur were those that easily gained the first prize to the Rev. H. H. D'Ombrain. I question if it would have been possible to have picked a dozen such spikes out of the large trade collection adjoining. One spike of the good old variety, Meyerbeer, had thirteen open flowers on it. Murillo was superb; it is a fine variety, the flowers large in size, well formed, of a rich rose colour, flaked rosy-crimson. Leander, soft pale lilac, a delicious contrast to the more richly coloured forms. Flamboyant, rich vermilion; Hesperide, pale salmon, densely striped rosy-salmon. Besides the above, which were of great merit, the same exhibitor received a First-class Certificate for Rabout, a very fine seedling, of a distinct pale lilac colour, flamed purplish, a long spike with well formed flowers.

Messrs. Kelway, of Langport, exhibited some very distinct seedlings in their large collection. Three of them being awarded First-class Certificates, viz.:—Princess Maud, the best and most distinct of the trio; it has large flowers well placed on the spike, the colour is rosy-purple, with a white line, or band of white, in the centre of each segment; there is also a white blotch on the lip. Dora Thorne, straw colour, with reddish flame and a reddish blotch on the lip. Lord R. Churchill, vermilion, with botch of lake at the lower part of the throat.

The 1st prize in the large class was again won by Mr. Alex. A. Campbell, florist, Gourock, N.B. The collection as a whole was inferior to that exhibited by him last year; but it contained some splendid spikes, mostly of the older French raised varieties. Indeed I was greatly surprised on comparing some of the older varieties, such as Meyerbeer, Horace Vernet, Celimène, Mons. Legouve, Norma, Orpheus, &c., which can be purchased at 6*d.* to 9*d.* each, with the new ones at from 6*s.* to 10*s.* each; and did not find any points in favour of the recent introductions. It is some satisfaction to intending cultivators to know that a good selection can be made at from 6*s.* to 12*s.* a dozen. In Mr. Campbell's collection I noted Marquis of Lothian, a variety raised in Scotland; it is of a rich lilac colour, has a very handsome spike, and so easily propagated that Mr. Campbell has increased his stock of it to 1600 bulbs. Ondine, a distinct white, with violet-purple blotch, is sold at 10*d.* a bulb; and Belladonna, which I marked as the best formed flowers with handsome spike, is sold at 1*s.* 6*d.* for good bulbs. This is all evidence that a good collection can be formed by those to whom even an extra shilling or two is an object. In looking over a collection such as this one naturally forms the different varieties into groups of allied colours, and I found amongst those comparatively cheap varieties ample material to produce seedlings of first-class merit. Murillo, for instance, which would have gained the premium as the best spike in the show, is one of the cheapest. Leda is in the same class, and very fine. Lulli, Lady Bridport, De Mirbel, and Orpheus are six cheap varieties that cannot be matched for quality amongst the best new ones of allied colours. Of the deep red, crimson, and scarlet shades Horace Vernet still stands first. Maréchal Bazaine is a distinct and striking kind—scarlet and white. Le Vesuve is not a large kind, but of dazzling brightness. Of the white or blush-white kinds Ondine ought to be the parent of some grand white varieties if used as a pollen parent for crossing with Madame Desportes, Princess Mary of Cambridge, and Norma. It is now late to hybridise the flowers, but it would depend much upon the weather during the remainder of September and October; if it is dry and not too cold the seeds will ripen. In cold districts it is best to plant early where it is intended to obtain seeds from the plants. *J. Douglas.*

# Fruits Under Glass.

## THE EARLY VINERY.

Early forced Vines, such as were started last December and January, will by this time be in a fit condition to be pruned, and if the Vines are to be forced again the ensuing season, the sooner this operation is performed the better. If at any time doubt should exist as to the fitness of Vines to be pruned, it can at any time be readily removed by means of cutting back a growth or two on each Vine; if bleeding does not ensue, the pruning can safely be done. When this matter is completed, the cleaning of the Vines should be effected. This is an operation which in late years is considerably altered in practice, as formerly it was customary, generally speaking, to remove every particle of bark possible off the Vines, and then smear them over with mixtures composed of different ingredients, which in most instances, in the course of syringing when forcing was commenced, was washed off again. But now-a-days the method (very properly in my opinion) is nearly abolished, and is substituted by one more consonant with the requirements of Nature, by simply washing them with a brush, with a strong solution of soft-soap and water, merely removing the loose bark, and giving the Vines the benefit of the rest, for the purpose which was intended by Nature. In certain cases, as for instance where the Vines are infested with mealy-bug or thrips, more severe measures must of necessity be employed. The next operation demanding attention here will be the cleansing of the structure so as to free it from insect pests. This year, owing to the favourable nature of the season for the increase and diffusion of insects, the matter will need even more than ordinary care and attention. Firstly, the woodwork of the structure should be washed with strong soft-soap and water, and then be painted — painting is one of the best means to adopt under the circumstances. The walls also should be washed over with hot lime water, in which a little paraffin oil should be mixed. Subsequently take away one, two, or three inches off the surface of the borders, taking care not to injure more than possible the roots which abound there, because these, after the new material it is added, and the effect of forcing is felt, will speedily be excited into growth again, and become active feeders, the effect of having a congenial medium to work in. When the foregoing operations are completed, keep the house open, unless the weather is exceptionally severe, until the time arrives when forcing operations are to be commenced, which now-a-days, owing to the excellent means adopted for keeping late Grapes, need not be enforced before the beginning of December at the earliest. *G. T. Miles, Wycombe Abbey.*

# The Hardy Fruit Garden.

Where a large area of ground is devoted to hardy fruit cultivation much attention will have to be given to the storing, and in some cases to the marketing of the fruit. It is no use storing away great quantities of early varieties of Apples or Pears; and Plums are more perishable still. All of these should be packed for market before they are over-ripe; the firmer they are packed the better they travel. It is much better to err on the safe side, by packing very firm, as the contents will always bear a journey best when the hampers are securely packed. Many varieties of the above will require going over almost every day, and picking off the largest and best each time. Last week we went over a large number of Plum trees (Victorias), and gathered all the largest and ripest only; to-day those that were left have been gathered, and they have swelled and ripened off considerably. Had they been gathered last week they would have been almost worthless through being so small and deficient in colour. The same rule applies to Apples and Pears, although it may not be so perceptible in such a short time.

Flies and wasps are often very destructive during this month to ripe and ripening fruit, not only from the amount they eat, but also from what they damage render unfit for storing, or selling. A very simple method of destroying them is the well-known plan of fixing two hand-glasses one on the top of the other, with a small hole in the top of the bottom one. They fly up, and cannot find their way out again. Some small and half-decayed fruit should be placed under the lights every day.

## WALL TREES.

Wall trees should be looked over weekly, and all secondary shoots that may have pushed out removed—not cut back, but entirely removed—as after this date there is not much danger of the trees making another growth.

## ORCHARDS.

Those that require filling up or renovating should now be thoroughly overhauled; and where it is intended to plant young trees in established orchards where trees have died, or where unsuitable varieties are to be replaced, great care should be taken to have all old roots and stumps removed, and the ground for a certain distance well trenched and broken up, always leaving the bottom spit, but breaking it thoroughly up, and when required adding manure. Where possible it is always advisable to add a cart-load or two of fresh soil round each tree. For planting enclosed spaces, where the ground can be kept under cultivation, I much prefer planting pyramid or bush Apples on the Paradise, and Pears on the Quince stock. Where planting is intended during the autumn it is always advisable to pay a visit to some good fruit tree nursery early in the autumn. There is no doubt that early autumn is the very best time to plant fruit trees where the ground can be got ready to receive them. *J. Smith, Mentmore, Bucks.*

# The Kitchen Garden.

## ONIONS.

The spring sown Onion crop, if not already pulled up, and preparations made for storing the bulbs, should now receive attention during favourable drying weather. The bulbs are not so large as usual, but firm and sound, and will keep well. In the first instance the crop should be looked over and all stiff-necked bulbs removed from the bulk; these should be placed aside for immediate use. The tops are not gross this season, and a few sunny days after the bulbs have been pulled up and laid out, will render them fit for storing. After the tops are dried they may be reduced according to the method of keeping them through the winter. If they are placed on the floor of an airy loft the tops may be cut off much shorter than for bunching or roping.

## AUTUMN CABBAGE PLANTING, &C.

It is an old practice to place the above crop (at the end of September) on the ground from which the spring sown Onions were cleared. Wherever they are placed the ground should be well enriched with farmyard or artificial manure. When time admits the plants are best placed in shallow drills. After the plants have made a little growth, the drills can be filled in when hoeing, and the additional soil about the plants will protect and steady them. Such dwarf and compact varieties as Ellam's Early may be allowed 1 foot from plant to plant, and 16 or 18 inches between the rows; larger growing varieties 18 inches each way.

After the nice rains, and when the plants are dry, some Celery for early use should be earthed-up. Clear off all the short leaves and offsets from the base of the plants. They should then be temporarily tied up as near the top as possible with broad pieces of matting. Two workmen will accomplish this best, one to gather up all the leaves into their proper position, whilst the other ties on the matting. The soil should then be fined down into the trench to the required height and the matting removed. Young Turnips are now making up for lost time, and they will require watching in order that fly or slugs do not devour many seedlings and cause blanks. The above, in conjunction with winter Spinach, should be thinned as soon as large enough; both crops are backward owing to the drought. *G. H. Richards, Somerley Gardens, Ringwood, Hants.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| MONDAY, | Sept. 14 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| TUESDAY, | Sept. 15 | Annual Sale of Heaths, &c., at the Burnt Ash Nurseries, Lee, by Protheroe & Morris. |
| WEDNESDAY, | Sept. 16 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Heaths, at the Lea Bridge Nurseries, Leyton, by Protheroe & Morris.<br>Sale of Flowering, Established, and Imported Orchids, at Stevens' Rooms. |
| THURSDAY, | Sept. 17 | Sale of Heaths, at the Brunswick Nursery, Tottenham, by Protheroe & Morris.<br>Sale of Dutch Bulbs and 13,000 Tuberoses, at Protheroe & Morris' Rooms. |
| FRIDAY, | Sept. 18 | Trade Sale of Imported Orchids, at Protheroe & Morris' Rooms.<br>Annual Sale of Heaths, at the Longlands Nursery, Sidcup.<br>Sale of Dutch Bulbs, at Stevens' Rooms. |
| SATURDAY, | Sept. 19 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE main features of the week, so far as the metropolis is concerned, have been the exhibitions of DAHLIAS and FRUIT at the Crystal Palace and the Royal Horticultural Society respectively. Show Dahlias have arrived at such a pitch of perfection in certain lines that little can be said of them beyond this, that Messrs. COMPOSITE & CO maintain their old reputation, and that Messrs. SIMPLEX BROTHERS have justified the increasing admiration that is felt for single Dahlias. Form, substance, colour, size, all seem to have arrived at this limit of perfection, and what we see exhibited are mere kaleidoscopic variations of what has been seen for many years past. So much was this felt at one exhibition, that the body of experts constituting a special sub-committee approached the general body in a somewhat deprecatory fashion, and uttered a judicious caution respecting the granting of Certificates, and uttered a discriminative note of warning as to the difference between exhibition varieties and those to which the prefix "decorative" should be applied. The general public will be slow to appreciate a degree of difference which will be keenly felt by specialists, but which after all is of some importance, because, while it is undeniable that the difference is real, and that while the exhibition varieties, so called, are likely to be the best according to the standard followed by the experts, yet that the merits of such flowers are not to be judged simply from the exhibition standard, because they exert a secondary influence on the so-called decorative varieties, and raise the standard of such flowers likewise. It is satisfactory also to see that some attempts are being made to break away from the old lines, and to introduce new forms and fresh sources of attraction. This is manifest in the new race of Gladioli, as seee in G. Lemoinei, the result of the crossing of G. purpureo auratus and others, and in the increasing numbers of the so-called Cactus Dahlias of the Juarezi type. These latter do not at present satisfy the strict exigencies of old Dahlia lovers, but there is no doubt that they are looked on with favour by the public, and that when "improved" by the art of the florist they will ultimately take a high place. When we say "improved," we mean judiciously improved by the adoption to a reasonable extent of the florists' rules, but not to such an extent as to ensure that rigid formalism so dear to the typical florist of the old school, so offensive to the eye of the artist and physiologist. Life, the evidence of adaptations to the struggle for existence, confer a degree of beauty, and especially of interest, which no mere geometric formalism can ever supply.

Another feature of the week has been the display of Grapes. These have the keenest interest for gardeners, and deservedly so. In the judging of Grapes, too, at our metropolitan exhibition, it is gratifying to observe the judicious practice that is followed. No mere size of bunch or berry is allowed to outweigh more solid attributes of ripeness and finish. The premiated bunches are not the biggest, but, as a rule, they are unquestionably the best as regards quality—and quality in this case means flavour. It is comparatively easy to secure sensational bunches, but the care required to put on the exhibition table exquisitely finished samples such as were to be seen at South Kensington is quite another matter. It would add greatly to the practical value of these displays if the Royal Horticultural Society would institute competitive examinations of the vineries at a given time; competent judges might be appointed to visit the graperies entering for competition, and adjudicate, not upon one particular bunch of one Grape, but upon the general condition of the crop. Of course, it would be impracticable to do more than deal with generalities, as the conditions would be so different in different establishments. Still, with a little care and judgment it would be quite possible to arrive at satisfactory conclusions, and a healthy impulse would be given to Grape culture apart from the display of picked samples on the exhibition table. Even on the exhibition table there is room for improvement in the mode of display. It would add immensely to the popular interest, and would, moreover, be useful in the matter of identification, if foliage and ripened wood were exhibited with bunches of each variety. One exhibitor to whom we mentioned this matter replied, "Ah! but that is just what I did on one occasion, and have reason to believe that it acted prejudicially to me." We can conceive the possibility of this, but if it were so it would be obviated if all competitors were desired to exhibit in the same manner, and to specify in particular whether the foliage came from the same cane as that on which the bunches were produced, or was taken from another—possibly less productive rod.

Another very important matter was brought before the gardener on Tuesday last in the competition for the best method of packing Grapes to send to a distance. On former occasions we have figured various methods of packing which have been found meritorious, but on this occasion there was a general consensus of opinion that the very best method of packing Grapes for transit was the simplest. A shallow basket, tapering slightly to the bottom, and with a stout arched handle crossing it in the middle, was found to be the best. The Grapes are lightly placed around the sides of the basket, the centre being filled up with other bunches. The tapering form of the basket allows the Grapes to slide down gently into position, and to accommodate themselves to the space to be filled, without the intervention of moss, wadding, or any other packing material whatever. A few withies may be bent lengthwise over the basket beneath the handle, so as to prevent any stray article pressing on the Grapes. The contents of the basket being known, and the basket lifted, as it must be almost of necessity, by the handle, ensure the precious freight being carefully handled, and passed from hand to hand, instead of being unceremoniously pitched about, as is the case with closed boxes.

So many of the complaints made by gardeners as to the low price their productions fetch in the market depend upon the mode of packing, that we call special attention to this matter. Gardeners who pack produce, often of a superior quality, have little idea of the state in which their cherished productions arrive in the market, and in seeking a remedy, in this case as in so many others the simplest is best. Had we not seen this repeatedly we should ourselves have feared that so simple a means of packing as what we have described appears would have been as ruinous as it proves by daily experience in the market to be satisfactory.

—— ANEMONES IN SEPTEMBER. — We owe to Mr. BURBIDGE the pleasant surprise of receiving a box of large-flowered double Anemones such as one might expect to see in spring. Mr. BURBIDGE tells us that unless the winter prove very severe the plants may be expected to bloom continuously until next June. These flowers are from seed sown in March of this year, so that they are only about six months old. "St. Brigid," to whom horticulturists owe this strain, has thereby earned their gratitude. The following directions for their culture show that, as with most other good things, the method of management is simple:—

"For winter bloom, choose a sunny, open spot; put on a good dressing of rotten manure—cow-manure is best—and dig well, covering the manure at least 5 inches deep; and as soon in February as the surface of the ground is dry and friable, sow the seed (this must first be separated by rubbing with a quantity of sand), taking care to distribute it as thinly as possible—it is almost impossible to sow too thin. Keeping clean from weeds, and an occasional watering during very dry weather, is all the after-attention they will require. Bloom will commence in October, and continue through the winter and spring months. They are best not transplanted. For spring and summer flowering, plant bulbs in autumn and spring. They can also be transplanted quite safely, although in full flower; if carefully watered for a few days, they will not go back in the least. Thus those who wish flowers at once can secure them."

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We have received the following communication from Mr. E. CUTLER:—"I beg to inform you that I have received a letter from the solicitors to the estate of the late J. S. LAW, Esq., of South Lodge, Enfield, stating that he had left a legacy of £100, free of duty, to this Institution, which will be paid in the usual course."

—— "FLORE COMPLÈTE DE LA BELGIQUE."—We have received a copy of this volume, prepared by M. A. DE VOS, and which is so good and likely to be so useful, that we can now only mention its publication, and defer fuller notice till we can do it more justice.

—— TURNER MEMORIAL PRIZES.—At a general meeting held in the Conservatory at South Kensington on Tuesday last, SHIRLEY HIBBERD, Esq., in the Chair, a committee of seven persons was appointed to carry out the project. The committee so constituted consists of Messrs. H. VEITCH, G. PAUL, HY. GLASSCOCK, J. JAMES, G. T. MILES, H. CANNELL and Dr. MASTERS, together with SHIRLEY HIBBERD, Chairman, H. POLLETT, Treasurer, and J. DOUGLAS, Secretary. More than £100 was announced, and various suggestions made as to the scope of the Memorial, which it is desired to make as general as possible.

—— WOOD'S PATENT BOILER.—Mr. WOOD, hot-water engineer, Eastville, Bristol, has been awarded a Gold Medal for his greenhouse and kitchen range boiler, from the Inventions' Exhibition, also a First-class Certificate from the Bath Industrial Exhibition. Several advantages are claimed for these boilers—economy in fuel, combined with great heating power, and the facility with which the tubes can be cleaned out without disturbing the setting; and, moreover, skilled labour in stoking is dispensed with. Being on slow combustion principles, the fire may go without attention from eight to nine hours.

—— THE KING OF THE PUMPKINS.—The heaviest Pumpkin (according to M. DE VOS), presented at the Paris market in 1884 weighed 130 kilogrammmes. Translanted into English, this means that the Gourd in question weighed about the same as twenty-eight legs of mutton of 10 lb. each.

—— THE JUDAS TREE.—The hot summer has sufficed to ripen the pods of this singular and beautiful tree, and to give them a richness of colour we do not often see. The pods as they hang are now more brilliant than the flowers to which they succeeded.

—— THE STRAWBERRY GRAPE.—Apart from its peculiar flavour, the Grape is worth growing for the sake of its foliage. The leaves are well suited for table decoration, and assort better with the ordinary furniture of the table than to the more deeply cut leaves of other sorts.

—— THE COAST FLORA OF JAPYGIA. — In the *Journal of the Linnean Society* Mr. HENRY GROVES, of Florence, gives an interesting account of the flora of the province of Lecce, better known as Otranto. It is a low-lying district, producing abundance of Scilla maritima, and where Chicory and the bulbs of

Bellevalia comosa form articles of food, and the leaves of Heliosciadium nodiflorum, usually considered poisonous, are eaten as salad; Juncus acutus is made use of for fish-pots, while Schœnus nigricans is made available for ropes; Clematis balearica finds its Western limit here; Crocus Thomasii, an autumn-flowering species, occurs abundantly near the Gravina di Leucaspide, near Taranto.

themselves at the nodes, by which the plant may be propagated. It is clear, then, that the reserve food and growing power of the old bulbs are not exhausted.

—— RHODODENDRON KOCHII, STEIN, *Garten-flora*, July, tab. 1195, is a Philippine Island species, with stalked, lanceolate, acuminate leaves and trusses

Erith. The wood was found in the lower part of the stratum with flint-flakes. Rhinoceros bones have been found in the same pit. Mr. RIDLEY's note is confined to the mere announcement of the discovery, but much more is needed to substantiate a discovery of so interesting a nature.

—— LARGE TURKEY OAK.—W. H. DUNSFORD,



FIG. 74.—HOYA GRIFFITHII (SEE P. 334.)

—— ORCHID PRUNING.—A good deal of information is likely to be gained incidentally by the discussion of this subject. Some people ask whether the old pseudobulbs are of any use; because, if not, they might be cut away. At Mr. LEE'S the other day we saw the use to which they, or some of them, are put in that establishment, where the requirements and peculiarities of Orchids are so thoroughly met and understood. The bulbs of Dendrobium nobile nobilius are tied down horizontally to a board just as babies are in some countries still, and hung up near the glass, kept in suitable temperature, and with sufficient moisture, when, after a little, buds present

of white Jasmine-like flowers. In the same number a much smaller species with rosy-pink flowers, reminding one of R. hirsutum, is also figured. It grows on the volcano of Apo, in the Philippine Islands.

—— THE SWEET CHESTNUT A NATIVE OF BRITAIN.—In the August number of the *Journal of Botany* Mr. RIDLEY gives some reasons for supposing that this tree (Castanea sativa) was at one time native to Britain. Mr. RIDLEY'S "conclusive evidence" is derived from a small fragment of the wood which he obtained in a brick-earth pit near

Esq., of Ashley Court, Tiverton, possesses one of the finest Turkey Oaks known to us. It is growing on an elevation overlooking the lawn and tennis court. Ninety feet is about its height, and 180 feet around; its huge trunk is straight and free from limbs to a height of 8 or 9 feet, where it forks away on every side, forming a particularly handsome tree.

—— GRINLING GIBBONS.—The following reference was made in one of Mr. HUNGERFORD POLLEN'S lectures on wood carving before the Society of Arts:—"The carver whose name is associated more particularly with the name of WREN is GRINLING

GIBBONS. He was first heard of by EVELYN, in 1670. A pot of flowers which he did outside of his window in Belle Sauvage Court was so delicately carved that the leaves and blossoms shook with the rumbling of passing coaches and carts. The carving of GIBBONS consists of hanging-swags, composed of fruit and flowers, with birds and animals among them. There are examples to be seen over the communion tables of St. Paul's Cathedral and of St. James', Piccadilly, where the marble font, with figures of Adam and Eve, is by him; over the doors and chimney-pieces of the state rooms at Hampton Court, where also the carved mouldings, by other hands, are well worth careful examination. Chatsworth House and Petworth House, in Sussex, have excellent examples of the best carving of GIBBONS. These carvings surround a series of full-length portraits. They represent hanging trophies of the attributes of the seasons, including ears of bearded Wheat, cut with the utmost delicacy; musical instruments, with low reliefs on their surfaces; medals, one said to represent GIBBONS himself; lace Steinkirk cravats, classic vases, with figure work on their sides; an immense variety of objects."

—— NATIONAL PEAR CONFERENCE, 1885.—Suitable "Forms," have been prepared by the committee of the National Pear Conference, and may be had by intending exhibitors on application to the Secretary, Mr. A. F. BARRON, Royal Horticultural Garden, Chiswick, W. It is hoped exhibitors will make their returns as complete as possible. In order to insure uniformity in the naming of the fruits exhibited, and to obtain as much precise information as possible on individual fruits, a "card" has also been prepared by the committee and will be supplied to all exhibitors on application. Exhibitors are requested to make application to the Secretary before October 14 next, stating the exact number required.

[FORM TO BE FILLED UP BY EXHIBITORS.

NATIONAL PEAR CONFERENCE, 1885.

Exhibitor's Name and Address _____

Number of varieties exhibited _____

*Situation where grown, sheltered or otherwise, aspect, &c.* _____

*Character of soil, subsoil, &c.* _____

SELECTION OF VARIETIES MOST SUITED TO DISTRICT, ARRANGED FOR THE FOLLOWING SEASONS, VIZ.:—

July and August, 3 varieties _____

September .. .. 3 varieties _____

October .. .. 6 varieties _____

November.. .. 6 varieties _____

December.. .. 6 varieties _____

January to March, 6 varieties _____

SELECTION OF VARIETIES SUITED FOR ORCHARD CULTIVATION, NOT EXCEEDING 12:—

_____

*Selection of Stewing Pears*, 4 varieties _____

General remarks, as to mode of cultivation, pruning, stock, &c. _____

[FORM OF CARD TO BE ATTACHED TO EACH DISH.]

Name _____

Season _____

Average Fertility _____

Stock _____

Description of Tree _____

—— THE WEST INDIAN CEDAR (CEDRELA ODORATA).—This tree is a native of Jamaica, Cuba, Antigua, Mexico, &c., and grows to a height of 80 feet or more, with a diameter of from 3 to 5 feet. It is a near ally to the Mahogany, to which the wood has some resemblance, though it is softer, rather more open-grained, and not so durable; nevertheless, when properly seasoned it is a valuable wood, and has an agreeable fragrance, very unlike that of the fresh plant. It is used for wainscoting, cabinet work, drawers, &c., as it is stated that no insects will attack it, on account of its scent. Shingles made of it are reported to be very durable, and they, moreover, have the advantage of lightness. LUNAN, in his *Hortus Jamaicensis*, says, "The trunks of the trees are often so large as to be hollowed out into canoes and periaguas, for which purpose it is extremely well adapted, as, from the softness of the wood it is hollowed out with great facility, and being light it carries great weight on the water. Canoes have been made of it 40 feet long and 6 feet broad." It is from this wood that the Cuba cigar boxes are made, and the wood is also imported into Hamburgh in logs for the purpose of making boxes for holding German-made Havanas: these boxes are made in exact imitation of those which come direct from Cuba. The wood recommends itself for this purpose on account of its even grain, freedom from knots, and its non-liability to split or crack, and also on account of the ease with which it can be cut into thin planks, suitable for box making. Three remarkable logs of West Indian Cedar were recently landed at the West India Docks from Cuba, our attention having been drawn to them by Messrs. CHURCHILL & SIM, of Clement's Lane, to whom they were consigned. These logs were from the bases of three separate trees, and were each of pretty nearly similar bulk, measuring about 7 feet high, and 3 feet or more in diameter. They all had their bark removed, and their peculiarity was that instead of the grain running up and down or perpendicularly it ran round the trunks in a spiral manner. So distinctly defined was the course of the grain that the logs attracted the attention of the habitual workers on the timber wharf, and one of the attendants who cut off a few chips for us from what in an ordinary trunk would have been the transverse section remarked, that in order to obtain a section showing a longitudinal grain it was necessary to cut it across the trunk. The three logs were sold by Messrs. CHURCHILL & SIM to Messrs. W. OLIVIR & SONS, of Bunhill Row, who obligingly cut for the Kew Museum a large slice from one of the trunks. From this it would seem that the arrangement of the woody fibres of the trunk was in their younger state quite normal, but after they had attained about half their full diameter the course of the grain changed from a perpendicular to a spiral direction, so that in planning what must for convenience be called a longitudinal section the course of the grain was cut through at three different angles. A section cut across the trunk showed no decided rings, but a continuation of a longitudinal grain running round the trunk. These logs, though curious, would be almost useless for working, in consequence of the continued crossing of the grain.

—— TURNIP-ROOTED MUSTARD.—The *Revue Horticole* mentions a Chinese Mustard with roots like a Turnip, the leaves of which may serve as forage. The root is stated to be of agreeable flavour. According to the analysis given the roots contain:—

| | |
|---|---|
| Starch .. .. .. .. .. | 1.1 |
| Albumen .. .. .. .. .. | 4.2 |
| Fatty matters .. .. .. | 1.7 |
| Incrustating matter .. .. .. | 2.4 |
| Mineral matters .. .. .. | 4 |
| Water .. .. .. .. .. | 87.7 |
| | 100 |

The plant has been introduced into France from Pekin by Dr. BRETSCHNEIDER. We have not yet heard of its introduction here, but it would seem to be a valuable introduction and well adapted for our climate.

—— WOTHERSPOON'S HORIZONTAL TUBULAR BOILER.—At the last meeting of the Royal Caledonian Horticultural Society in Edinburgh the above boiler was unanimously commended by the judges, who also expressed a wish to see it at work.

—— GARDENING APPOINTMENTS.—Mr. JOHN GREEN, late Gardener to W. P. COSIER, Esq., at Wilmington Hall, Dartford, Kent, has been appointed Gardener to J. B. LEE, Esq., Sonning, Reading, Berks.—Mr. CORNELIUS PRICE, late Foreman in the Gardens, Powderham Castle, Exeter, has taken charge of the Gardens of the Earl of LISTOWEL, Convamore, County Cork, Ireland.



## THE NARCISSUS FLY.*

THE Narcissus-fly (Merodon equestris) fig. 75 is not a new discovery. It is described by Réaumur in his *History of Insects*, published in 1738, as well as by Fabricius, the pupil of Linnæus, in his *System of Entomology*, written near the end of the last century. About forty years ago the damage caused by it to the Daffodil growers of Haarlem attracted public attention, and from that time the insect seems to have become naturalised in Holland. The present monograph has been written at the request of Mons. J. H. Krelage, of Haarlem, who supplied materials for laborious and exhaustive investigations recently made by Dr. Ritzema Bos, the results of which are contained in fifty octavo pages, accompanied by illustrations. This monograph, reprinted from the Archives of the Teylerian Museum at Haarlem, has just been sent by M. Krelage to the members of the Narcissus committee of the Royal Horticultural Society.

The Narcissus-fly is indigenous to Italy and other parts of the South of Europe, from which it has been introduced in imported bulbs—chiefly those of N. Tazetta—to Holland and England, in both of which countries it has in some measure established itself. It suffers, however, from the effects of severe winters, after which there is for a time a marked diminution in its ravages. The appearance of the perfect insect is not unlike that of a small and rather slender humble-bee with two wings. Like the plants upon which it feeds, one species runs into many forms. The colour and markings vary much. In one of the illustrations we have coloured figures of seven different types. The generic name Merodon (with toothed thigh) is explained by another figure. We should infer from its specific name that it has the habit of settling upon horses, but Dr. Bos does not inform us on this point, telling us, however, that it is partial to honey. It lays its eggs, one or two together, at the base of the full-grown Narcissus leaf in June. The larva, when hatched, makes its way down into the interstices of the upper scales, and feeds towards the heart of the bulb. The grubs are full-grown, or nearly so, in November, but it is not quite certain when they undergo their next transformation. It is thought that many remain dormant during winter, and complete their growth in early spring, when they eat their way out of the bulb, generally at the base, and mount upwards through the soil, entering the chrysalis stage near the top of the bulb, but outside it. The fly comes out in May.

Besides the mechanical damage to the structure of the bulb which the larvæ cause with their mouths, they excrete an acid which causes the neighbouring parts to rot; so that even if a Daffodil attacked by them flowers in spring, the floral axis having escaped unhurt, still the flowering is stunted and unhealthy, and no subsequent growth is made. The decomposed portion of the bulb is found to be full of bacteria not unlike those which are known to cause the very destructive Hyacinth-rot. Dr. Bos tried, by experiments on sound Daffodils, whether these bacteria are capable of developing rot in healthy subjects, and concluded that they are harmless, merely occupying the parts already decomposed by the larvæ of the Merodon. Dr. Bos also tried many experiments, the result of which he gives in detail, to determine the best way of getting rid of a pest which threatened to become so serious to growers of Daffodils. He believes that the simplest he tried is also the most efficacious. It is to immerse in water all bulbs for a space of eight days before planting. This, he assures us, may be done without danger of injury to the bulb, and with the almost certain result of killing the larvæ, which in August, when Daffodils ought to be planted, are small, and near the crown, and have as yet done little or no injury.

It seems doubtful whether the Merodon could maintain a permanent footing in England—at any rate in the colder parts of it—unless reinforced by fresh importations; so that we may hope to be able to look upon it more as an object of interest to the naturalist than a pest to the gardener. *C. Wolley Dod, Edge Hall, September 5.*

* *La Mouche de Narcisse (Merodon equestris).* By Dr. T. Ritzema Bos. Haarlem, 1885.

# HOME CORRESPONDENCE.

**The Proposed Edinburgh Fruit Show.**—We hope to get together a thoroughly representative exhibition of the Apples and Pears grown in Scotland, as well as a good selection of the best Apples and Pears grown in other parts of the United Kingdom. The date of the exhibition is rather late, but there are several reasons why it could not be fixed for an earlier date. First, our Apples and Pears in Scotland are not generally fit to gather till the latter half of October; second, the Royal Horticultural Society's Pear Congress comes off at that time, and we did not wish to run in opposition to it; and third, the new winter show of the Royal Caledonian Horticultural Society was fixed last spring for the date chosen, November 25 and 26, and we did not care to spoil it by holding another fruit exhibition a week or two before it. At the date fixed upon, we shall still have the most of the early Apples and Pears, grown in Scotland, in fair condition; and we must just take what we can get from our more favoured Southern friends. There is a very good list of prizes offered for fruit at the new winter show, which may induce a good many of our friends from the South to compete, as well as to exhibit their specimens at the Conference. *Scotus.*

**Mildew on Plants, Aphis, and Red Spider.**—Some months ago an article appeared in the *Gardeners' Chronicle* from the pen of Mr. Edmund Tonks, B.C.L., on the merits of sulphide of potassium as a remedy for mildew. I was struck by Mr. Tonks' statements, and knowing him to be a careful observer I thought I would take some pains to get his observations tested, and accordingly I arranged for samples of the sulphide of potassium to be forwarded to a number of our best gardeners, and at the same time drew their attention to Mr. Tonks' article. I felt that if the sulphide of potassium should prove to be as efficacious as Mr. Tonks represented in destroying such a universal pest in our gardens as mildew, I should render some service to gardening generally by getting assurance of its merits from those most competent to judge, and should then feel at liberty to make its merits widely known by the aid of the gardening journals. I am now enabled to send two testimonies to the efficacy of this remedy, which I am sure will at once arrest attention. The first is from Mr. Coleman, of Eastnor Castle, who says:—

"I have given the sulphide of potassium a fair trial, and the excellent effect it has produced is more than satisfactory—it is marvellous. The first trial was made on old winter Cucumbers, badly infested with mildew. One syringing nearly cleaned them, a second completely destroyed the pest. This was in April, and the plants still (August) remain clean and healthy. The second attack was made on red-spider, also on Cucumbers. Two dressings destroyed the spider, and the plants were in no way injured. The third and most important trial was made on an old Vine attacked by spider and mildew, and although my stock of sulphide ran short the result was equally satisfactory. On Saturday last a young Melon plant, infested with a very troublesome pest, black aphis, was well syringed. The plant is now clean, and growing freely."

Mr. Coleman then proceeds to state that he intends trying the new remedy on Hops, and will report the results in due course. I am glad to be able to add to the above the experience of Mr. R. H. Vertegans, of Chad Valley Nurseries, Edgbaston, who has within the last few days drawn my attention to a large number of double Cinerarias which were badly attacked by mildew a fortnight ago. They have been syringed twice with a weak solution of sulphide of potassium, and are now quite free from the pest. Every gardener should test this new remedy, and report his success or failure with it for the general good. *Edward W. Badger, Moseley, near Birmingham.*

**Ficus repens.**—I enclose specimens of Ficus repens, all taken from the same plant, with specimen of fruit, showing its polymorphous forms, and the state of development it is apparently necessary to bring it to in order to produce fruit. The plant was originally planted on the back wall of a stove; after reaching the top, there being no further space for it to cling, it branched out vigorously in quite a different form of branch and leaf, and is now bearing fruit. It appears somewhat analogous to the Ivy, which when its climbing power is finished, assumes another form of growth and becomes fruitful. [For a figure of shoot see p. 560, vol. xiv., and of fruit, p. 717. ED.] *George Stanton.*

**Dendrobium Pruning.**—I have only now received my *Gardeners' Chronicle* of August 15, hence the delay in replying to Mr. N. Blandford's letter on p. 216. I am glad to see that Mr. Blandford admits that his "pruning" of Lælia anceps is not such "pruning" as advocated by "J. S. W." and practised on his Dendrobia. He there does reply to the question he quoted from my letter. Mr. Blandford said he removed "leafless bulbs." Now I maintain that when a healthy plant loses leaves on its back bulbs, those leaves are done with by Nature, and the bulb will follow. Unless the leaf is injured or affected by a cause foreign to the plant the bulb will not shed it till it wants it no more; therefore I consider that bulb may be taken away, but we seldom do it till its colour begins to change, or the sap tastes bad and otherwise to a healthy bulb. Mr. Blandford having looked for my "ordinary cultivation" in plants "exhibited at the great shows in London or the provinces," may have seen but few plants with every bulb having been made in England. No man would cut off leafless bulbs of the imported plants for years after, provided they were healthy. I am writing on his plant, which I believe to be all "English manufacture." If Mr. Blandford will permit me to come and see his plants I shall gladly do so, as I see we are on the same "track" with but a "guard rail" on each side. *De B. Crawshay.*

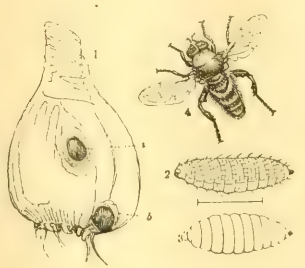


FIG. 75.—THE NARCISSUS FLY. (SEE P. 336.)

**The Orchid Map.**—The idea of showing the distribution of Orchids by a map, appears to me to be an excellent one, but in that given by Mr. Burbidge, in the *Gardeners' Chronicle* of May 9, 1885, it certainly is not correctly carried out as regards Australia. The genera are represented as located in parts of that continent where they are never found, while their true habitats are left vacant. No Orchids are known to have been obtained in the northern and north-western portions of Western Australia, with the exception of Cymbidium canaliculatum, and that only in the neighbourhood of the northern portion of South Australia (known as the Northern Territory), an Orchid which is also the only epiphyte which extends from the seaboard into the interior in the Northern Territory, Queensland, and New South Wales. The great majority of Australian Orchids are confined to the districts along the seashores to which the sea-breezes extend. The exceptions are a few species belonging to the truly Australian forms of terrestrial Orchids, and not including any belonging to the genera connected with, or the same as, those apparently derived from Asia, excepting the one above referred to. The principal genera in which some species extend to the area on the inward slopes of the coast ranges are Thelymitra, Caladenia, Diuris, and Prasophyllum. The Orchids of Western Australia affect the sea coast, and are only to be found between the great Australian bight and the Murchison River. They are all of the Austral type, except Cryptostylis. In South Australia the Orchids are also almost wholly confined to the southern slopes to the ocean, but approach in character much more nearly to the Eastern forms, though also destitute of epiphytes. In Victoria the species extend more inland, and include two genera, at least, of epiphytes; while in New South Wales the terrestrial are balanced by the tree Orchids. The terrestrial in Queensland become comparatively rare as to species, being replaced by epiphytes till, through the Northern Territory," a region is reached (on the boundary of Western Australia) of utter absence of all Orchids. I enclose a sketch map, in which the numbers given to the genera are those attached to them in the *Flora Australiensis*, to which a few are added. The localities only are marked where specimens have been procured, but of course the genera, in all probability, exists in intermediate situations. *Robert Fitzgerald, Hunter's Hill, Sydney.* [We are greatly indebted to our correspondent, who gives details that could not be extracted from the general statement in the *Genera Plantarum*, moreover, the requirements of space necessitated our placing figures in the central, almost unknown districts of Australia, but the self-same requirements have forced our correspondent to put numerous figures in the ocean! ED.]

**Trachycarpus Fortunei.**—The two best specimens of this Palm in the open air are probably in the grounds of Mount Edgcumbe. As at Heckfield, the male and female are growing close together. From the dimensions given on p. 304 Devonshire would be before Hampshire by about 2 feet. At Hewell Grange, near Bromsgrove, which is more than 100 miles north of London, there is a good-sized plant in a tub which has stood out through the last three winters. I do not remember Mr. Ward, the gardener, saying that he had protected it in any way. Once gradually inured to our climate, a long-continued and severe frost, such as Mr. Blackmore tells us of in *Lorna Doon*, would be necessary to kill it outright; in fact, the wind is a more dangerous enemy than frost. Given a sheltered position, this Palm would be available for gardens all along the west coast, and for some way inland. When the time is fulfilled for having glasshouses that will take down in the summer, to cover beds of greenhouse shrubs, all will be enabled to appreciate Fortune's Palm as they ought. *C. A. M. C.*

**Aristolochia elegans.**—After seeing this plant in Mr. Bull's nursery, and comparing with it an Aristolochia recently brought to Kew by Baron Capanema, of Rio, I think there is little doubt that the two are identical, and, therefore, the following information from Baron Capanema will be worth adding to Dr. Masters' description of this species. Writing about a collection of living plants which he had brought with him in a Wardian case from Brazil the Baron says:—"Among them was a climber, an Aristolochia, which is not described by Duchartre, in De Candolle, or by Masters in *Flora Braziliensis*. The labellum of the flower is peltate, and very symmetrically cup-shaped, the inside covered with a thick network of narrow veins of a dark brown colour, and a nearly black spot on the centre. I have, therefore, named it A. melanostoma. I had it from Paraguay some years ago, and as it is very ornamental it soon was cultivated in many gardens. Perhaps it may be described by somebody else." As the name proposed by the Baron is already occupied by a species of Aristolochia it cannot stand for this plant, which is now named and described as above by Dr. Masters. *W. W.*

**Clematis Jackmanni.**—In the beautiful gardens at Castle Hill, North Devon, this favourite plant revels in beauty, where Mr. Nicholas, the gardener, grows it in rather a novel way. Stretched across one of the kitchen gardens adjoining a path are wires placed and strained as is usually done for espalier fruit trees, and on these are trained the abundance of luxuriant growths, the result being a beautiful hedge 100 feet in length and about 4 feet in height. At the present time it is a mass of lovely deep violet-purple flowers—a gorgeous sight. Mr. Nicholas believes in a deep rich loamy soil for the Clematis, liquid manure frequently, and liberal dressing on and under the surface. *W. Napper.*

**Gas Lime as Manure Insecticide.**—Some correspondence having taken place in your journal relative to the value of gas lime for manuring purposes, I will briefly state that in December, 1884, the gardener of the Lock Hospital, Harrow Road, put 5 tons of the lime to every half acre of the garden ground, he allowed it to be exposed to the weather for four weeks, and then it was spread all over the grounds; then manured and dug in. The results have been wonderfully satisfactory. For numbers of years it had been almost useless to sow Onions or plant Cab-

bages. The soil had become so impregnated with wireworms and the chrysalis of the Cabbage butterfly, that caterpillars were so abundant it seemed utterly hopeless to attempt to cultivate Cabbages at all. I admit that, prior to the lime dressing, thousands of chrysalises had been destroyed by manual labour, but thousands probably remained undiscovered. Be this as it may, there is a remarkably fine crop of Onions this season where the gas lime had been dug in, and the produce of Cabbages has been very good—the latter now looking healthy and almost free from caterpillars. I am myself a most thorough believer in gas lime as witnessed in this garden. I am informed that in the Isle of Wight it is used on farms with excellent effects in destroying the enemies of the Turnips. *John Coleman.*

Eccremocarpus scaber. This is a very showy and ornamental plant. It is well adapted for training over columns, trellises, &c. It was formerly much grown and used for these purposes, but of late years its cultivation has been neglected. I have not seen a plant of it for some years until a few days ago, when I called on an old friend. In looking around I came to a fine specimen of this beautiful plant in full flower, covering a considerable portion of a wall facing west. In coming to the gardener's cottage I was surprised to see the south side of the cottage nearly covered with this plant, forming a mass of floral beauty. Both plants I ascertained had been planted out about two years, and had withstood the cold of the last two winters. Whether it is hardy enough to stand a severe winter I cannot say—a little protection would no doubt save it. It is deserving of any little care or trouble bestowed upon it, and should be planted in a compost of sand, loam, and peat. The plant can be increased by cuttings put into a sandy soil and plunged in a gentle heat in a pit or frame. When rooted they should be potted off singly and tied up to stakes and be put into a frame with a little bottom-heat until they begin to root freely; afterwards they will do in cooler structures. When a large space requires covering good plants should be planted, which will fill up vacant places much more rapidly than smaller plants would do. *M. Saul, Holgate, York.*

Laxton's Open-air Tomato.—This is a variety which gardeners residing in localities adapted for the out-of-door growth of this esculent should always cultivate. It is a most abundant bearer, the plant carrying from 10 to 12 lb. of well-developed fruits, and which almost invariably ripen thoroughly. The habit is dwarf, and thus the fruit is carried at such a short space from the soil that but a few small stakes are required as supports. Its nearness to the soil may also have something to do with its good property of ripening off the fruit. The flavour is fine, and the form not so much corrugated as some of the older kinds. *M. W.*

Datura (Brugmansia) suaveolens. This is a splendid greenhouse flowering tree when it has sufficient space to flourish. Just lately I met with two very fine specimens in the handsome and spacious conservatory at Sidbury Manor, Devon (A. D. Cave, Esq.). The extent of room they fill will be 20 feet by 15, and there were quite 250 flowers open at the time of my visit. These are funnel-shaped, 8 inches in length, and white, deliciously perfumed, the scent being strongest in the evening. The foliage, too, is highly ornamental, and remains on the plants in a large proportion during the winter months. *W. N.*

A Dahlia Exhibition for the North.—At the recent exhibition of Dahlias at the Crystal Palace, Sydenham, I heard from some of the growers of Dahlias from the North the expression of a desire that an annual show of Dahlias, similar to that held at the Crystal Palace, should be held in some central place in the North. York being mentioned as the most suitable centre midway between London and Scotland. There is at present scarcely an exhibition of Dahlias in the North worthy of the name. It is true that prizes are offered at Bishop Auckland, at Alnwick, and other places, but they are scarcely of a character to rouse the enthusiasm of the Midland and Northern growers. And yet the Dahlia is largely grown in the North by many who are content to exhibit at merely local shows. There are, no doubt, more growers north of Doncaster than there are south of it. I think that were such a project as a National Show of Dahlias in the North started, it would find a great deal of support. The best time to hold such an exhibition would be about the last week in August. This date would be likely to suit alike the Northern and Southern growers, and it might be made a national exhibition in the strictest sense of the word; and would attract cultivators and fanciers of this still popular flower from all parts of the country. If Mr. John Wilson, the Secretary of the York Floral Fête, could be induced to take the matter in hand, it could scarcely fail to be less than highly successful. Will the committee of the York Floral Fête lend their support to such a movement, and aid it by subscribing something substantial out of the surplus funds at their command? Mr. Wilson's co-operation would command universal confidence. Then there is the Ancient Society of York Florists, headed by their Secretary, Mr. John Lazenby. Will this body lend their aid also? Such a show would be quite in keeping with the objects of their association. If such a show can be undertaken, all sections of Dahlias should be fully represented in the schedule of prizes. If this is done, great interest will attach to such an exhibition. York is quickly reached from London. In this city there are spacious buildings, in one of which such a show could take place, if it be not held in the open air. Now is the time to stir in the matter. What do the Northern growers say? What will the Southern growers do? *R. Dean, Ealing, W.*

Grapes at the Exeter Show.—I endeavoured to give a correct report of this exhibition. The Grapes were especially good, the different classes for them being numerously contested. I made special notes of them at the time, which were printed correctly in last week's issue. *Reporter.*

# Reports of Societies.

## ROYAL HORTICULTURAL:

September 8, 9.

This meeting proved to be one of the most attractive which the Society has held this season, and seemed to be also a source of pleasure to the thousands who thronged in from the Inventions Exhibition, and to whom it must have afforded a welcome relief after gazing on man's handicraft in its unending galleries. The exhibition of fruit found quite as many admiring gazers as did the gorgeous stands of Dahlias, Gladioli, Begonias, and Lilies. Certificated plants were few, and fruits for the same honour still more so, the only items being a red-fruited Raspberry, a Melon or two, and a dish of Plums.

### Floral Committee.

Present—Shirley Hibberd in the chair, and Messrs. J. O'Brien, H. Williams, J. Dominy, C. Noble, J. Child, G. Duffield, J. James, T. Baines, W. Bealby, W. Wilks, H. Bennett, W. B. Kellock, T. Fraser, H. Turner, J. Hudson, J. Walker, Dr. Masters.

MISCELLANEOUS.

Mr. Thos. Ware had his usual stand of flowers from the open air, as full and as bright as ever containing a great bunch of Tritoma uvaria, Lilies, Valloras, a good many of the bright Dahlias, early Chrysanthemums by the way, than which nothing can be more welcome in the presence of the abundant late summer flowers of the brighter colours. A few single Dahlias with small flowers, for which many uses could be found, were noticed on this stand; these were Mary Anderson, a bright scarlet; Ingomar, very common; Pauline, light mauve; Freedom, scarlet; and Little Nob, deep crimson, striped with maroon. Cactus Dahlias, scarlet and white, pompon and show varieties, were seen in numbers, and noticeable among the Lilies were some spikes of the delicate orange-coloured Lilium pulchellum and the late-flowering Silene Shafta, rose-coloured and dwarf. A Silver-gilt Medal was awarded Mr. Ware for the collection.

Messrs. W. Paul & Son, Waltham Cross, had the autumn red-flowering Rose, Waltham Climber No. 1, of bright colour and habit. Tritoma nobilis, fine spikes of Dahlias and scarlet, opened to the ordinary frequented flowers. Hypericum nepalense, a slender, dwarf St. John's-wort, suitable for the rockery.

Mr. E. Ayling, gr. to J. Hollington, Esq., Ferny Hill, Enfield, showed a slender-growing Eucharis, named Hollingtonensis, small-flowered and long-stalked.

From Messrs. J. Veitch & Son, Exeter, there was the pale rose-coloured Leschenaultia exoniensis and from Mr. Astlett, gr. to Colonel Butler, Warren Wood, Hatfield, a dark flowered pink Diogenia, a fine plant of Vanda Sanderiana, with fourteen blooms on two spikes; a cultural commendation was awarded the grower.

Messrs. J. Veitch & Sons, Chelsea, showed the variegated-leaved form, Dracænopsis bausei, with a drooping habit of growth and Box-like foliage, apparently a capital object for covering small objects in shrubberies; in the group Dracæna Norwoodensis, a variety with dark green foliage, edged and striped with rose colour; Anæctochilus pumilus, showing habit of plant in a very young state.

A pretty, small plant of Odontoglossum Krameri came from H. J. Buchan, Esq., Wilton House, Southampton; it received a Cultural Commendation.

The New Plant and Bulb Co., Colchester, had a large group of Lilium auratum, mixed up with plants of Vallota purpurea.

Messrs. J. Carter & Co. showed a variety of the same with a dull dark brown band in place of a golden one on each petal. It is by no means an improvement on auratum. Fourcroya longæva, with a flower-stalk bearing young bulbils developing into plants as is customary in this species was shown by the same firm.

Some good specimens of the Glasgow Prize Cockscomb, one of which had a comb 2 feet in length and 9 inches in width, were sent by Mr. H. Crichton, Bellaire Garden, Greenock.

Messrs. Kelway & Son had, as usual, a large assortment of Gladioli from Langport. Many very fine kinds were to be found in it, but space only allows of the certificated kinds being alluded to, as Prince Waldemar, purple-rose and white throat; Lord Carnarvon, orange-scarlet; J. L. Toole, cerise-red and white throat; the spikes of all three being of more than average height, as shown. We do not know how it is that certificated Gladioli have become smaller when seen the next and following years. A Silver-gilt Banksian Medal was awarded for the general collection.

A fine effective group of Begonias was placed by Messrs. John Laing & Co. in the space facing the refreshment buffet, comprising many of their fine varieties, and to which a Silver-gilt Medal was awarded.

Messrs. Rawlings Brothers' new Dahlia, Bird of Passage, is a bright looking white bloom, tinged and edged on the petals with purplish-rose: the size is medium, centre full and quality very high. Dahlia Mrs. G. Rawlings has the same tints as the foregoing in an intenser way—form being as good. Some flowers show less colour than others. Dahlia G. Paul is called a decorative kind in opposition to show kinds, the petals are suffused pink, tipped with lake, and the habit of flower rather wanting in refinement.

FIRST-CLASS CERTIFICATES.

To Messrs. J. Carter & Co., for Lilium auratum var. rubro vittata.

To Messrs. Jas. Veitch & Sons, for Lomariopsis buxifolia and Dracæna Norwoodiensis.

To Mr. T. Ware, for Dahlia Mrs. Hawkins.

To Messrs. W. Paul & Son, Waltham Cross, for Rose Waltham Climber No. 1.

To Messrs. Rawlings Bros., for Dahlia Mrs. G. Rawlings, Dahlia Bird of Passage, and Dahlia G. Paul.

To Messrs. Cannell & Sons, for Dahlia Faust and Dahlia Eclipse.

To Messrs. Kelway & Son, for Gladiolus Waldemar, Gladiolus J. L. Toole, and Gladiolus Lord Carnarvon.

### Fruit Committee.

Present: F. D. Godman, Esq., in the chair; Messrs. G. Bunyard, J. Roberts, J. Willard, G. T. Miles, T. F. Rivers, J. Ellam, C. Silverlock, C. Ross, G. Goldsmith, W. Paul, J. B. Hayward, R. D. Blackmore, A. W. Sutton, Harrison Weir, G. Paul, R. Hogg, J. Woodbridge.

Mr. Beckett, The Gardens, Aldenham Park, Elstree, exhibited six brace of Cucumbers, and received a Vote of Thanks.

Messrs. R. Veitch & Sons, Exeter, showed a seedling Peach, a cross between Belle de Vitry and Galande; and also one a cross between Late Admirable and Belle de Vitry. They were accorded a Vote of Thanks. From the same exhibitor came a bunch of one of the American Fox Grapes, under the name of Garibaldi; it had been introduced from France.

Mr. Miles, The Gardens, Wycombe Abbey, exhibited Gros Maroc Grape; the bunch was a splendid specimen, with well-bloomed, large berries.

Mr. George Bunyard, Maidstone, showed a branch of Crittenden Damson, full of fruit; and Mr. R. Dean, Ealing, exhibited fruit of the same variety. Mr. Bunyard had also a dish of the fruit from budded trees, which was larger than that raised from suckers.

Bunches of seedling Raspberry, named Late Prolific, were exhibited by Mr. Herrin, Gerard's Cross. The committee desired to see the fruit again at the next meeting.

Messrs. Webb & Son, Wordsley, exhibited a seedling Melon, Beauty of Wordsley, but it was over-ripe.

Mr. George Bunyard, Maidstone, showed Pears Dr. Jules Guyot, Souvenir de Congrès, and Williams' Bon Chrétien, and received a Vote of Thanks. The first named Pear was a handsome fruit, but of an inferior flavour.

Mr. R. A. Bray, Bedfont, sent Pear Williams' Bon Chrétien from standards.

Mr. T. Laxton, Bedford, sent Self Help, a seedling Plum, in appearance like a large Mussel: it is a cooking variety, but inferior to Diamond.

Bronze Banksian Medals were awarded as follows:—

Mr. S. Ford—Pears and Plums.

Mr. J. Rose, Lockinge Gardens, Wantage—Plums.

Mr. Abel Phillips, Glaston Gardens, Uppingham—Plums.

Mr. J. Gore, The Gardens, Glenleigh, Hastings—Plums.

Mr. W. H. Divers, Maidstone—Plums.

Mr. Bates, Poulett Lodge, Twickenham—Plums.

Mr. W. Dance, The Gardens, Gosfield Hall, Halstead—Plums.

Mr. G. Hawkins, Ewening Priory, Bridgend—Collection of fruit.

DAHLIAS.

For the best forty-eight blooms, distinct, show varieties (nurserymen).—1st, Mr. C. Turner, Slough, the flowers being of the usual first-rate quality which the Slough Nursery turns out; and without wading through a long list of names, we will indicate a few of the choicest in the stand, as Seraph, Goldfinder, J. Saltmarsh, Mrs. Langtry, G. Rawlings, Bismarck, Rev. J. Godday, W. H. Williams, W. Rawlings, Imperial, Constancy, Chas. Wyatt, and Lady Gladys Herbert. 2d, Mr. W. Boston, Carthorpe, Bedale; his best examples were Fred Smith, Shirley Hibberd, Jos. Ashley, Hope, Constancy, and Annie Neville; 3d, Messrs. Keynes, Williams & Co., Salisbury.

Twenty-four blooms, distinct, show varieties (nurserymen).—1st, Messrs. Rawlings Brothers, Romford—Flag of Truce, H. Glasscock Professor Fawcett, Mrs. Glasscock, James Stephens, Bird of Passage, Mrs. Harris, and Ethel Britten, being some of the best blooms in the stand; 2d, Messrs. Saltmarsh & Sons, Chelmsford, the blooms of H. Walton, Earl Beaconsfield, Goldfinder, Ethel Britten, Imperial, and Acmé of Perfection; 3d, Mr. J. Walker, a well-finished lot of blooms, but which were deficient in size.

Twenty-four blooms fancy Dahlias, distinct (nurserymen).—In this class, that contained some very pretty examples, Messrs. Keynes, Williams & Co., were 1st, the best flowers being Rev. J. B. Camm, Rebecca, Hercules, Neptune, Mrs. Saunders, Gaiety sport, Ed. Peck, Fanny Short, General Gordon, and Miss A. Neilson; 2d, Mr. C. Turner, with such fine flowers as Annie Pritchard, Miss Lily Large, Duke of Albany, Grand Sultan, and Mr. G. Head; 3d, Mr. W. Boston, Bedale.

Twelve blooms, fancy Dahlias (nurserymen).—1st, Messrs. Saltmarsh & Sons, some fine flowers being seen in Gaiety, Galatea, Flag of Truce, Oracle, Rebecca, Mrs. Saunders, Hercules, Egyptian Prince, and Richard Dean; 2d, Messrs. Rawlings Brothers, whose Frank Pearce, Annie (seedling), A. F. Barron, and Professor Fawcett, were superior blooms; 3d, Mr. J. Walker.

Twenty-four blooms, show Dahlias (amateurs).—In this class the 1st prize went to the North country, Mr. Spoor, of Prospect Cottage, Musgrave, Low Fell, Gateshead, and in the stand were excellent specimens of Earl of Ravensworth, Emperor, Rev. J. B. Camm, Hon. Mrs. P. Wyndham, Mrs. Gladstone, Prince Bismarck, Seraph, Clara, W. Rawlings, Flora Wyatt; 2d, Mr. H. Glasscock, Rye Street, Bishops Stortford, whose flowers of the undermentioned were very fine:—G. Rawlings, Mrs. Gladstone, Jas. Cocker, Mrs. Harris, Senator, Ethel Britten, and Bugleman. 3d, Mr. C. Hockney, Stokesley, Yorkshire, with good blooms, but which were uneven in size and unequal as to quality.

Six blooms, distinct, fancy varieties (amateurs).—1st, Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood—Hugh Austen, Mrs. Saunders, H. Glasscock, and Chorister being his best blooms. 2d, Mr. H. Glasscocks, the blooms Flora Wyatt and John Lamont being good ones. 3d, Mr. J. Bass, gr. to A. S. Pricely, Esq., Park House Side, Ewell.

Twenty-four blooms, distinct, pompon varieties (open).—1st, Messrs. Keynes, Williams & Co. In this class there were many pretty useful flowers that may be put to a variety of purposes in garden decoration, some of the more striking kinds being Lady Blanche, white; E. F. Junker, suphur and red; Favourite, crimson; Brunette, pink centre, carmine outer petals; Darkness, crimson, very dark; Little Bobby, crimson; Fanny Weiner, yellow and orange; Gem, scarlet; Garnet, the same as the last; Placemaker, rose coloured. 2d, Mr. C. Turner, with Carl Mendel, crimson; Louis Rodain, lilac; White Aster, white, suffused lilac. 3d, Messrs. Cheal &'Sons, Crawley.

Twenty-four blooms, distinct, single varieties (open).—1st, Messrs. Cheal & Sons, with sorts well displayed in pyramidal bunches: flowers large and well contrasted; 2d, Mr. C. Turner; 3d, Messrs. Keynes, Williams & Co.

SPECIAL PRIZES.

These prizes were awarded by Mr. Charles Turner, Slough, to amateur growers only.

For twelve blooms, distinct, show varieties.—1st, Mr. J. T. West, good examples of the following being observed:—Mrs. Rawlings, Mrs. G. Harris, Henry Walton, Mrs. Langtry, Geo. Rawlings, Mrs. Harris, Joseph Green; 2d, Mr. H. Glasscock; 3d, Mr. J. Walker.

Twelve blooms, distinct, fancy varieties.—1st, Mr. J. T. West, with Gaiety, Peacock, Hugh Austen, and Chorister; 2d, Mr. H. Glasscock, with a handsome stand of fine blooms; 3d, Mr. T. Garratt, Bishop's Stortford.

Six blooms, distinct, pompon varieties.—1st, Mr. Glasscock, with pretty bunches of Guiding Star, Mabel, Isabel, Gem, Favourite, and Lady Blanche; 2d, Mr. J. T. West; 3d, Mr. J. Henshaw, Harpenden.

Six blooms, distinct, single kinds.—1st, E. M. Nelson, Esq., Ealing (Mr. Chadwick, gr.).

Show, fancy, and other kinds of Dahlias, were in great numbers staged by various members of the trade, notably Messrs. Cannell & Sons, and Messrs. Rawlings Brothers. Cut flowers were shown by Mr. Boothroyde, gr. to H. Coleman, Esq., Woodville, Dover, to whom a Bronze Banksian Medal was awarded. Messrs. Cannell obtained a Silver-gilt Medal for their Dahlias, Begonia blooms, &c.

FRUIT.

Fruit was confined on this occasion exclusively to Grapes, and then not at all in the ordinary form of collections of several kinds, as is so common, and by which arrangement sorts are repeated *ad nauseam;* but by inviting, through separate classes for each, no less than twenty-six kinds to name, with one extra class for any other kind; and thus it happened that some thirty distinct sorts were staged. Probably the effect of such a system of classing was detrimental to the exhibition as a spectacle, but as an educational effort it was worthy of all praise, and it was specially pleasing to find, as the various classes were judged, that few mistakes in nomenclature had been made. In few classes was the competition large, no doubt a two days' show operating somewhat against the entries. In some classes the competition was most meagre, showing that few gardeners comparatively cultivate many kinds that are, as a rule, not free doers, though perhaps having superior flavour.

The classes were somewhat mixed, as they ran alphabetically, hence the list opens with Alicante, of which there were seven pairs of bunches, including some grand samples—Mr. Howe, gr. to H. Tate, Esq., Park Hill, Streatham Common, coming 1st, with high-class bunches weighing 10½ lb., superbly finished. Mr. Pratt, gr. to the Marquiss of Bath, Longleat, with other large bunches, a little rubbed, and Mr. J. Lowry, gr. to J. MacAndrew, Esq., Mill Hill, who had if rather smaller some perfect samples, were placed equal 2d; and Mr. J. Hollings worth, gr. to J. F. Campbell, Esq., Uttoxeter, was 3d, with really good bunches.

The next class was Alnwick Seedling, which comprised five lots only, but the quality was remarkably even, and, indeed, has in that respect rarely been excelled. Mr. Clayton, Grimston Hall Gardens, was put 1st, with some double massive bunches, fine in berry and deep of hue; Mr. Wallis, gr. to R. Sneyd, Esq., Keele Hall, who had smaller but very perfect bunches, and Mr. Roberts, Gunnersbury Park Gardens, were placed equal 2d, the latter having beautiful samples; and, finally, Mr. J. Hudson, gr. to H. J. Atkinson, Esq., M.P., and Mr. Goodacre, gr. to the Earl of Harrington, Elvaston, were placed equal 3d, all samples being so good.

Of Black Hamburghs, of which there were but four lots, Mr. Pratt, who had again huge, massive bunches, was placed equal 1st with Mr. Roberts, whose samples, if smaller, were exceptionally perfect in form, and finely matured; Mr. Vert, gr. to Lord Braybrook, Audley End Gardens, came 2d, with longish tapering bunches, rather wanting colour; and Mr. J. Read, The Gardens, Moat Mount, Mill Hill, was 3d.

There were but two lots of Black Prince, fairly good samples of this moderately grown Grape—Mr. Baird, gr. to J. A. Day, Esq., Ealing, coming 1st; and Mr. C. J. Goldsmith, gr. to C. A. Hoare, Esq., Beckenham, was 2d.

Of Buckland Sweetwater only five lots were staged, Mr. Roberts having the best in solid bunches and large berries, well finished; Mr. S. Castle, West Lynn, came 2d; and Mr. G. M. Allis, The Gardens, Old Warden Park, Biggleswade, 3d.

There were but three exhibits of the Duke of Buccleuch, Mr. W. Allen, Gunton Park, having the best, in rather loose bunches, but with fine berries; Mr. G. Tucker, gr. to J. L. Lovibond, Esq., Farnborough, was placed next, with smaller samples; and Mr. J. Baird came 3d. The Duke is evidently not a popular Grape.

A less known Grape, Dutch Hamburgh, found only one lot to represent it, moderate bunches, about 1 lb. each, berries large and well hammered like those of Frankenthal. These came from Mr. Read.

That superbly-flavoured white Grape, Dr. Hogg, also found only one lot to exhibit its merits—handsome samples, however, which came from Mr. Hill, gr. to Lord Rothschild, Tring Park. These were pretty tapering bunches, and showing high cultivation.

Foster's Seedlings brought only five lots; one other, a handsome sample from Mr. Allen, proving on careful scrutiny to be White Tokay, and was disqualified, but had an extra prize awarded. No blame was attached to the exhibitor, as it is known that this Grape has been sent out for Foster's Seedling.

The best bunches of the real Simon Pure came from Mr. G. T. Miles, Wycombe Abbey Gardens, whose samples were excellent and finely coloured. Mr. Horsefield, gr. to Lord Heytesbury, Wilts, came 2d with neat bunches; and Mr. Taylor, gr. to J. McIntosh, Esq., Weybridge, was 3d.

Of Pearson's Golden Queen there were but two lots, fair-sized bunches, but wanting finish. Mr. Folkes, gr. to J. F. Halsey, Esq., M.P., Hemel Hempstead, was 1st, and Mr Wallis 2d.

That better known Grape, Gros Colmar, brought five lots only, the finest, about 3 lb. bunches, coming from Mr. M. Dawes, gr. to the Hon. Mrs. Meynell Ingram, Temple Newsome; Mr. A. Smith, Warren Hill, Loughton, coming 2d with large irregular bunches; and Mr. Tucker, who was 3d, had small but grandly finished bunches.

Placed in the schedule as Gros Guillaume, but best known as Barbarossa, this fine Grape found only one pair of bunches to represent it, but these were capital samples from Mr. R. Dawes, and well merited the 1st prize awarded.

Gros Maroc was also moderately represented, only five lots being staged, but the quality was good. Curiously enough of these five samples three lots showed berries of distinctly oval form, whilst those of the other bunches were perfectly round; yet in all other respects, even to the wood, there was no difference. Mr. Roberts had medium sized but suberbly finished berries of the oval type. Mr. Miles came 2d with the same form, and Mr. Wallis was 3d.

That popular late Grape, Lady Downe's, brought six pairs, Mr. Hollingsworth coming 1st with big bunches, but rather wanting colour; Mr. Wallis coming 2d, his bunches, if smaller, being more highly coloured; and Mr. Allis was 3d.

Only four lots of Mrs. Pearson were put up, Mr. Allen having large uneven bunches, berries good size, and fairly well coloured. Mr. Horsefield was 2d with smaller but heavy handsome samples, and being staged on a pink ground made the berries to glow with colour.

Fine lots again were staged of Madresfield Court Grape, the finest—if not handsome, at least deep coloured in berry—coming from Mr. Hudson, whilst Mr. Goodacre had very handsome even bunches a trifle smaller, Mr. Vent and Mr. Roberts being placed equal 3d, as both lots were so good.

Mrs. Pince brought no less than seven competitors, Mr. Pratt coming first with huge massive bunches and finely coloured berries, but getting a little stale. Mr. H. Sewell, Loughton, came next with smaller handsome bunches, but rather lacking colour, as indeed did all the rest. Mr. Wallis was 3d.

Of the Muscat Hamburgh there were but three lots, Mr. Goodacre having the best in fair sized samples, very fresh but a little lacking finish. Mr. Horsefield was next, with smaller but neat bunches; and Mr. Allen was 3d, with large loose bunches, badly coloured.

Only two lots of Mill Hill Hamburgh put in appearance, Mr. Taylor having the best, and Mr. Read the others, which were rather rubbed.

Muscat Champion was the only Grape invited that did not put in an appearance.

The best filled class was that for Muscat of Alexandria, there being eight lots staged, the finest coming from Mr. Lowry, who had massive clusters and good berries, but still rather wanting colour; Mr. Pratt came 2d with other grand bunches, even less well coloured; and Mr. Roberts was 3d, with solid medium sized bunches, but the best coloured in the class.

Only one pair bunches of Raisin de Calabre put in an appearance, and these proved to be Trebbiano. Mr. Barron showed the true Raisin de Calabre from Chiswick, and that presented a very different form of bunch and berry, with very diverse flesh and flavour.

Only one lot of Royal Muscadine was shown, and that so poor a sample that only a 3d prize was awarded.

Four lots of Trebbiano, all fine bunches, were put up, Mr. Hollingworth having the best in large clusters, berries rather uneven, but still good; Mr. J. Edmonds, Bestwood Lodge Gardens, was 2d, with smaller but handsome bunches; and Mr. Roberts was 3d.

Mr. Baird had the only sample of West's St. Peter, good bunches, richly coloured, and worthy the 1st prize.

Of White Tokay there were but two lots, Mr. Roberts having the best in finely coloured 4 lb. samples, and Mr. Hollingworth was 2d, his samples being too green.

The class for any other kind brought fine lots, Mr. J. Wells, gr. to R. Ravenhill, Esq., Fern Hill, Windsor, being 1st, with Cooper's Black, finely berried and coloured, and as close as two Peas like to the round form of Gros Maroc before noticed. Mr. Horsefield was 2d, with Chatsworth Seedling, a black kind not unlike Venn's Muscat, still excellent samples; and Mr. Roberts was 3d, with fairly good Duchess of Buccleuch.

Of other kinds shown were Black Frontignan and Black Monnuka, the latter presenting large loose bunches and pointed reddish berries that were the reverse of pleasing in appearance.

Mr. Roupell's special class for Frontignan Grapes brought no entry, whilst for

MESSRS. WEBBER & CO'S GRAPE PACKING PRIZES

the boxes or baskets sent by rail as parcels, each to contain 12 lb. of fruit, the 1st prize went to Mr. S. Castle, for a capitally packed basket, which was a simple cross-handle white wicker one, and oval in shape, holding about a peck and a half. This was simply lined with two sheets of tissue paper, and bunches being dropped in all round the sides so that the stems could be tied to the basket at the top; other bunches were dropped into the middle and these closing down fixed the whole firmly. Then some Willow sticks were bent over the basket, under the handles, and stout paper tied over, and in this way the packing was complete. Certainly, nothing could be lighter or simpler, whilst the Grapes within were perfect. Mr. Goodacre came 2d, with a similar basket, his Grapes showing off better, as he had buried his stems in packing, but that is no advantage as in unpacking the berries get rubbed. Mr. Turton, Maiden Erleigh Gardens, was 3d, his Grapes being in a deal box, well packed, but of course much greater in bulk than are baskets. There were four lots in baskets and four in boxes, but Mr. Castle had two baskets out of the four.

Mr. Roupell showed an interesting collection of grizzly Grapes, small in bunch; and Messrs. Lane & Sons, Berkhamstead, had seven of their grand pot Vines, huge circular trained plants, in monster pots, each plant carrying from fifteen to twenty fine bunches, well finished: these included Black Hamburgh, Gros Maroc, Foster's Seedling, Alicante, and Gros Colmar.

## GRAND NATIONAL DAHLIA and FRUIT SHOW, CRYSTAL PALACE: September 4 and 5.

THE Dahlia Show took place in conjuction with the fruit show at the Crystal Palace, and it was a source of great gratification to the exhibitors that they were once more able to stage their blooms in the western portion of the nave, instead of in a tent in the open ground, as last year. The entries in all the classes were numerous—much more numerous indeed than could have been expected, considering the dry character of the summer; but the showers of the two or three days previously kept a few away that would otherwise have competed. One grower from Scotland stated that his plants had been injured by frost the Tuesday previously. Mr. Turner was in good form, the flowers of good size, and of remarkable quality; while those of his rivals, Messrs. Keynes, Williams & Co., were small and rough, showing the effects of the dry weather. The Northern growers were well represented, and they gave a good

account of themselves. On the whole it was a thoroughly representative exhibition, all classes of flowers being well represented, and the seedlings, especially those from Messrs. Rawlings Brothers, were most promising.

### SHOW DAHLIAS.

In the nurserymen's class for forty-eight distinct varieties there were five competing collections, Mr. Charles Turner, Royal Nursery, Slough, being 1st, with a very good and well-balanced lot, in the selection of which for the premier position the judges could have found but little trouble, the varieties being Miss Cannell, Mrs. Langtry, James Stephens, William Rawlings, Mrs Hodgson, Harry Turner, dark maroon, nearly black, extra fine; Lady Wimborne, Mrs. G. Harris, Goldfinder, Joseph Green, Statesman, Julia Wyatt, Georgiana, Joseph Ashby, Mrs. Harris, J. N. Keynes, Clara, Senator, Champion Rollo, James Cocker, J. B. Service, Burgundy, F. J. Saltmarsh, yellow, deeply edged with red, distinct and pleasing; John Standish, Mrs. F. Foreman, Seraph, Lady G. Herbert, Prince Bismarck, Canary, Prince of Denmark, Henry Walton, Rosetta, Mrs. S. Hibberd, Mrs. Kendal, white, heavily edged and tipped with purple; Mrs. Henshaw, Mrs. Douglas, vivid scarlet, bright and showy; Imperial, Jas. Bennett, Muriel, Constancy, Hope, Chris. Ridley, George Rawlings, Mrs. Gladstone, Hon. Mr. P. Wyndham, Sunbeam, and Ruby Gem. 2d, Mr. Henry Boston, Manor Farm, Carthorpe, Bedale, Yorkshire, with larger flowers generally, but not so refined as those from Slough, still a very good contribution indeed from the North. The varieties were:—Henry Bond, Sunbeam, Emily Edwards, Charles Leicester, James Vick, Clara, Mrs. Stancomb, Alex. Cramond, Joseph Green, James Stephens, Thomas Goodwin, J. N. Keynes, William Rawlings, Joseph Ashby, Egyptian Prince (self), The Rover, Flag of Truce, Triumphant, James O'Brien (self), Vice-President, Miss Henshaw, Lord Chelmsford, H. W. Ward, Harrison Weir, Hope, Senator, Constancy, Mr. H. Williams, Mrs. Harris, Pioneer, Artist, Prince of Denmark, William Dodds, a fine orange-buff self; James Cocker, Hon. Mrs. P. Wyndham, Mrs. G. Harris, Mrs. Gladstone, very fine; Goldfinder, Ethel Britton, Henry Walton, Imperial, John Wyatt, Prince Bismarck, J. C. Reid, Mary Nesbitt, Criterion, Shirley Hibberd, and Annie Neville. 3d, Messrs. Harkness & Sons, florists, Grange, near Bedale; 4th, Messrs. Keynes, Williams & Co., Castle Street Nursery, Salisbury.

A similar number of competitors contended in Class B, for twenty-four show varieties, and here Messrs. Saltmarsh & Son, nurserymen, Chelmsford, were 1st with a very good, fresh, well developed lot of flowers, consisting of Criterion, Goldfinder, James Cocker, Mrs. Dodds, Hon. Mrs. P. Wyndham, J. B. Service, Ethel Britton, Joseph Ashby, Lady G. Herbert, J. Leicester, Mrs. Gladstone, Shirley Hibberd, Constancy, Mrs. Harris, Henry Walton, Mrs. Shirley Hibberd, Earl of Radnor, Hope, J. N. Keynes, Mrs. G. Harris, Sunbeam, Revival, Mrs. Hodgson, and John Standish. 2d, Messrs. Rawlings Bros., florists, Old Church, Romford, with a very good lot, consisting of Mrs. John Walker (seedling), Robert Petfield (seedling), Princess of Wales, Imperial, Flag of Truce, Rev. J. Godday, Mrs. Glasscock, a pure white self of promise; Mrs. E. Rawlings (seedling), Mrs. Glasscock (seedling), John Henshaw, Clara, William Steer, Mrs. Harris, J. H. Pearce (seedling), George Rawlings, F. J. Saltmarsh, Bird of Passage (seedling), Mrs. Douglas, Hon. Mrs. P. Wyndham, Goldfinder, William Dodds, Georgiana, Minnie, and R. F. Rawlings (seedling). 3d, Messrs. Paul & Son, Old Nurseries, Cheshunt, N.; 4th, Messrs. J. Cheal & Sons, Lonfield Nurseries, Crawley, Sussex.

There were five competitors in the class for twelve varieties, and here Mr. John Walker, nurseryman, Thame, Oxon, was a good 1st, with admirable blooms of John Standish, Mrs. Gladstone, William Rawlings, Champion Rollo, George Rawlings, Earl Radnor, James Cocker, Hon. Mrs. P. Wyndham, Monarch, Mrs. F. Foreman, William Green, and George Bennett. 2d, Messrs. J. Gilbert & Son, St. Margaret's Nursery, Ipswich, with J. C. Quennell, Mrs. G. Harris, Hon. Mrs. P. Wyndham, James Stephens, Mrs. G. R. Jefford, James Service, Countess, Rosetta, Harrison Weir, J. W. Lord, John Bennett, and Herbert Turner. 3d, Messrs. J. Burrell & Co., Howe House Nursery, Cambridge; 4th, Mr. G. Humphries, Kington Langley, Chippenham.

AMATEURS:—In the amateurs' division the best twenty-four blooms came from Mr. George Boothroyde, gr. to H. Coleman, Esq., Woodville, Dover, who had a very fine lot, as follows:—Prince Bismarck, Mrs. Gladstone, Mrs. Dodds, Ethel Britton, Earl of Beaconsfield, John Henshaw, Rev. J. Godday, Goldfinder, Flag of Truce, Hon. Mrs. P. Wyndham, Mrs. G. Harris, Jos. Bennett, Clara, Henry Walton, George Rawlings, Vice-President, F. Rawlings, Harrison Weir, Lady G. Herbert, Mrs. Henshaw, James Cocker, Miss Cannell, John Standish, and one unnamed. 2d, Mr. John Spoor, Prospect Cottage, Musgrave, Lonfell, Gateshead, with Cissie, Chorister, Mrs. Gladstone, William Rawlings, Vice-President, Seraph, Rev. J. B. M. Camm (self), Earl of Ravensworth, Lord Chelmsford, Harrison Weir, Jas. Vick, Countess of Ravensworth, J. B Service, Hope, H. W. Ward, James Cocker, Joseph Ashby, J. N. Keynes, Imperial, J. C. Reid, John Henshaw, Henry Walton, Prince Bismarck, and the Hon. Mrs. P. Wyndham; 3d, Mr. Henry Glasscock, Rye Street, Bishop's Stortford; 4th, Mr. John Nation, Whitemore, Staplegrove, Taunton. Eight collections were staged in this class.

In the class for twelve blooms there were as many stands competing, and here Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood, was 1st, with very nice fresh blooms of the following:—William Rawlings, Mrs. Gladstone, John Henshaw, very fine; Henry Walton, Mrs. Harris, Joseph Ashby, Prince of Denmark, Mrs. P. Wyndham, George Rawlings, Harrison Mrs. S. Hibberd, and H. W. Ward. 2d, Mr. John Walker, Alumwell Road, Low Fell, Gateshead, with Mrs. Gladstone, Vice-President, Charles Leicester, Earl of Ravensworth, Buttercup, a fine yellow self; Prince of Denmark, Hon. Mrs. P. Wyndham, James Cocker, J. N. Keynes, Imperial, Henry Walton, and Emily Edwards. 3d, Mr. J. Tranter, Upper Assenden, Henley-on-Thames, who had an extremely fine bloom of Mrs. Gladstone (selected as the premier show flower), Champion Rollo, James Cocker, Hon. Mrs. P. Wyndham, James O'Brien (self), Vice-President, Prince Bismarck, Earl of Ravensworth, Annie Neville, Mrs. F. Foreman, Sunbeam, and Miss Cannell; 4th, Mr. Thomas Garratt, Bishop's Stortford.

There were eleven collections of six blooms in class H, and here Mr. Jonathan Harris, Broomfield, Chelmsford, was 1st, with admirable examples of Ethel Britton, Emperor, Mrs. Harris, Prince of Denmark, Goldfinder, and Mrs. G. Harris; 2d, Mr. A. Tanbridge, gr. to the Rev. Mr. Trimmer, Broomfield, Chelmsford, with Ethel Britten, Shirley Hibberd, Mrs. Dodds, Mrs. G. Harris, Hon. Mrs. P. Wyndham, and Prince of Denmark; 3d, Mr. W. H. Apthorpe, Albury Brewery, Romford; 4th, Mr. Thomas Coote, North Terrace, Bishop's Stortford.

### FANCY DAHLIAS.

In the nurserymen's class for twenty-four varieties there were four competitors, and here Mr. C. Turner again scored 1st honours, having a remarkably good lot of blooms of the following:—Gaiety, Grand Sultan, Frederick Smith, Henry Glasscock, Miss Annie Melsome, Romeo, Annie Pritchard, W. G. Head, Charles Wyatt, Professor Fawcett, Duchess of Albany, Peacock, Edward Peck, Mrs. Saunders, Chorister, George Barnes, Laura Haslam, Rebecca, Miss Lily Large, General Gordon, James O'Brien, Robert Burns, and two seedlings. 2d, Messrs. Keynes, Williams & Co., with Gaiety, Charles Wyatt, Canire, Rougier Chauvière, Duchess of Albany, Hercules, Rebecca, Madame Soubeyre, Parrot, George Barnes, Flora Wyatt, Romeo, Chorister, Peacock, Miss Annie Melsome, General Gordon, Professor Fawcett, Mandarin, Fanny Sturt, Gaiety, sport and seedlings; 3d, Mr. H. Boston; 4th, Mr. H. Clark, florist, Rodley, near Leeds.

Messrs. Rawlings Bros. had the best twelve, staging good blooms of Gaiety, Edward Peck, Lotty Eckford, Peacock, Mrs. Saunders, Professor Fawcett, Polly Sandell, Frank Pearce (seedling), extra fine, selected as the premier fancy; Mrs. Carter, rich maroon, tipped with white; Mrs. Stevens (seedling), Annie (seedling), and Gem. 2d, Messrs. J. Saltmarsh & Sons, with Edward Peck, Canire, John Lamont, Hugh Austin, Rebecca, Mrs. Saunders, John Forbes, Fanny Sturt, Letty Coles, General Gordon, Chorister, and Galatea. 3d, Messrs. J. Cheal & Sons; 4th Messrs. Paul & Son.

In the amateurs' class for twelve varieties there were seven collections, the best—and a very good lot they were—came from Mr. Henry Glasscock, who had capital blooms of J. Lamont, Goldfinch, Professor Fawcett, Mrs. Saunders, Henry Glasscock, Polly Sandell, Miss L. Large, Canire, Peacock, Flora Wyatt, Chorister, and Lotty Eckford. 2d, Mr. R. Petfield, The Gardens, Diddington, Buckden, Hunts, with Edward Peck, Gaiety, Peacock, Jeanette, Lotty Eckford, Romeo, Fanny Sturt, Mr. Saunders, Duchess of Albany, Maid of Athens, Alderman, and Hugh Austin. 3d, Mr. H. Vincent, The Gardens, The Poplars, Keymer; 4th, Mr. Barnabas Clark, Spottesham, Norfolk.

There were eleven competitors in the class for six flowers, Mr. William Steer, 2, Hamilton Terrace, New Eltham, Kent, was 1st; Mr. Geo. Boothroyde 2d, Mr. Thos. Garratt 3d, and Mr. J. T. West 4th. The varieties did not differ from those already given.

### POMPON DAHLIAS.

These were as usual effectively shown in bunches, and they made an exceedingly pretty display. The best twenty-four distinct varieties came from Messrs. Keynes & Co., a very fine lot indeed, and an excellent assortment of varieties; they had The Khedive, Dora, Gem, Flora Macdonald, Little Prince, Catherine, Sappho, Wilhelm Nitsche, White Aster, Cupid, Garnet, Mabel, Rosetta, E. F. Jungker, Isabelle, rich scarlet; Nemesis, Fanny Weiner, Golden Gem, Mdlle. Valentine Faconet, Little Bobby, Darkness, Lady Blanche, Brunette, and Rosalie. 2d, Mr. C. Turner, with E. F. Jungker, Mabel, Little Beauty, The Khedive, Dr. Rauch, Nymph, Louis Rodani, Gem, Nemesis, Jessie McMillan, Olivette, Thomas Moore, Titania, Rosy Morn, Dove, Princess Sophie of Sopecha, Fanny Weiner, Hilda, Fair Helen, Little Arthur, Formosa, Professor Bergeat, and White Aster. 3d, Messrs. Rawlings Brothers.

Messrs. J. Gilbert & Sons had the best twelve, staging charming bunches of Handel's Gaertner, Little Mabel, Lady Blanche, Gem, Guiding Star, H. Milesky, Sensation, Little Bobby, Pure Love, J. E. O. Enke, Garnet, and Cupid. 2d, Messrs. Paul & Son, with Dove, H. Milesky, Dora, Lightning, A. Hubner, Little Bobby, Favourite, F. Weiner, Lady Blanche, Mabel, Gem, and Anna Zauchmann. 3d, Messrs. F. J. Smith & Co., nurserymen, Dulwich, S.E.

The best six bunches came from Messrs. J. Burrell & Co., who had Coquette, White Aster, Gem, Little Duchess, Prince of Liliputians, and Titania. 2d, Mr. J. T. West with E. F. Jungker, White Button, Gem, Favourite, Mabel, and Adonis; 3d, Mr. J. Walker, Thame; 4th, Mr. G. Humphries.

### SINGLE DAHLIAS.

These were, as usual, superbly shown, and they made a very effective display, shown in large triangular shaped bunches.

Messrs. J. Cheal & Sons had the best twelve, staging Juno, Charles Laws, Queen of Singles, Silver King, Negress, Alba perfecta, Brutus, Fashion, Paragon, Sunset, Formosa, and Henry Irving; 2d, Mr. C. Turner, with Harlequin, Alba, Lucy Ireland, Scarlet Defiance, Queen of Singles, Sunbeam, Mandarin, Defiance, Duchess of Westminster, Ellen Terry, Aurora, and Lutea grandiflora; 3d, Messrs. Keynes, Williams & Co., who had fine bunches of White Queen, Negress, Mauve Queen Improved, Velvet Mantle, John Cowan, Defiance, Queen of Singles, and Acquisition; 4th, Mr. John Walker, Thame.

Messrs. J. Gilbert & Son had the best six bunches, staging the following in fine form:—Lucy Ireland, Dr. Moffatt, Charles Laws, Mrs. Bowman, White Queen, and William Castle; 2d, Messrs. J. Burrell & Co., with Ascalon, White Queen, Mrs. Bowman, Gracilis perfectus, Dr. Moffatt, and Lutea grandiflora; 3d, Mr. J. Jones, gr. to J. S. Pope, Esq., Cedar Lodge, Bath; 4th, Mr. T. Hooper, florist, Widcombe Hill, Bath.

### PREMIER DAHLIAS.

The premier show Dahlia was a magnificent bloom of Mrs. Gladstone, shown by Mr. J. Tranter, Upper Asserden, Henley-on-Thames; and the premier fancy a seedling named Frank Pearce, shown by Messrs. Rawlings Bros.

### SEEDLING DAHLIAS.

The Dahlia show of 1885 will be remarkable for the great success achieved by Messrs. Rawlings Bros., of Romford, with seedlings. Last year they showed, somewhat late in the season, a batch, a half-dozen of which were distributed by Mr. C. Turner, and these proved they had hit upon a fine strain. This year they produced a batch of some ten seedlings, and to five of these First-class Certificates of Merit were awarded as follows:—Mrs. E. Rawlings, delicate pink, with faint stripes and tip of purple, good petal and outline, high centre, distinct, and very constant, as a dozen blooms of it were shown; Mr. Glasscock, the centre maroon, the circumference bright purple, somewhat flat, good outline and centre; Bird of Passage, light ground, tipped with pale lilac-purple—very pretty and pleasing; Mrs. John Walker, delicate pink, the centre sulphur, with a wire edge of purple to the petals, good petal and outline, high full centre; and Frank Pearce (fancy), bright deep lilac-purple, flaked and striped with crimson, fine petal, outline, and centre, and in every way first-rate. Other seedlings were Mrs. Keith, of the Miss Cannell type, the well-formed petals heavily edged with purple; Robert Petfield, bright orange-red, good centre, flat, and the petals a little reflexed; and Mrs. Stevens (fancy), buff ground, suffused with maroon, and striped with crimson and mauve. Messrs. Keynes, Williams & Co. had Pelican (fancy), delicate ground, striped and flaked with purple, the petals a little ribbed, good high centre and outline; Richard Dean, a distinct bright purple self; William Slack, bright red, very showy; Thomas Hobbs, maroon shaded with purple; Eva Fisher (fancy), orange-buff, flaked with scarlet; and Salamander (fancy), yellow ground, flaked and striped with crimson. Mr. C. Turner had Irene, delicate lilac slightly shaded with pale purple, good petal and outline. Mr. G. H. P. Harris, of Orpington, had Lady Holmesdale, white, flaked with purple; Chieftain, a yellow self; Freedom, buff, striped with ruby red; and Draughtsman, crimson, shaded with maroon.

The following three money prizes offered for seedlings were awarded to Messrs. Rawlings Bros., as follows:—1st, Mrs. E. Rawlings; 2d, Mrs. John Walker; 3d, Bird of Passage.

### TURNER MEMORIAL PRIZE.

This is a handsome silver cup offered for twelve show and six fancy Dahlias, and it has to be won three times before it can become the property of the holder. There were five entries for this memorial, but one only was forthcoming, that from Mr. Henry Glasscock, Bishops Stortford, who had the following show flowers:—George Rawlings, Miss Cannell, Imperial, Hon. Mrs. P. Wyndham, Mrs. Gladstone, Shirley Hibberd, Mrs. Glasscock, Fanny Gardener, Prince of Denmark, Cyprus, Senator, and Mrs. Harris; and the following fancies:—Henry Glasscock, Peacock, Professor Fawcett, Canire, Mrs. Carter, and Lotty Eckford.

Miscellaneous contributions included a very fine lot pompon, single and Cactus Dahlias from Mr. T. S. Ware, Hall Farm Nurseries, Tottenham, the latter including a pretty new variety named Mrs. C. Hawkins-creamy-white, edged with delicate purple on the olde, petals; a collection of Cactus Dahlias from Messrs. Keynes, Williams & Co.; and a collection of pompon and single Dahlias and hardy flowers from Messrs. J. Cheal & Sons.

### CUT FLOWERS: OPEN CLASSES.

For a collection of Gladioli spikes, the 1st prize was well won by Mr. A. E. Campbell, Cove Gardens, Gourock, N.B. This was a collection of the usual merit we are now accustomed to witness from Cove, an account of whose novelties and finest blooms will be found in another part of our issue.

French and quilled Asters were rather numerously shown, but they were of no great merit, the long drought having hindered the development of very fine examples—Messrs. Saltmarsh & Son, Chelmsford Mr. J. Jones, gr. to J. S. Pope, Esq., Cedar Lodge, Bath, Mr. F. Hooper, Bath, Mr. J. Morgan, gr., Wray Park, Reigate, being the principal prizetakers.

Some rather handsome collections of Hollyhocks, twenty-four blooms, distinct, were shown by Mr. Finlay, gr. to Mrs. M. Proud, East Layton Hall, Darlington, who obtained 1st prize; Mr. Hy. Clarke, Hodley, Leeds, was 2d; Messrs. Harkness, Grange Nursery, Bedale, 3d.

Collections of cut stove and greenhouse flowers were

well shown by Mr. A. Gibson, 1st; Mr. J. Hudson, 2d. This exhibitor had inserted the stalks of the blooms into pots of growing Adiantums. 3d, Mr. G. Parrott, gr. to W. Wright, Esq., The Grange, Denmark Hill. There was an entire absence of any novelties amongst the flowers shown, these being of the usual showy class seen at this season of the year.

Mr. Piercy, 89, West Road, Forest Hill, S.E., took 1st prize for a collection of early flowering Chrysanthemums, the best kinds being Mrs. Cullingford, Petite Marie, Nanum, Lyon, Mademoiselle Jolivart, Madame des Granges, and Mons. Dufoy; Mr. H. James, Lower Norwood, took 2d prize, sorts nearly similar to the foregoing; and Mr. N. Davis, Camberwell, 3d.

AMATEURS.

For the best twelve Gladiolus spikes, Rev. H. H. D'Ombrain was far away the 1st with his collection—Meyerbeer, Murillo, Leandre, Tamerlane, Seduction, Flamboyant, and Teather Gem being the finest spikes. Mr. A. Whitton, Askew, Bedale, was 2d, the spikes being likewise of much beauty—Ninon de l'enclos, Meyerbeer, Adolphe Brongniart, and a few of the same kinds as in the premier collection; Mr. J. Nation, Whitemore, Staplegrove, Taunton, was 3d.

The prizes for Hollyhocks, twelve distinct, fell respectively in the order of their names to Mr. G. Finlay, Mr. A. Whitton, and Mr. H. Cattley, Claverton Buildings, Widcombe, Bath.

MISCELLANEOUS.

Messrs. J. Laing & Co., Forest Hill, brought a beautiful collection of their newest strain of tuberous Begonia, amongst them being many with self-supporting blooms, the plants dwarf, compact, and very sturdy. An extra prize was awarded.

Messrs. H. Cannell & Sons, Swanley, had also a large group of these useful plants, the central portion of his group being composed of Begonia Rosamund, a heavy flowered pendulous kind of dull rose colour; there were likewise boxes of Cactus Dahlias, single Dahlias in bunches, the best of the latter being Kate Green, Thérèse, and Defiance. Flowers of single Begonias and pompon Dahlias were noticed as being conspicuous on this stand.

Mr. J. Neighbour, Bickley, received an extra award for a nice collection of fruit; Mr. Butler for Pears, and Mr. Boothroyd for cut blooms of out-of-door flowers.

Mr. James Don, seedsman, Chappel Street, Nottingham, exhibited a peculiarly rough-skinned Potato, named the Village Blacksmith—a sort of reputed good character. It is a handsome, thrifty looking tuber, and a prolific cropper; but nothing quite definite can be said about it until after further trials.

First-class Certificates were awarded to Rev. H. H. D'Ombrain, Ashford, for Gladiolus Rabout; Messrs. Kelway & Son, Langport, for Gladioli Lord R. Churchill, Dora Thorne, Princess Maude, Lord Ashbourne.

FRUIT.

The quality of the fruit of all kinds was of an unwonted degree of excellence, more especially the Grapes in all the various classes. Perhaps the whole of the Muscat of Alexandria Grapes were less golden in appearance than is the case in those years when the amount of sunlight is greater than it has been this year. We have enjoyed heat, and we have been free from the usual drenching rains of an English summer, both of which factors in first-class Grape culture, will account for much of the general excellence of the fruit shown, and from which the Grapes would more particularly benefit. Peaches were not so large as in wetter years, but the colour left nothing to be desired, so far as high coloured kinds are concerned. Morello Cherries, Plums, Figs, were mostly finely grown and of a large size. Of Strawberries, but few were shown, the best sort being La Grosse Sucrée, now much paler in colour—a decided advantage in point of appearance. Quatre Saisons followed next in point of size, and is in point of flavour the superior of the first named kind, but being merely an improved alpine, and relatively small, would find fewer connoisseurs. Garibaldi, a well-known variety, found place in one of the winning collections.

COLLECTIONS OF NOT LESS THAN TWENTY DISHES.

For the prizes in this competition five collections were entered, and the merits of most of them were keenly discussed. Eventually the prizes fell as—1st, Mr. J. Roberts, gr. to Messrs. de Rothschild, Gunnersbury Park, the sorts of fruit shown being—Grapes, Black Hamburgh, very fine; Alnwick Seedling, good; Muscats and White Tokay; nice Pines, Nectarines, Peaches—Lord Napier, Victoria, Sea Eagle (very large); Plums, Transparent and Kirkes; Melon W. Tillery, Pear Bon Chrétien, Apple Red Astrachan, &c. Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, was 2d, his best dishes being—Grapes Madresfield Court, Nectarine Pine-apple, Peach Downshire, Strawberry Garibaldi, Cherries Morello, Plum MacLaughlin's Gage, Black Hamburgh Grapes, and Charlotte Rothschild Pine. Mr. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, secured the 3d prize, the Jargonelle Pears, Foster's Seedling Grapes, Brunswick Figs, and Morello Cherries being very good produce.

FOR COLLECTIONS OF TWELVE DISHES

there were four entries, the 1st prize going to Mr. Coomber, gr. to J. H. Rolls, Esq., M.P., The Hendre, Monmouth. In this capital lot were fine Brunswick Figs, La Grosse Sucrée Strawberries, D'Alsace Apricot, Clapp's Favourite Pear, Downton and Lord Napier Nectarines, and the delicious Reine Claude, du Bavay Plum. Mr. G. T. Miles, gr. to Lord Carington, Wycombe Abbey, was the winner of the 2d prize, the Gros Mœrco and Foster's Seedling Grapes, Morello Cherries, Smooth Cayenne Pine-apples, and Sea Eagle Peaches being amongst the more noticeable fruits. Mr. A. Miller, gr. to H. W. Long, Esq., M.P., Rood-ashton, Trowbridge, was 3d.

FOR THE BEST EIGHT DISHES OF FRUIT,

from which Pines were excluded.—1st, Mr. W. Pratt, gr., Lougleaf Gardens, Warminster, the Black Hamburgh and Muscat Grapes, Noblesse Peaches, and Brunswick Figs being excellent; 2d, Mr. Edmonds, gr. to the Duke of St. Alban's, Bestwood Lodge, Nottingham, whose Alicante Grapes and Barrington Peaches were superb; 3d, Mr. Elphinstone, gr. to E. M. Mundy, Esq., Shipley Hall, Derby.

COLLECTIONS OF GRAPES, TEN KINDS, TWO BUNCHES OF EACH.

Here as in the collection of miscellaneous fruits, Mr. J. Roberts took the lead, proving the excellence of the management of the Vine at this noted garden. The sorts shown were Madresfield Court, fine in berry and colour; Buckland Sweetwater, also extra good; Lady Downe's, Foster's Seedling, Black Hamburgh, two very fine bunches; Muscat of Alexandria, large in bunch, but not extraordinary in colour; Gros Maroc, fine in every point, Trebbiano, medium-sized bunches of Black Alicante, and Alnwick Seedling, the colour, bloom, and size of berry and bunch, being all that could be wished for. Mr. Ward, Longford Castle Gardens, was 2d, his bunches of Black Prince, Gros Guillaume, Gros Maroc, and Mrs. Pince, were large and well finished: the Black Hamburghs were rather loose in the bunch, but very fine in bloom and colour. Mr. J. Wallis, gr. to Rev. W. Sneyd, Keele Hall, Newcastle, was 3d, the Barbarossa and Gros Maroc being of much merit.

COLLECTIONS OF FIVE KINDS OF GRAPES.

Here Mr. Pratt was awarded the 1st prize; his bunches of Black Hamburgh were superb, not over large of berry, and for size of bunch and unblemished bloom were unapproachable. His other kinds were Lady Downe's, Alicante, Mrs. Pince—fine, big, solid-looking bunches; Muscat of Alexandria, very large bunches, not apparently over-ripe, and somewhat irregular in size of berry. Mr. J. Hudson, gr. to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, was 2d; the bunches in this collection of Gros Maroc, Madresfield Court, and Alnwick Seedling were very superior. Mr. A. Smith, gr. to W. H. Sewell, Esq., Warren Hill, Longholm, Essex, 3d: this lot contained some not handsome or symmetrical bunches of Gros Maroc, but which were large in bunch and berry; Black Alicante was likewise excellent.

For the best three bunches of Black Hamburgh.—1st, Mr. Pratt, with massive bunches, heavily shouldered, well coloured throughout, and the individual berries were sufficiently large; 2d, Mr. J. Bury, gr. to A. Richards, Esq., Tewkesbury Lodge, Forest Hill, the bunches large, but berries rather small; 3d, Mr. F. Jordan, gr. to B. Foster, Esq., Witley, Godalming.

For three bunches of Muscat of Alexandria.—1st, Mr. J. J. Lowry, gr. to J. McAndrew, Esq., Belmont, Mill Hill, Hendon—massive compact bunches of the highest excellence; 2d, D. P. Blaine, Esq., Fowley, Liphook, Hants (gr., Mr. P. F. Edwards), fine well coloured ripe bunches; 3d, Mr. Pratt.

For the best three bunches of Gros Colmar.—1st, Mr. R. Dawes, gr. to Hon. Mrs. Maynell Ingram, Temple Newsham, Leeds—fair bunches but not up to the mark in colour and finish; the 2d was withheld, and a 3d prize was awarded to Mr. Elphinstone, gr., Shipley Hall, Derby.

For three bunches of Madresfield Court.—1st, Mr. Goodacre, Elvaston, with compact symmetrical bunch, that was not too long in proportion to the width—a peculiarity often seen in this kind, and decidedly undesirable: the berries were of an even size and well coloured. 2d, Mr. Hudson, with bunches first-rate in every point; 3d, Mr. H. Folkes, gr. to T. F. Halsey, M.P., Gaddesden Place, Hemel Hempstead.

For three bunches of Alicante.—1st, Mr. W. Howe, gr. to H. Tait, Esq., Park Hill, Streatham Common, with massive bunches, in which the berries were much too crowded: the weight of three was 16 lb.; 2d, Mr. W. Pratt, very fine bunches in every way, but less in weight than the foregoing; 3d, Mr. T. Osman, gr. to N. S. T. Baker, Esq. Ottershaw Park, Chertsey, with good specimens having beautiful bloom upon them. An extra prize was accorded Mr. J. Neighbour, gr., Bickley Park, Kent.

For three bunches of any other white Grape.—1st, Mr. Osman, for very fine bunches of White Frontignac, well shouldered; 2d, Mr. Foulder, with Golden Queen; 3d, Mr. Roberts.

For the best three bunches of any other black Grapes.—1st, Mr. Dawes, gr., Temple Newsham, with bunches of Barbarossa weighing together 21 lb. the colour, form of bunch, and regularity of shape being quite remarkable, even in this large bunched variety; 2d, Mr. J. Roberts, his fine Gros Maroc looking small beside the Grapes of Mr. Dawes; 3d, Messrs. T. Rivers & Son, Sawbridgeworth, with the last-named variety. The Grapes generally in this class were of superb quality; but space forbids our referring to the unsuccessful exhibitors.

Although prizes were offered for two Queen Pine-apples, there was no competition.

The prizes for two Pine-apples of any other variety were taken respectively by Mr. G. T. Miles, 1st, and Mr. Goodacre 2d, the 3d prize being withheld.

For the best four dishes of Peaches, distinct.—1st, Mr. Divers, gr., Kitton Hall, Stamford, who had some splendid Barringtons, Princess of Wales, and Bellegardes; 2d, Mr. Goodacre, with smaller fruits, but finely coloured; 3d, Mr. J. Roberts.

For a similar number of dishes of Nectarines the order of the names was somewhat altered, Mr. J. Roberts being placed 1st, Mr. Divers 2d, and Mr. Goodacre 3d. In the best collection good Pitmaston, Pine-apple, and Lord Napier were noticed; and in the 2d lot Rivers' Orange and Stanwick.

For the best dish of Peaches.—1st, Mr. A. Gibson, gr. to T. F. B. Atkins, Esq., Halstead Place, Sevenoaks, with Barrington; 2d, Mr. Pullman, gr. to R. B. Sheridan, Esq., Frampton Court, Dorchester, he having the same kind; Mr. G. Holliday, gr. to J. Norris, Esq., Castle Hill, Bletchingly, was 3d.

For a dish of Nectarines, Mr. Pullman was 1st, with Pine-apple, a capital sample of fruit; Mr. Evans, gr., Lythe Hill, Haslemere, 2d; and Mr. Divers 3d, the sorts shown being in both instances the first-named sort.

The collection of six dishes of Peaches and six of Nectarines was apparently too much for gardeners and nurserymen alike, only one competing lot appearing—that of Messrs. T. Rivers & Son, who were awarded the 1st prize; amongst the sorts of the former shown were Exquisite, a fine-looking yellow-skinned one; Madeline Blanch, a very pale Peach; and Raymacker, a pale obovate fruit.

For a Melon, green-fleshed, Mr. R. Spinks, Victoria Road, Horley, was 1st, with a medium-sized example of Best of All; and the veteran exhibitor, Mr. T. Bailey, gr., Shardeloes Gardens, was placed 2d, with a small Golden Queen; 3d, Mr. H. W. Ward.

In scarlet-fleshed varieties Mr. T. Bailey was 1st, with Victory of Bristol; Mr. G. Boothroyd, gr. to H. Coleman, Esq., Woodville, Dover, 2d, with Scarlet Gem; and Mr. E. Gillman, gr. to the Earl of Shrewsbury and Talbot, Ingestre Hall, 3d.

For four dishes of Plums, distinct, Mr. Neighbour was 1st.

For four dishes of green and yellow Mr. J. Wills, Fernhill, Winkfield, Berks, was 1st.

For four dishes of purple kinds Mr. G. Holliday was 1st.

The 1st and only prize for Figs was awarded to Mr. J. Wallis.

The highest prize for a basket of black Grapes was taken by Mr. C. J. Salter, gr. to J. Southgate, Esq., Selborne, Streatham—the variety was Black Hamburgh that were of excellent quality; Mr. T. Osman, Ottershaw Park, was 2d, with Black Alicante, also a capital lot in every way; 3d, Mr. J. Hudson.

The prizes for the best baskets of white varieties were taken by Mr. C. J. Goldsmith, Kelsey Gardens, Beckenham, 1st, with Muscats; 2d, Mr. W. Pratt; 3d, Mr. S. Castle, West Lynn, Norfolk.

For twelve kinds of Apples, distinct, 1st, Mr. A. Waterman, gr. to H. Brassey, Esq., Preston Hall, Aylesford, Kent, with well known approved varieties; 2d, Messrs. T. Rivers & Son; 3d, Mr. W. Layzell, gr. to R. Harland, Esq., Homefield, Merton.

For ten kinds of Pears Mr. J. Butler, gr. to A. J. Thomas, Esq., Orchard Lane, Sittingbourne, was 1st, Messrs. T. Rivers & Son 2d, and Mr. Waterman 3d. The sorts shown, Louise Bonne de Jersey, Windsor, Beurré Hardy, Conseiller à la Cour, Doyenné Boussoch, Clapp's Favourite, Beurré d'Amanlis, Princess, Madame Treveyer, Pitmaston Duchess.

For three dishes of ripe Apples, distinct.—1st, Mr. Butler; 2d, Mr. Waterman; equal 3d, Mr. J. Neighbour and Mr. W. Layzell, the sorts exhibited being Hunt's Early, Worcestershire Pearmain, Red Astrachan, and Quarrenden.

For three dishes of ripe Pears, distinct.—1st, Mr. Butler; 2d, Mr. Waterman; 3d, Mr. Divers, sorts being Desire, Cornelius, Windsor, Bon Chrétien, Beurré Giffard, Dr. Jules Guyot, Souvenir du Congrès.

Mr. Goldsmith, Kelsey Gardens, took the 1st prize for the best collection of Tomatos, six dishes, distinct; Mr. Goodacre the 2d, and Mr. S. Castle the 3d, most of the well-known large-fruited kinds finding place in one or other of the collections.

The Fruiterers' prize for collections of native and foreign fruits brought two competitors—Mr. G. H. Wingfield, 37, Market Street Brighton, 1st; and Mr. G. Wood, 75, St. James' Street, S.W., 2d.

## BRIGHTON AND SUSSEX: Sept. 2 and 3.

THE annual autumn show of the above Society was held as usual in the Royal Pavilion and the grounds contiguous. The exhibition on this occasion was a thoroughly representative one, both plants, cut flowers, and fruit were of a high order of merit. The rooms and the large marquee were lighted in the evenings of both days by the electric light; the large numbers of visitors present testified their appreciation of this advantage, which afforded many an opportunity of viewing the exhibition who otherwise would not during the daytime have been able to do so.

Stove and greenhouse plants were shown in good numbers; those in the winning collections were in first-rate condition, with but few exceptions. We noticed a few specimens that had nearly run their course, having become somewhat scrubby; it is a mistake to keep such as these, as young plants taking less rooms would be far more effective.

FLOWERING PLANTS.

In the large class for eight specimens in bloom, the Ashbury Cup was offered for the best collection; this was well won by Mr. Gilbert, of Hastings, with specimens in his well known and capital style, all being most floriferous. These consisted of Kalosanthes coccinea superba, of intense colour; Allamanda Hendersoni, and A. cathartica, both well done; Erica æmula, a fine plant; and E. Exquisita, very fresh and healthy; Statice Gilberti, a fine example; Ixora Williamsi, a good bush; and a capital plant of Erica cerinthoides coronata. Mr. Rann, gr. to J. Warren, Esq., Handcross Park, Crawley, took 2d place with a very fine Erica cerinthoides coronata, the picture of health, and freely flowered; Alla-

manda Hendersoni, good ; and Ixora Fraseri, in capital order. Mr. Meachen, gr. to C. Armstrong, Esq., Woodslee, Brighton, followed, and among whose collection was an excellent specimen of Pimelea decussata, as fresh and healthy as it is seen in May, and a large bush of Rondeletia speciosa major, not sufficiently in flower to be effective.

For four specimens Mr. Gilbert repeated his previous achievement, winning with medium sized bushes densely flowered of Erica Eweriana, fine colour ; Allamanda nobilis, with flowers of extra size ; a good Dipladenia amabilis, and a bright piece of Statice. Mr. Rann again came 2d, having a finely-coloured example of Dipladenia hybrida.

### Foliage Plants.

For six fine-foliage plants and six exotic Ferns, Mr. Rann turned the tables on his opponent, winning with grand specimens, the best being Thrinax elegans, some 14 feet by 12 feet, very healthy ; Dicksonia antarctica, with a fine head of fronds, and a stem some 10 feet in height ; Cycas revoluta, of large size ; a healthy plant of Croton Weismanni, and two good Gleichenias, G. Mendelli, well developed ; and G. rupestris glaucescens, in character ; Thyrsopteris elegans (from Juan Fernandez), a rare Fern, somewhat resembling Balantium culcita, but much finer in all its parts, was also in this collection. Mr. Gilbert followed in this case with a good set of plants, the best of which were Dicksonia antarctica and Adiantum farleyense among the Ferns, and Brahea filamentosa and Croton majesticus among the foliage plants. Mr. James, of Norwood, came 3d, having a grand example of Davallia Mooreana, and a fine Areca lutescens—Macrozamia Denisoniana being likewise a striking plant.

### Pelargoniums.

Mr. Gilbert won premier honours in all three of the open classes for zonal Pelargoniums—viz., for four zonals (not scarlet), four scarlet (showing in this class four plants that could hardly be surpassed in the quantity and freshness of their trusses of flower), and in that for six doubles. These and two other classes provided for amateurs and gentlemen's gardeners in the county of Sussex only, were all well filled with good examples of culture, Mr. Townsend, gr. to Captain Thompson, Dyke Road, winning in the two latter cases with very healthy plants.

### Groups of Plants.

Two competitors only entered for the substantial prizes offered for groups arranged for effect. Mr. Turner, gr. to Major Way, Wick Hall, won with ease, having a very light and diversified arrangement well balanced in colour. Mr. Meachen followed with a group that was showy by reason of the quantity of flower, but lacking in artistic taste, white sticks being very prominent, and two bushes of Crotons employed that greatly spoilt the effect of the whole.

Two groups of Ferns were very pleasing, they would, however, have been considerably enhanced in effect if a few Liliums could have dotted amongst them, these came from Mr. Jupp, gr. to G. Boulton, Esq., of East bourne, and Mr. Meachen.

For four variegated plants, the latter exhibitor beat Mr. Rann in a close competition, having very bright and fresh examples of Anthurium crystallinum (seldom seen in better condition) and Croton Queen Victoria (a fine young plant), Mr. Rann's best plants being Croton angustifolius and C. Evansianus, the latter : though rich in colour, is not a variety that brightens up a group.

For groups of Fuchsias and Coleus of decorative size, Mr. Fluck and Mr. Jupp took the 1st prizes, having capital examples of cultivation—the latter exhibitor also took the 1st place with four small but fresh plants in flower (limited to the county only).

### Table Plants.

For twelve table plants, Mr. Turner won with a clean lot of plants, Eulalia japonica variegata being one of the best ; Mr. James taking 2d.

For six, Mr. Miles, Victoria Nursery, Dyke Road, was 1st, with a good set—Cyperus natalensis, a green variety, with narrow foliage, and Acalypha tricolor were both good in this collection.

In the cut flower classes, of which there were numbers provided, Roses, Dahlias, and cut stove and greenhouse and herbaceous plants were the most prominent features.

### Roses.

In the Rose classes Mr. Slaughter, of Steyning, was the most successful exhibitor, taking 1st for twelve varieties in bunches of three trusses, for twelve Tea and Noisette in each division, and for twelve single trusses. The Tea-scented kinds were strongly shown by him in each of these classes ; the best were Marie van Houtte, Madame de Tartas, Belle Lyonaise, Madame Lambard, Anna Olivier, Catherine Mermet, Jean Pernet, Madame Cusin, Innocente Pirola, Madame Falcot, Comtesse Riza du Parc, and Jean Ducher ; his best Hybrid Perpetuals being A. K. Williams, Eugène Furst, Étienne Levet, Baroness de Rothschild, and Marquis de Castellane.

Messrs. Wollard were 1st, and Mr. Balchin 2d, for twenty-four varieties, showing, besides some of those above-named :—Prince Camille de Rohan, Duke of Wellington, Charles Darwin, Duke of Edinburgh, J. Stuart Mill, and Alfred Colomb, of Hybrid Perpetuals, and Bouquet d'Or and Niphetos among Tea-scented kinds. Mr. Piper, of the Uckfield and Piltdown Nurseries, also showed some good boxes in both sections.

### Dahlias.

For Dahlias no less than eleven classes were provided, and in each the competition was keen ; an excellent standard in quality pervaded the entire lot. For forty-eight show kinds, and twenty-four fancy ditto, Mrs. Seale, Vine Nurseries, Sevenoaks, was awarded the 1st prizes, with fine blooms ; Messrs. Cheale, The Nurseries, Crawley, being in each case 2d ; and with pompons and single kinds the latter firm won with comparative ease, having good collections.

In the smaller and limited classes, Mr. Vincent, gr. to Mr. Hart, Keymer ; Mr. Boothroyde, gr. to H. Coleman, Esq., Dover ; and Mr. Simmons, gr. to Rev. R. C. Hales, Woodmancote Rectory, were the chief and most successful competitors.

### Herbaceous and Hardy Cut Flowers

were a prominent feature, making an excellent display. Mr. Balchin was placed 1st, Mr. Van der Rees, Exotic Nursery, Tooting, 2d ; and Messrs. Cheal, 3d, each collection containing some striking features : the most prominent were Montbretia Pottsii, Lathyrus latifolius roseus, L. l. alba, Tritoma uvaria, Hyacinthus candicans, Acanthus mollis, Aster bessarabicus, Statice latifolius, S. incana hybrida, Pentstemon Mr. Gladstone, Gypsophila gigantea, G. paniculata, Helianthus multiflorus, Chrysanthemum Madame des Grange, Erigeron glabellus, Alströmeria brasiliensis, Gaillardia picta grandiflora, Harpalium rigidum, Anemone japonica alba, Rudbeckia Newmanii, Coreopsis lanceolata, Anchusa italica, Chelone barbata, Geum coccineum plenum, Echinops ruthenicus, Erigeron californicum.

In the smaller class for twelve varieties, Mr. Vincent was 1st, with a good box.

The competition for stove and greenhouse cut flowers was not so good as usual, a capital box, however, from Mr. Archer, gr. to Mrs. Gibson, Saffron Walden, took the 1st price, in which Cattleya crispa, Lapagerias, Dipladenias, Allamandas, Ixoras, and Ericas (E. Irbyana, E. Aitonia, &c.), were the most prominent. In Mr. James' 2d prize collection were Cypripedium Lawrenceanum and C. Harrisianum, Saccolabium Blumei majus, and Aerides quinquevulnerum, were very good.

Mr. Dixon, gr. to Sir T. M. Wilson, Bart., Searles Fletching, was 1st for a large collection of wild flowers, staged in three boxes ; Mr. Budd, of Pound Hill, Crawley, being 2d.

### Fruit.

Abundance of exhibits was the feature of the fruit classes, Mr. Goldsmith, gr. to N. Hoare, Esq., Kelsey Manor, Beckenham, was 1st for twelve dishes of fruit, with an excellent assortment of good quality ; Mr. Dixon following with a good lot. Victoria and Red Roman Nectarines, Royal George Peaches, Brunswick Figs, and Williams' Bon Chrétien Pears, were among the best dishes, besides the Muscat Grapes in the 1st collection.

Mr. Bates showed a good Queen Pine in its class, no other competitor having come forward.

The Grape classes, however, produced most abundant displays.

For six varieties, three bunches of each, Mr. Chatfield, gr. to T. Holman, Esq., East Hoathly, was a capital 1st, with Black Hamburgh (good), Buckland Sweetwater, and Black Alicante, Gros Colmar, and Muscat Hamburgh, the latter fine in bunch but not coloured. In the 2d prize lot, from Mr. Gore, The Gardens, Glenleigh, Hastings, were two good bunches of Mrs. Pearson.

Some fine bunches were shown in the Muscat of Alexandria classes, but most of them lacked finish. Mr. Miles, of Kemp Town Nurseries, was 1st, both for six and for three bunches, wanting a week or two more to perfect them in colour, otherwise they left nothing to be desired ; Mr. Goldsmith followed in each case with smaller bunches, but better coloured on the whole.

In the corresponding classes for Black Hamburgh Mr. Holston, gr. to R. H. Penney, Esq., Dyke Road, staged some first-rate examples of culture, and won 1st honours in either case ; Mr. Inglis, gr. to F. C. Lister, Esq., Cuckfield, being 2d, for three ; and Mr. Warren, gr. to Mrs. Hankey, Balcombe, for six bunches, each showing well.

In the county classes Mr. Spottiswoode, gr. to G. Duddell, Esq., was 1st, with Muscat, fine in berry ; whilst for Black Hamburgh Mr. Godley, gr. to Dr. W. Moore, Burgess Hill, was 1st, having good bunches, fine also in berry.

For Peaches, Mr. Miles was 1st, with very fine Barringtons ; and Mr. Balchin 2d, with handsome fruit of Princess of Wales ; and in the county class Mr. White, gr. to H.V. Shaw, Esq., Keymer, 1st, with fine Noblesse.

For Nectarines, Mr. Biggs, gr. to W. H. Loder, Esq., Crawley, took both 1st prizes, with Hunt's Tawny and Violette Hâtive, both fine dishes.

Figs are always fine at this show, but the competition was not so good as on former occasions, Mr. Butler, of Lancing, taking both 1st prizes, with fine large fruits of Brown Turkey and Madagascar.

For Plums Mr. Maxted, gr. to the Marquis of Ely, Kearsney Abbey, took 1st place, with fine Jefferson ; and Mr. Inglis the 2d, with large Washington.

Mr. Holman was the prize winner for Green Gages, showing very good fruit.

Cherries (Morello) were a fine lot in each class, Mr. Booth, gr. to W. Yates, Esq., Uckfield, taking both 1st prizes with large fruit.

Apples were not so fine as usual, but many good dishes were shown. Lord Suffield, Hawthornden, Worcester Pearmain, and Astrachan were the most prominent.

Mr. Booth took 1st for culinary, and Mr. Virgo, Wonersh Nursery, Guildford, for dessert fruit. Williams' Bon Chrétien Pears were the favourites in either class, Messrs. Goldsmith and Remnant taking the 1st prizes.

For six kinds of Apples Mr. Gore came in 1st, Nelson's Glory and Wellington being good ; Mr. Remnant 2d.

Tomatos were shown finer than we have seen them all the season, Trophy taking the 1st prize for Mr. Walder, gr. to F. C. Cornish, Esq., Burgess Hill. Reading Perfection, also very fine, from Mr. Stringer, Rose Cottage, West Brighton, being 2d.

### Miscellaneous.

Mr. Balchin filled the entire available space of one of the rooms in the Pavilion with a collection of decorative plants, prominent among which were a specimen of Cattleya crispa, having forty-one flowers on six spikes, just at their best, and a large plant of Pancratium fragrans with six spikes, Tuberoses, Vallotas, Rochea falcata ; small and choice Ericas, with handsome Palms and Dracænas, Acalypha tricolor, Eulalia japonica variegata, and other plants made the group very attractive.

Messrs. Laing & Co., of Forest Hill, sent a number of choice single and double Begonia blooms, varied and rich in colour.

Mr. James contributed a group of choice and rare plants, prominent among which were Sarracenias and other insectivorous plants.

Mr. W. Miles, West Brighton Nurseries, contributed a large group of fine-foliage plants, among which were some Musas and a plant of Areca sapida, also well grown Nephrolepis davallioides furcans in better form than it is usually seen. *F. H.*

## WARWICKSHIRE HORTICULTURAL : September 2 and 3.

THE exhibition that was held in the Jephson Gardens, Leamington, on the days above named, gave abundant evidence that horticulturists in this and the surrounding district are in no way behind their brethren in other parts of the country in the several departments of gardening. Plants, both flowering and fine-leaved, were very well shown, as also cut flowers, fruits, and vegetables. A notable feature of the show was, that few exhibits of an inferior description were present. In many cases exhibitors, who had to be content with a 2d or a 3d award, staged productions little inferior to those of their more fortunate compeers.

### Stove and Greenhouse Plants.

In the open class for ten in bloom, Mr. W. Finch, gr. to James Marriot, Esq., Coventry, was a good 1st, staging a good group, the best of which were Lapageria rosea, a very large plant, splendidly flowered ; Sobralia macrantha, with about a dozen blooms ; the seldom-shown Strelitzia Reginæ, bearing eight or nine of its singular heads of flower ; Dipladenia amabilis, Allamanda Hendersoni, and Bougainvillea glabra, well bloomed and fresh ; 2d, Mr. Coysh, gr. to E. H. Wood, Esq., Newbold Revel, Rugby, whose most noteworthy specimens were Lapageria rosea, Ixora coccinea, Allamanda Hendersoni, and Tabernæmontana florepleno.

Six stove and greenhouse plants.—With these Mr. C. Finch, gr. to W. R. Mann, Esq., Leamington, took the lead, having in a well-managed half-dozen a grand example of the white Lapageria, covered with its charming flowers ; Clerodendron fallax, Bougainvillea glabra, and Allamanda Hendersoni. Mr. Hopkins, gr. to J. D. Barbour, Esq., Leamington, who was a close 2d, had, with others, an unusually fine specimen of Lagerstrœmia indica some 8 feet high by 6 in diameter, profusely studded with its remarkable pink flowers, and Dipladenia amabilis, nicely bloomed.

Six stove and greenhouse plants, three in flower and three fine-foliage (amateurs).—1st, Mr. Morris, gr. to R. Moon, Esq., Coventry, showing in a creditable collection Eucharis amazonica, with about three dozen good spikes, and Dipladenia amabilis carrying numerous bunches of unusually fine flowers : Croton angustifolius and Alocasia metallica in the same group were well grown ; 2d, Mr. W. Finch, who had Oncidium flexuosum and Allamanda cathartica very nicely bloomed. With these were good specimens of Cocos Weddelliana and Kentia Belmoreana.

### Fine-foliage Plants.

With ten in the open class Mr. Coysh had 1st, staging a bright looking group, the best being Croton Weismanni, C. undulatus, Phœnix dactylifera, and Cycas revoluta ; 2d, Mr. Moorhouse, gr. to H. Nelson, Esq., Warwick, who in a large and effective collection had fine examples of Seaforthia elegans, Alocasia Veitchii, and Maranta Veitchii.

Six Coleus.—1st, Mr. C. Finch, with large specimens ; 2d, Mr. Morris.

### Zonal Pelargoniums

were very well shown, and being present in considerable numbers made an effective display. Mr. Hopkins took 1st, with six ; Mr. West, gr. to F. W. Arkwright, Esq., 2d.

### Fuchsias.

With six nicely flowered moderate sized plants, Mr. Morris had 1st, Mr. West 2d.

### Tuberous Begonias

in sixes, were shown in good condition, good kinds, well flowered, Mr. West taking the lead with nicely managed plants, Mr. F. Perkins 2d.

### Groups of Plants Arranged for Effect

formed quite a feautre in the exhibition, and being unusually well done were very attractive, Mr. F. Perkins, Regent Street, Leamington, taking a decided lead, with an arrangement in which more originality was displayed than in the ordinary sloping combinations of flowers and

foliage, now becoming almost irksome to look upon. Less colour, with more green surface, was the leading feature in the arrangement, the flowering plants being more concentrated than usual; several mounds raised somewhat above the level of the green setting material, in which the taller plants were stood, contributed no little to the effect of the group; Messrs. Jones & Sons, Shrewsbury, who were 2d, had also a nice group.

Prizes were likewise offered for small groups or baskets, such as suitable for a recess, the 1st prize going to Mr. Coysh, who had a tastefully arranged exhibit; 2d, Messrs. Jones & Sons.

AMATEURS' DIVISION.

Four stove and greenhouse plants.—1st, Mr. F. Astell, showing small plants, nicely flowered.

Three Ferns.—1st, Mr. Rogers, with nicely grown plants.

Six Coleus.—1st, Mr. Astell.

Four Fuchsias.—1st, Mr. Astell, who had small plants beautifully bloomed.

Four Begonias,—1st, Mr. Astell.

With a window-stand Mr. Rogers was 1st, showing a tastefully constructed stand nicely filled with flowering and foliage plants.

CUT FLOWERS.

There was a very large display of cut flowers of various kinds, hardy and exotic.

With twenty-four Dahlias, Mr. W. Burbery, Kenilworth, was well to the fore with well-developed, full-sized blooms; 2d, Messrs. Kimberley & Sons, Coventry.

Twelve Dahlias. — 1st, Mr. Burbery; 2d, Messrs. Jones & Sons.

Roses were in nice condition for so late in the season and the ungenial weather. With thirty-six, Messrs. Perkins & Sons, Coventry, took the lead, staging a nice lot of young flowers; 2d, Mr. F. Perkins, who likewise had a creditable lot of blooms.

Gladiolus.—Here Messrs. Jones & Sons were a long way ahead, with about half a hundred spikes, nicely shown; 2d, Messrs. Kimberley & Sons.

Hardy herbaceous flowers, twenty-four varieties.—1st, Mr. F. Perkins, having a beautiful collection, nicely set up; 2d, Messrs. Jones & Sons.

Twenty-four bunches of stove and greenhouse plants, distinct varieties.—Here again Mr. F. Perkins took 1st honours, with a very fine lot, in which most of the best kinds of stove flowers were represented; Mr. Coysh, who was 2d, also had a very good stand.

DINNER-TABLE DECORATIONS.

These had a tent to themselves, and made an effective display. The competition was close in the class for a table to dine twelve people, 1st honours being taken by Mr. F. Perkins, with a table on which the tall now-all-but-out-of-fashion glass stands were elegantly arranged with flowers and green foliage; one of the best features in this exhibit was that the flowers were not too much crowded. Messrs. Jones & Sons were a good 2d, their table being similar in its arrangement to that which took 1st; 3d, Mr. Coysh.

Single centre-piece (amateurs).—1st, Mr. Stevens, Warwick, with a March stand, nicely filled; 2d, Mr. Barret, Rugby.

Some beautiful bouquets were shown in the open class for two—bride's and bridesmaid's—by Messrs. Perkins & Sons and Mr. F. Perkins, who, in a very close run, took the prizes in the order their names are given; both the competitors are noted for their productions in this fascinating branch of floral art, and evidently both had been straining a point to win.

In the amateurs' class for bouquets, Miss A. Rogers had 1st; Mrs. Lloyd Evans, Warwick, was 2d.

FRUIT

was well shown, especially Grapes, and the different hardy kinds now in season, and which the climate and soil hereabouts are well suited to. With ten dishes Mr. Hopkins took 1st, having a nice collection, in which Black Hamburgh and Golden Hamburgh Grapes, Pitmaston Orange and Elruge Nectarines were the best.

Single Pine.—1st, Mr. Hopkins, with a Queen; 2d, Messrs. Kimberley & Sons.

Two Melons.—1st, Mr. Smallman, Leamington, with a good pair of Golden Gem; 2d, Mr. Coysh.

Three bunches of Black Hamburgh.—1st, Mr. W. Finch, who had nice bunches very well finished; 2d, Mr. Thompson, gr., to Colonel Woollcombe, Coventry, who also staged good bunches, quite black, but a little thin of bloom. Three bunches of white Grapes.—Here Mr. Smallman took a decided lead, with large and finely finished examples of Buckland Sweetwater; 2d, Mr. W. F. Mills, gr. to E. Flower, Esq., Stratford-on-Avon, having Muscat of Alexandria, fine bunches and even berries, but wanting in colour.

Basket of hardy fruit, unlimited as to number of varieties.—1st, Messrs. Kimberley, who, in a good exhibit, had nice examples of Moor Park Apricots, Figs, Peaches, and Nectarines; 2d, Mr. S. Corbett, Coventry.

Three dishes of Plums.—These were well shown, Mr. Hopkins taking the lead with Belle de Louvain, Washington, and Pond's Seedling; 2d, Mr. Smallman, having Rivers' Golden Gage, Washington, and Victoria.

Three dishes of Apples.—These also were in great force, Mr. Hopkins again coming to the front with Red Astrachan, Kentish Fillbasket, and Lord Suffield: 2d, Mr. F. Perkins.

Three dishes of Pears.—1st, Mr. S. Corbett; 2d, Mr. Hopkins.

Six dishes of fruit (amateurs).—1st, Mr. Corbett, staging nice examples of Black Hamburgh Grapes, Royal George Peaches, and a Trentham Hybrid Melon.

Messrs. Smith, of Worcester exhibited, not for competition, a group of miscellaneous stove and greenhouse plants, and cut Roses, Gladiolus, and herbaceous flowers.

From Messrs. Hewitt & Co., Solihull, near Birmingham, came Begonias, Ferns, and various other plants, very nicely shown.

Mr. F. Perkins contributed his new Pelargonium Volonté Nationale white variety, Lilies, and double and single Dahlias.

Mr. S. Harston had a large collection of fruit and vegetables.

## SHIRLEY, MILLBROOKE, and FREEMANTLE: August 26.

THIS Society, which exercises horticultural jurisdiction over a large and prosperous suburb of Southampton, held its twentieth summer show in Whitedwood Park on the above date, and, contrary to its too frequent experience, was favoured by delightful weather. The show displayed many excellent features, well maintaining its reputation for the average quality of its exhibits. Plants were shown generally in capital form, the competition between such admirable local growers as Mr. Wills, gr. to Mrs. Pearce, The Firs, Bassett, and Mr. Amys, gr. to the Hon. Mrs. Yorke, Netley Castle, in the collections of twelve stove and greenhouse plants, was exceedingly close, and gave the judges no little trouble. Mr. Amys was eventually placed 1st, having a fine Alsophila excelsa Tree Fern, a huge Cycas revoluta, good Croton interruptus, Davallia Mooreana, Allamandas Schottii and Hendersoni, Bougainvillea glabra, and Ericas purpurea obbata and Austini, the latter 4 feet over and grandly bloomed, and other plants. Mr. Wills' chief features were a fine Latania borbonnica, good Cycas revoluta, and Areca lutescens, a grandly flowered Statice profusa, 5 feet over; fairly good Clerodendron Balfourianum, and Phœnocoma prolifera Barnesii, &c. Messrs. J. C. & H. Ransom, Hill Nurseries, came 3d.

In the usual decorative group class those two latter were the only competitors, Mr. Wills showing the best arrangement, a little too heavily dressed with Palms, but containing none the less many good decorative plants, amongst which some fine tufts of the crimson Celosia told with good effect. The Messrs. Ransom's group included the too little seen Francoa ramosa, with the usual combination of Begonias, Gloxinias, Ferns, &c.

In the competition for single specimen plants, Mr. Wills was a long way ahead of others with a truly superb Fuchsia, Lye's Charming, a grand specimen some 8 feet in height, and proportionately broad at the base, perfect in form, and one mass of foliage and bloom. The same exhibitor was 1st with six Ferns, really finely done specimens, all even and bright in colour—just the sized plants for such an exhibition. These comprised Adiantums cardiochlæna, and concinnum latum Dicksonia antarctica, Davallia polyantha, Nephrolepis davallioides furcans, and Microlepia hirta cristata.

Mr. A. King, gr. to A. Barber, Esq., Shirley, had four fine Adiantums of kinds, and Davallias Mooreana and bullata.

Mr. Wills always exhibits Begonias well, and his plants on this occasion, though a little past, were fine specimens some 4 feet in height, well grown and flowered. Mr. W. Betteridge, an amateur grower, also staged some most meritorious, though smaller plants in profuse bloom.

Zonal Pelargoniums have always been well shown in this locality, and although only Mr. Wills and the Messrs. Ransom were the chief exhibitors, their specimens were grand ones. Mr. Wills had the best six singles, large plants, and literally masses of bloom, in Beauty of Surrey; Rev. J. Atkinson, John Fellows, Miss Wakefield, Melissa, and Pirate, chiefly old kinds. The Messrs. Ransom had the best six doubles, superbly bloomed and compact plants, from 30 to 36 inches through, but the kinds were not named. Such specimens as these zonal Pelargoniums were are seldom seen at metropolitan shows. A very interesting feature was a charming mixed collection of double and single zonals in small pots, shown also by the Messrs. Ransom, giving an admirable opportunity to visitors to select newer varieties, but unfortunately none were legibly named.

FRUITS.

The best Grapes in each of the classes for two bunches came from Mr. W. Fowll, of Freemantle, who had in blacks good Hamburgh well coloured and matured; Mr. Amys coming 2d with the same kind, finer in berry but rather wanting in colour.

In the white class Mr. Fowll had good Muscats of Alexandria, and Mr. Amys was again 2d with handsome bunches of Foster's Seedling. The latter was 1st in a good competition for six dishes of fruits, having excellent white and black Grapes, Peaches, Apricots, Melons, &c.

Apples were well shown, the best dessert kinds being Irish Peach and Red Astrachan, and the finest kitchen Apples, Lord Suffield and Kentish Codlin.

Good Peaches, Pears, and other fruits were shown in the respective classes.

VEGETABLES.

Vegetables were so good generally as to lead to wonder how they could have been produced during such a season of drought. Mr. W. Joy, Hill Lane, was 1st, with a dish of twelve Tomatos, having as perfect and fine a sample as we have seen this season; the sort was either Trophy or Stamfordian, but was not named. Mr. Wills came 2d, also with a fine clean sample.

There were nine bushels of Potatos shown in the usual Hampshire oval bushel baskets, the best a capital sample of International, coming from Mr. W. Cole, Rousham; the next best were Bresee's Prolific, from Mr. Wilkes, Old Shirley; and the third best, Idaho, a pinkish round, came from Mr. Hallett. Giant King, White Elephant, and First and Best, were also shown.

In the collections of twelve kinds Mr. W. Cole had good clean examples of Vicar of Laleham, Grampian, Reading Russet, Adirondack, White Elephant, Myatt's and International Kidneys.

Onions were remarkably good, Mr. G. Payne showing some grand Giant Roccas, other kinds being very large also; and Mr. Haddon had the best spring-sown samples, good white Spanish, still full of growth.

Carrots, Parsnips, Beet, &c., were very good indeed, and cottagers' plants and vegetables were excellent.

## PAISLEY HORTICULTURAL: September 3 and 4.

WITHIN the George A. Clark Hall the autumnal exhibition of the Paisley Horticultural Society was held, and was remarkable for the extent, variety, and quality of exhibits, and for the vast amount of local interest manifested in it. Shows, to be succesful, must be patronised in a large measure by the "upper ten," and this was abundantly evident here by the character of the audience that listened to rather a telling and effective "opening" speech by Major Coats, which appears to the writer to be generally interesting, and might be worthy of a place in your columns. The working classes crowded the hall both evenings, so that financially as well as horticulturally the exhibition realised all that its promoters could hope for or desire.

Coming to the articles exhibited, the post of honour—that is, the filling of the large orchestra—was entrusted to Mr. James Beveridge, gr. to Archibald Coats, Esq., Woodside, and he did it well. In the background were splendid specimens of Kentia Fosteriana and K. Belmoreana, with Cycas revoluta, the elegant Pritchardia pacifica, Thrinax elegans, Dion edule, several Zamias, which from their elegance and diversity of foliage at once gave a character to the specimen and other plants making up the frontage, comprising such popular Heaths as Marnockiana, jasminiflora alba, Austiniana, Irbyana; several nicely flowered Ixoras and Eucharis; while the underground of the grosser endogenous vegetation was lightened up with several good and well flowered half specimens of show and fancy Pelargoniums, the immediate frontage being made up of Maidenhair and other Ferns again brightened by the arching spikes of the Princess of Wales Odontoglot, and the feathery inflorescence of the pyramidal Celosia, comprising in all about half-a-dozen vanloads of plants.

The four tables running along the hall were filled with specimen plants. One table was literally crammed with highly cultivated plants from the gardens of Mr. Stewart Clarke, M.P., and put up by his enthusiastic gardener—Mr. Allan Henderson. Here were specimens of Ericas some 5 feet in diameter of Marnockiana, no less than three specimens of E. retorta major, all in abundant bloom; then E. Irbyana, and the two pet seedlings of two veterans—one gone to rest, the other bent with age, but as keen as a "laddie"—we mean E. MacNabiana and E. Turnbulli. Seldom do we see such cultivated plants at exhibitions. These were backed by several Palms, one of which, Verschaffeltia splendida, was simply unique, as was also a magnificently grown plant of that dark bronzy Pitcher, Nepenthes Mastersiana, with pitchers in perfection. There were some fine lots of Orchids here, chiefly Odontoglots, a good form of Veitch's Masdevallia, a splendidly grown plant of Lælia elegans, a charming Oncidium incurvum, and some beautiful specimen Lilium lancifolium.

In a *vis-à-vis* table was the collection of Mr. Coats, of Fergusiie; put up by the acting President of the show Mr. McDonald, were some very fine Palms and Ferns, chief among the former were Areca sapida, and among the latter, Davallia Mooreana, which takes front rank for exhibitions of this kind, interspersed with several effective Crotons, some magnificently bloomed Chrysanthemums, immense plumes of Celosia pyramidalis, fine coloured Dracænas, and profuse flowered Vallotas, which along with the usual front "padding" made up a very effective table.

Messrs. Paul & Sons, W. Dickson, and A. Pattison had effective tables of miscellaneous plants. The chief honours in the competition list went to Mr. J. Maxwell, gr. to Mrs. Arthur Barshaw, his two red and white Lapagerias and his Anthurium Scherzerianum being well grown and abundantly flowered plants.

The Mignonette from Mr. William Cameron, Fergusiie Park, was very creditable, as were also the Tree Ferns, foliage plants, and table plants—particularly the latter, from Mr. James Maxwell, and from Mr. Henry Maxwell, Ralston, and Mr. Alexander Baird, Cheepel House.

Cut flowers were numerous, and of fair quality throughout. Mr. James Anderson, Meadowbank, was awarded a First-class Certificate for a good plant of the singular succulent-looking Angræcum Leonis. It had two flower-spikes, each four-flowered, and its beautiful ivory blossoms, with its long tail twisted about like a tendril, together with the delicious sweetness of its perfume, commanded considerable attention.

Fruit was a fair exhibition, Mr. John McGregor and Mr. C. M. Donald taking 1st place for black and white Grapes respectively, and Mr. Henry Maxwell having 1st honours for a basket of fruit.

Vegetables were largely and well shown.

An interesting feature was the prizes for *bonâ fide* window-grown plants, comprising such things as the "Bour Tree," which is one of the most enduring of plants under suffrage [Will our reporter kindly tell us what this may be?—ED.]; Fuchsias, Ivies, Musk, Thyme, "Aaron's Beard" Ferns, particularly the Hart's-tongue, all evidencing from their attenuated looks "back-alley" quarters. This is a very good thing to go for, as not

tending to educate the masses, but to give them an additional interest in flowers, plants, and plant showing. *J. A.*

## GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

THE autumn exhibition of this Society was held in St. Andrew's Hall, on Wednesday, September 2, and was considered the best autumn exhibition held in Glasgow within the last twenty years. The entries in the various classes numbered nearly 1500. The most extensive and effective collection of plants was that exhibited by Messrs. J. & R. Thyne, the platform being entirely filled with Palms, Ferns, Pitcher-plants, rare Orchids, Crotons, &c. A First-class Certificate was awarded to a fine group of Croton Thyneii, also for C. Regina, the latter being shown for the first time. Various floral decorations, such as bouquets, wreaths, &c., were shown by the same firm (not for competition), and which were greatly admired.

Councillor Campbell, fruiterer, 18, Gordon Street, filled a large table with fine specimens of home and foreign fruit, which was deservedly highly commended for quality and tasteful arrangement.

Messrs. William Aitken & Sons, Lenzie, had fine stands of Carnations, Gladioli, Pentstemons, &c.

Messrs. Dobbie & Co., Rothesay, sent stands of their noted strains of florists' flowers, which were highly commended by the judges. They also exhibited their new white Turnip (Model), an excellent sort.

Mr. William Campbell, nurseryman, Auchenraith, had a choice collection of Carnations and Picotees, his Carnation named Snowflake being awarded a First-class Certificate.

Mr. John Sutherland, Lenzie, had a fine display of seedling Pansies, many of which will doubtless make their mark at future exhibitions, several being awarded First-class Certificates.

Messrs. A. Pattison & Son, Paisley, were also awarded a First-class Certificate for their seedling Pansy Lord Rosebery.

Mr. Thomas Smith, nurseryman, Stranraer, exhibited a fine stand of Roses, which were highly commended.

Mr. Cuthbertson, Rothesay, showed some fine stands of the old Scotch Marigold, which had been much improved by him.

Mr. Lister, Rothesay, had a very fine collection of show and fancy Pansies, very highly commended.

Mr. J. Baxter, Daldowie, exhibited two seedling Violas, distinct and beautiful

Mr. William Kerr, Dargavil, Dumfries, sent a splendid collection of Potatos, comprising seventy varieties, some of which were seedlings not yet in commerce. One of the latter was named Franc Gibb Dougall, in compliment to the energetic secretary of this Society. A Certificate of Merit was awarded to the collection.

GROUPS OF PLANTS.

Among the collections forwarded for competition 1st place must be given to the collections of plants arranged for effect, and filling tables 12 feet by 6. Five collections competed for the three prizes offered. First prize was awarded to James Mitchell, gr. to — Hunter, Esq., Newmains, for an excellent collection, beautifully arranged. This collection contained a good plant of Cattleya crispa, two fine Yuccas, Palms, Ferns, grasses, and various variegated plants. Second prize was awarded to John Matheson, gr. to J. L. Henderson, Esq., West Bank, Partick. This collection consisted of Palms, Vallotas, Nerines, a well bloomed Ixora, and a few Orchids, a want of finish spoiling what was otherwise a fine table. Third prize was awarded to A. Millar, gr. to Robert Ward, Esq., Baillieston, the plants in this collection being too large for the size of this table.

PLANTS.

In the class for four stove and greenhouse plants, Thomas Hogg, gr. to John Gordon, Esq., Aikenhead, showed a grand Statice profusa, 3 feet across, and densely bloomed; a good Erica Irbyana, Phœnocoma prolifera var. Barnesii, a well-managed plant; and Anthurium Andreanum. Mr. Hogg was also 1st for exotic Ferns, Gleichenias Mendelii, dichotoma, and speluncæ, all good; also a fine plant of Microlepis hirta cristata. Mr. Hogg had the only exhibit of three Orchids. Mr. Combie, Greenock, was 1st for a single specimen Orchid.

John Matheson, gr. to John L. Henderson, Esq., had 1st prize for foliage plants, his Croton Weismanni and Cycas circinalis being in fine condition.

The other collections shown in this class combined to make a most effective table.

CUT BLOOMS.

Mr. M. Campbell, Auchenraith, was awarded the Silver Medal given by Mr. W. G. Taylor, jeweller, Trongate, as well as 1st prize in the nurserymen's class, for twenty-four blooms of Dahlias.

Some of the finest examples were Harrison Weir, a most perfect bloom; Statesman, Hon. Mrs. Wyndham, Gaiety, W. H. Wiliams, Earl of Ravensworth, Prince Bismarck, Mrs. Gladstone, Mrs. Langtry, Lottie, and Eckford.

Messrs. James Cocker & Son, Aberdeen, had 1st place for twenty-four blooms of Roses, amongst which were fine blooms of Merveille de Lyon, White Baroness, Duke of Teck, Pride of Waltham, Countess of Rosebery, John Stewart Mill, Marie Baumann, and A. K. Williams.

Pansies were well represented, Mr. John Sutherland, Victoria Nursery, Lenzie, taking the lead with a stand of perfect blooms remarkable for size, substance, and form.

Single Dahlias were well shown by Messrs. John Lamont & Son, Musselburgh.

Mr. S. Boys, Uddington, had fine Ericas, his E. Marnockiana gaining the prize for the most meritorious plant in the exhibition.

VEGETABLES.

The vegetables were a wonderful show, the chief prize-taker being D. M'Bean, gr. to A. Cunningham, Esq., Craigend, Johnstone. His box of vegetables was superb, and easily gained 1st position. Mr. M'Bean had also 1st for Leeks, Onions, Carrots, Cauliflowers, Savoys, Parsley, and Parsnips, most of them being of high merit.

Alexander Bogie, Kilmarnock, showed the best Potatos, his Village Blacksmith being very fine.

Fruit was not largely shown. Black Grapes good; white not so well as we usually see them here. *R. B.*

## MASSACHUSETTS HORTICULTURAL.

BOSTON: *Aug.* 15.—The free exhibition held to-day from 12 noon to 3 P.M. in the Society Hall, was the best of the kind that has been made this season. David Allan, gr. to R. M. Pratt, showed some fine Black Hamburgh, and J. S. Farbow some Canon Hall Muscat Grapes. This was prize day for Gladioli and Phlox Drummondi, and the display was large and fine. John B. Moore & Sons again made a good display of of H.P. Roses; W. H. Spooner exhibited, for the first time, cut blooms of the Stanwell Perpetual Scotch Rose; R. T. Jackson showed flowers of the new Montbretia crocosmæflora: S. A. Chever, a fasciated spike of Lilium superbum; N. L. Wilson, a plant of Caladium esculentum, with a flowerspike; C. E. Grant showed a vase of Nemopanthes canadensis, full of handsome red fruit; D. Zirrgiebel was awarded a Certificate of Merit for eight pots of dwarf French Asters. On the fruit table we noticed some fine Oldenburg, Red Astrachan, and Williams' Apples, some Clapp's Favourite, Manning's Elizabeth and Brandywine Pears. The show of vegetables was excellent; the most noticeable were four Hackensack Melons, the largest weighing 15 lb.

*Aug.* 22.—The exhibition to-day was very good. The most interesting and striking feature was the fine collection of Water Lilies from N. S. Simpson, of Yarmouthport, who was awarded a Silver Medal for cultural skill, shown in Nymphæas rubra, devoniensis, zanzibarensis, aurea, dentata, alba, candidissima, &c. Mrs. F. B. Hayes sent a large collection of H.P. Roses, Zinnias, and Bignonia præcox, the latter with very showy flowers as large as those of B. grandiflora, but, unlike that species, quite hardy here. In habit it is between a shrub and a climber. The display of Gladioli made by James Cartwright was thought to be the best ever made in the hall. W. E. Endicott exhibited hybrids between G. gandavensis and G. purpurea auratus, showing the peculiar markings of the latter species. C. M. Hovey showed Cactus Dahlia Cochineal, also Cannas Vesuvius, Ehemanni, Newtoni, and Saffrano. Mrs. P. D. Richards exhibited a large collection of wild plants, including six pieces of Desmodiums and six of Gerardia, also Convallaria multiflora. E. H. Hitchings exhibited pink pond Lilies, also Chrysopis falcata, Glaux maritima in fruit, and Utricularia clandestina. To-day was prize day for Asters. E. Sheppard & Sons, Lowell, took the 1st prize in a class of thirty blooms, not less than ten varieties, Truffaut's Pæony flowered, and 1st prize for thirty blooms Victoria, not less than eight varieties; also 2d prize for thirty sprays of pompons. This was a very fine collection in every respect. The show of fruits was very good, and included Bartlett, Tyson, Rostiezer, and Clapp's Favourite Pears; Peaches, Hale's Early. B. G. Smith showed some Lima Beans, some of which measured 1½ inch in length. (*Correspondent.*)

## "HORTI FLORIDI."

(A RARE OLD GARDENING BOOK, A.D. 1617.)

By the courtesy of Mr. W. Baylor Hartland, of Cork, I saw in April last a very curious English translation of an old Dutch floricultural work, a volume of oblong shape, the exact title of which I cannot give, as the titlepage, &c., was wanting. The first of the remaining 181 leaves, however, contains an ornamental device, in the centre of which is in Latin the verse from Matthew, chap. vi., beginning "Consider the Lilies, how they grow," &c., and below we read, "Formulis Crispiani Passæi et Joannis Waldnelij." Then follow descriptions and oblong plates of flowers, fruits, and vegetables, and if we are to judge by the number of the forms represented, the Narcissus, after the Tulip, was then a most popular flower. On plate 38 N. Pseudo-Narcissus is represented. Then we come to a plate of a double variety, called Pseudo-Narcissus Calice pleno multipl. colore luteo, Dod., and which seems to be the kind now called N. Capax (= N. Eystettensis). On the same plate is another double called Narcissus duplice tuba flor. lut., Clus., or double trumpet, and this bears some resemblance to the double wild English Daffodil. Both these figures seem to have been reproduced at a much later date in Hale's *Eden, or a Compleat Body of Gardening*. On plate 4 are representations of Narcissus maxi. dupl. foliis, a semi-double N. Incomparabilis, a large single variety being also shown on the same plate beneath the legend "Narcissus omnium maximus, or Narcissus Nonpareille," a bold yellow N. Incomparabilis, afterwards represented in Hale's *Eden* also.

Plate 19 shows two forms of N. poeticus, N. medio purpureus and N. medio luteus, the latter with a fasciated scape and three flowers—one semi-double.

On plate 20 two forms of Narcissi are shown which appear a little different from aught in our gardens to day. The first resembles N. Bernardi, having a whitish perianth and a yellow cup.

Plate 21 shows leaves, bulbs, and flowers of N. totus albidus, which is, no doubt our N. papyraceus, albeit that in the copy now before me the artist has put a saffron rim to the cup, of which matter of colouring in this book more anon. The other variety is Narcissus flore multiplici, or double Poet's Narcissus.

Plate 22 represents a very fine variety of N. incomparabilis with broad perianth and a large cup having an orange rim. The companion plant on the same plate may be Schizanthes orientalis, a three-flowered scape, but the cup is not gashed so deeply, and the flowers seem larger, so that it possibly may be a variety not now in cultivation.

Plate 23 shows two forms of what we now know as N. triandrus, one a yellow-flowered and the other a white one. They are referred to on the plate as N. juncifolius amplo, cal. lut., and this yellow form reminds one of the N. calathinus (= N. odorus var.) of the *Botanical Magazine*, t. 934. The white form seems to be N. triandrus albus, and is here called N. juncifolius alio flore reflexo. The habitat is given as Pyrenæum, "in Pyrenæis montibus frequens invenitur."

Plate 24 contains two forms of N. odorus, one double, and the other (N. rugulosus) single.

On plate 41, N. intermedius is well represented under the name of Narcissus Juncifol. major; and on the same plate is a good portrait of the common Jonquil, here called N. Juncifol. minor. Some plates and descriptions have been added at the end of the book, and of these two are devoted to Narcissi. On plate 8 is N. minimus (true) is figured as N. pumilus, and a large form of N. Pseudo-Narcissus, N. Pseudo-Narcissus, hisp. mai., is also given. On the plate following 09, two varieties of N. bulbocodium are figured, viz., a small pale sulphur (like N. citrinus minor) and a small white which may be N. Graellsii. Both are said to come from the mountains of Spain.

Much more might be said of this old work, but I prefer on this occasion to limit my review of it to its Narcissus plates, hoping that Mr. Kerlage or some other of our Dutch bulb loving friends may be able to enlighten us as to its proper title and history.

To a lover of bulbous plants this book is a great treasure, and the instructions given for colouring the plates are so quaint and interesting that I may be excused for alluding to them here. One example may suffice as an illustration:—

"The great winter Daffodil, or Narcissus flower' (= Sternbergia lutea).—"This Narcissus cometh in the harvest, and is called the great winter Daffodil. The one is thicker of leaves (= semi-double) than the other; the single one is of the coloure of masticot, being thinly laid on, shadowed with sad yellow; the knobes in the flower are like vnto masticot, but the spriggs wherevpon the little knobes doe stand are of a light greene. The steale or stumpe where the flower comes forth of is of a pale masticot-yellow at the vpper part of it, but below it is of a pale greene, and is painted with sad yellow and aghe coloure, and shadowed with omber and sad yellow, and a little black red altogether, and the vein must well be observed that passeth through the middle of the leaves because of there shyninge glance."

A similar description is given for all the flowers engraved, and at the end of the volume the translator has a curious note hoping that he has made the subject sufficiently clear to an Englishman's understanding. This note is "from Utrecht, this 12th of September, 1615; yours, E. W."

In addition to the coloured plates, the initial letters (wood blocks) are quaint, and are coloured with great care in the copy before me.

As before stated, the titlepage is torn away, but on the sheet at the commencement of the *Flowers of Sommer* (2d book) we find the imprint, "Arnheimi, Ex-Officina Ioannis Ianfzonij, Anno, 1617, or twelve years earlier than Parkinson's *Paradisus*, which was published in 1629. Should any reader possess a complete copy of this quaint old book, it would be interesting to know more of its authorship or origin. *F. W. Burbidge.*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 9, 1885.

| MONTH AND DAY | BAROMETER: Mean Reading Reduced to Sea-level | BAROMETER: Departure from Average of 18 years | TEMPERATURE OF THE AIR: Highest. | Lowest. | Range | Mean for the Week | Departure of Mean from Average of 30 years | Hygrometrical Deductions from Glaisher's Tables, 5th Edition: Dew Point. | Degree of Humidity. Sat. = 100 | WIND: Average Direction. | RAINFALL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. | In. | In. | ° | ° | ° | ° | ° | | | | In. |
| 3 | 29·45 | −0·45 | 71·2 | 57·0 | 14·2 | 63·0 | + 3·9 | 55·6 | 77 | S.W. S.S.W. | 0·00 |
| 4 | 29·45 | −0·45 | 69·5 | 55·1 | 0·18 | 58·5 | + 0·8 | 59·0 | 73 | S.W. | 0·04 |
| 5 | 29·43 | −0·48 | 69·0 | 0·18 | 7·48 | 53·1 | − 0·3 | 49·6 | 72 | S.W. | 0·00 |
| 6 | 29·50 | −0·41 | 73·0 | 48·9 | 24·1 | 59·1 | + 0·9 | 52·0 | 75 | S.W. | 0·00 |
| 7 | 29·41 | −0·50 | 61·5 | 56·0 | 5·5 | 58·0 | − 0·4 | 57·6 | 93 | S.W. | 0·65 |
| 8 | 29·62 | −0·29 | 68·0 | 59·8 | 17·5 | 57·6 | − 0·7 | 52·1 | 82 | S.W. | 0·51 |
| 9 | 29·61 | −0·29 | 64·3 | 49·8 | 14·5 | 52·6 | − 1·1 | 49·8 | 69 | S.W. | 0·00 |
| Mean | 29·53 | −0·41 | 68·1 | 51·0 | 16·1 | 59·0 | + 0·1 | 52·1 | 78 | S.W. | 1·20 |

Sept. 3 — Alternately clear and cloudy throughout the day.
" 4 — Slight rain falling from early morning till 10 A.M., and again at 6 P.M., dull morning, bright afternoon.
" 5.—Fine and bright at times.
" 6 — Fine day.
" 7 — Frequent heavy falls of rain throughout the day, with thunder heard between 12 A.M. and noon.
" 8. — Rain in early morning, fine and bright at times in afternoon, heavy rain at night.
" 9 — Fine day, rough wind.

LONDON: *Atmospheric Pressure.*—During the week ending September 5, the reading of the barometer at the level of the sea increased from 29.51 inches at the beginning of the week to 30.07 inches by 9 A.M. on August 31, decreased to 29.92 inches by 1 P.M. on the same day, increased to 30.15 inches by 9 A.M. on the 1st, decreased to 29.61 inches by 1 P.M. on the 3d, increased to 29.68 inches by 5 P.M. on the 4th, decreased to 29.57 inches by 1 P.M. on the 5th, and was 29.61 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.85 inches, being 0.09 inch lower than last week, and 0.23 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 71°.2, on the 3d, on August 30 the highest was 62°.5. The mean of the seven high day temperatures was 66°.9.

The lowest temperature was 45°, on the 2d; on the 3d the lowest temperature was 57°. The mean of the seven low night temperatures was 49°.1.

The greatest range of temperature in one day was 22°.5, on the 2d; the smallest on the 3d was 14°.2.

The mean of the seven daily ranges was 17°.8.

The mean temperatures were — on August 30th, 55°.5; on August 31st, 53°.7; on September 1st, 55°.2; on the 2d, 55°.7; on the 3d, 63°.; on the 4th, 59°.6; and on the 5th, 58°.3; of these the 3d and 4th were above their averages by 3°.9 and 0°.8 respectively; the rest were below by 4°.5, 6°.1; 4°.2, 3°.6 and 0°.3 respectively.

The mean temperature of the week was 57°.3, being 0°.3 higher than last week, and 2° below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 137° on August 30. The mean of the seven readings was 114°.

The lowest reading of a minimum thermometer placed on grass was 34°, on September 1. The mean of the seven readings was 41°.

*Rain.*—Rain fell on three days' to the amount of 0.14 inch.

ENGLAND: *Temperature.*—During the week ending September 5 the highest temperatures were 74°.6 at Cambridge, 71°.2 at Blackheath, 69° at Truro; the highest at Newcastle was 64°, at Bradford 64°.8, at Preston 65°. The general mean was 67°.4.

The lowest temperatures were 36° at Hull, 39° at Cambridge, 39°.5 at Bolton; the lowest at Liverpool was 48°.4, at Truro and Plymouth 48°. The general mean was 43°.1:

The greatest ranges were 35°.6 at Cambride, 32° at Hull, 28° at Sunderland; the least ranges were 18° at Plymouth, 18°.6 at Liverpool, 20° at Sheffield. The general mean was 24°.3.

The mean of the seven high day temperatures was highest at Cambridge, 67°.2, at Blackheath 66°.9, at Truro 65°.9; and was lowest at Bradford, 59°.7, at Wolverhampton and Bolton 60°.3. The general mean was 62°.5.

The mean of the seven low night temperatures was highest at Truro and Plymouth, 53°, at Liverpool 50°.4; and was lowest at Hull, 43°.9, at Sunderland 45°.1, at Wolverhampton 45°.7. The general mean was 48°.2.

The mean daily range was greatest at Cambridge, 19°.7, at Blackheath 17°.8, at Hull 17°.7; and was least at Plymouth, 10°.8, at Liverpool 11°.8, at Preston 12°.1. The general mean was 14°.3.

The mean temperature was highest at Truro, 57°.9, at Blackheath 57°.3, at Plymouth 56°.9; and was lowest at Hull, 51°.2, at Wolverhampton and Sunderland 51°.5. The general mean was 53°.9.

*Rain.*—The largest falls were 2.10 inches at Truro, 2.02 inches at Bolton, 1.65 inch at Plymouth; the smallest falls were 0.14 inch at Blackheath, 0.15 inch at Sheffield, 0.32 inch at Hull. The general mean fall was 0.87 inch. Rain fell on every day in the week at Truro.

SCOTLAND: *Temperature.*—During the week ending September 5 the highest temperature was 69° at Edinburgh; at Aberdeen the highest temperature was 63°.4. The general mean was 65°.6.

The lowest temperature in the week was, 33°, at Glasgow and Perth; at Greenock the lowest temperature was 42°.5. The general mean was 36°.2.

The mean temperature was highest at Paisley, 55°.2; and lowest at Perth, 51°.6. The general mean was 53°.1.

*Rain.*—The largest fall was 1.05 inch, at Greenock, and the smallest fall was 0.11 inch, at Edinburgh. The general mean fall was 0.58 inch.

JAMES GLAISHER, F.R.S.

# Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

GROWTH OF TREES.—Has it ever been ascertained at what rate a given point near the base of a tree stem will rise in proportion to the height the tree attains? In other words, will a branch situated, say, at 3 feet from the ground, ever rise above that level in the case of a growing tree? And if so, at what rate in proportion to the height the tree attains? *A. D. W.* [It may appear to rise above the level indicated from removal of soil at the base, but there will be no material lengthening of the trunk once formed, except at the ends of the shoots. ED.

# Answers to Correspondents.

ANEMONES: *R. W.* The early varieties are best planted in this month and the next, and late sorts in March.

BEGONIA BLOOMS: *E. J. Jarman.* We have not seen any precisely similar. If you sent up plants in flower, if thought worthy, you might obtain a recognition from the Floral Committee of the Royal Horticultural Society.—*G. H.* Vivid in colour, and novel in habit. Certainly it is as worthy of growing as some others.

CHRYSANTHEMUM: *R. H. P.* A hen-and-chicken variety, the pecularity arising from the production of flowers-heads where only single flowers should be.

ENCEPHALARTOS VILLOSUS: *W. L.* The plant will be disfigured for a few years by your allowing it to ripen a cone, and if you cut the fruit away before it has attained full dimensions the plant would be benefited thereby.

ERRATUM.—In error, in our report of the Sandy Horticultural Show, Messrs. Paul & Son, Cheshunt, were credited with winning the 1st prize for forty-eight cut Roses, but that award was made to Mr. J. House, Eastgate Nurseries, Peterborough.

HERMANN MÜLLER: *A. D. W.* This naturalist died some few years ago. His brother, Fritz Müller, resides at Santa Catharina, Brazil. Baron Sir Ferdinand von Mueller's address is Melbourne; but we imagine from your query that he is not the botanist you mean.

MAGNOLIAS: *E. Thomas.* Your flower is what you say. It is not anything unusual in size.

NAMES OF PLANTS: *A. W.* Rhus Cotinus.—*J. R. W.* Common Balm (Ocimum basilicum, so far as we can tell from your scrap).—*G. S. B., Combe Royal.* Halesia, or Pterostyrax hispida (figured in *Gardeners' Chronicle*, August 9, 1884).—*F. P.* Clethra arborea.—*J. Crombie.* Eucomis punctata, a greenhouse bulb; Erica arborea.—*Rowland May.* Bocconnia cordata.—*Mr. Corey.* Nephrodium mollec ormybiferum. The other is a Pleopeltis (Phymatodes of some, Polypodium of others), but not distinctly recognisable without sori; it is probably one of the broader forms of P. Billardieri.

ROWL ORPHAN FUND.—The following sums must be added to the list of subscriptions, through Mr. George, Putney:—Mr. Tegg, Bearwood, 5s.; Mr. Everson, Roehampton, 5s.; and also from Mr. Ollerhead, £10. This makes the total up to £183 6d. sent from this office.

SCARLET PELARGONIUM AND VARIEGATED LLAVED PHLOX HERBACEA: *E. Frampton.* The first-named has good bold pips, and a rich colour, but truss seems wanting in size and globosity. The variegation in the second is novel, and might be turned to useful account in the flower garden and greenhouse.

STRAMONIUM, LOBELIA, BELLADONNA, AND TINCTURE OF OPIUM!!! *B. A.* We do not doubt the excellence of your motive, nor the value of the remedy under proper restrictions and careful supervision, but to recommend such a formula for use, except under the carefully trained eye of a medical man, is to run a fearful risk. Of course the plan of treatment you mention is perfectly well known to the profession, but noone would, or should, use it in the reckless way you propose.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

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## CATALOGUES RECEIVED.

WM. FELL & CO., Hexham, Northumberland—Dutch Flower Roots.
THOS. IMRIE & SONS, Ayr—Dutch Flower Roots.
H. CANNELL & SONS, Swanley, Kent—Bulbs, &c.
WOOD & INGRAM, Huntingdon—Bulbs and Alpine Plants.
BARR & SON, 12, King Street, Covent Garden—Bulbs and Plants.
HOOPER & CO., Covent Garden—Bulb Catalogue.
E. G. HENDERSON & SON, Maida Vale, London, W.—Bulbs and Flower Roots.
T. KENNEDY & CO., Dumfries—Dutch Flower Roots.
GEO. COOLING & SONS, Bath—Dutch Flower Bulbs, &c.
J. SLAYMAKER, Covent Garden—Dutch and other Bulbs.

CORRESPONDENCE.—RECEIVED:—A. W.—C. M. O.—Kew—Hon. E. V. B.—W. Dodge—W. W.—W. P.—D. C. P.—T. Christy—J. H.—G. S. Jenman—W. G. S.—N. E. B.—W. C. Ondaatje.—B. T. L.—W. E.—W. C.—H. Watney.—J. W. Draper & Sons.—Sir J. L.—J. I. M.—Sir J. D. H.—T. W. Dunne Cottam—Russell & Co.—G. D. V.—Dr. Ondaatje.—A. D., Leatherhead.

# Markets.

*COVENT GARDEN, September* 10.

TRADE quiet, with no falling off in supplies. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½ sieve | 1 0 | 3 0 | Peaches, per doz. | 2 0 | 4 0 |
| Damsons, ½ sieve | 3 0 | 4 6 | Pine-apples, Eng. lb. | 2 0 | 4 0 |
| Figs, per dozen | 0 6 | 1 0 | — St. Michael, each | 2 6 | 5 0 |
| Grapes, per lb. | 0 6 | 2 0 | Pears, per dozen | 0 9 | 1 3 |
| Kent Filberts, per lb. | 0 2½ | 0 3 | — per ½-sieve | 1 6 | 3 0 |
| Lemons, per case | 15 0 | 30 0 | Plums, ½ sieve | 1 6 | 3 0 |
| Melons, each | 0 6 | 1 6 | | | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 5 0 | .. | Lettuces, Cab., doz. | 2 0 | .. |
| Aubergines, each | 0 4 | .. | Lettuces, English | 2 | .. |
| Beans, Eng., per lb. | 0 4 | .. | — Cos, doz. | 2 | .. |
| Beet, per dozen | 1 0 | .. | Mint, green, bunch | 0 4 | .. |
| Brussel Sprouts, lb | 0 6 | .. | Mushrooms, basket | 1 0 | 1 6 |
| Cabbages, per dozen | 1 6 | 2 0 | Onions, per bushel | 1 0 | .. |
| Carrots, per bunch | 0 6 | .. | — Spring, per bun. | 0 6 | .. |
| Cauliflowers, English, per dozen | 2 0 | 4 0 | Parsley, per bunch | 0 4 | .. |
| Celery, per bundle | 1 6 | 2 6 | Peas, per quart | 1 0 | 1 6 |
| Cucumbers, each | 0 6 | 1 0 | Radishes, per dozen | 1 0 | 2 0 |
| Endive, per dozen | 2 0 | .. | Small salading, per punnet | 0 4 | .. |
| Garlic, per lb. | 0 6 | .. | Spinach, per bushel | 4 0 | .. |
| Herbs, per bunch | 0 2 | 0 4 | Tomatos, per lb. | 0 6 | 0 9 |
| Horse Radish, bun. | 0 4 | 0 6 | Turnips, new, bunch | 0 6 | .. |
| | | | Veget. Marrs., each | 0 4 | .. |

POTATOS.—Magnum Bonums, 70s. to 100s.; Regents, 70s. to 110s.; Myatt's, £7 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 18 0 | Ferns, in var., dozen | 4 0 | 18 0 |
| Arbor-vitæ (golden), per dozen | 6 0 | 18 0 | Foliage Plants, various, each | 2 0 | 10 0 |
| (common), dozen | 6 0 | 12 0 | Fuchsias, per dozen | 2 0 | 4 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen | 15 0 | 24 0 |
| Bouvardia, dozen | 3 0 | 12 0 | — longifolium, doz | 9 0 | 18 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Marguerite Daisy, per dozen | 4 0 | 12 0 |
| Dracæna terminalis, per dozen | 30 0 | 60 0 | Myrtles, per dozen | 6 0 | 12 0 |
| viridis, per doz. | 12 0 | 24 0 | Palms in variety, each | 2 6 | 21 0 |
| Euonymus, in var., per dozen | 6 0 | 18 0 | Pelargoniums, per dozen | 6 0 | 18 0 |
| Evergreens, in var., per dozen | 6 0 | 24 0 | — scarlet, dozen | 3 0 | 9 0 |
| Ficus elastica, each | 1 6 | 7 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Lilium longiflorum, | | |
| Asters, 12 bunches | 2 0 | 6 0 | 12 blooms | 2 0 | 4 0 |
| Bouvardias, per bun. | 0 6 | 1 0 | Marguerites, 12 bun. | 3 0 | 6 0 |
| Carnations, per 12 | | | Mignonette, 12 bun. | 1 6 | 3 0 |
| bunches | 2 0 | 4 0 | Pelargoniums, per 12 | | |
| — 12 blooms | 1 0 | 2 0 | trusses | 0 6 | 1 0 |
| Eucharis, per dozen | 3 0 | 6 0 | scarlet, 12 trusses | 0 4 | 0 6 |
| Gardenias, 12 blooms | 3 0 | 5 0 | Rhodanthe, 12 bun. | 6 0 | 9 0 |
| Lapageria, white, 12 | | | Roses (indoor), doz. | 1 0 | 3 0 |
| blooms | 2 0 | 3 6 | Stephanotis, 12 spr. | 3 0 | 0 0 |
| — red, 12 blooms | 1 0 | 2 0 | Tropæolum, 12 bun. | 1 0 | 1 6 |
| Lavender, 12 bunch. | 4 0 | 6 0 | Tuberoses, 12 blms. | 0 6 | 0 9 |

## SEEDS.

LONDON: *Sept.* 9.—A fair seasonable amount of activity continues to characterise the trade for field seeds. Of new home-grown Trifolium the supply appears almost exhausted, and prices consequently still tend upward. There is no change in Rape seed. The crop of new English white Mustard seed is now being marketed. Winter Tares meet a quiet sale on unaltered terms. More attention has lately been given to yearling red Clover seed. Not much business is yet passing in either Alsike, white, or Trefoil. Peas, both round and wrinkled, are dearer. For bird seeds the inquiry is small. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday the show of English Wheat was small, but no advance was asked, and even lower rates were not in all cases refused. Foreign met a little more inquiry, but very few sales were made, and certainly not at better prices. Flour hung on hand. Foreign grinding Barley of good quality attracted more attention. For prime malting Barley 40*s.* was paid. Beans and Peas sold slowly, without change in value. American Oats were easier at 15*s.* 9*d.* to 16*s.*, and the trade was dull for all imports. Maize was steady in value, but a slow sale.—On Wednesday the spot market was exceedingly dull for Wheat, but the business transacted was barely sufficient to establish any quotable change. The flour trade remained dull and adversely influenced by the flatness in the Wheat market. English Barley was in larger supply, which checked demand for foreign. Maize was quiet in all positions. Very little was done in Oats, and rates were nominally unaltered. Average prices of corn for the week ending Sept. 5:—Wheat, 32*s.* 4*d.*; Barley, 30*s.* 7*d.*; Oats, 20*s.* For the corresponding week last year:—Wheat, 34*s.* 3*d.*; Barley, 32*s.* 3*d.*; Oats, 20*s.*

## CATTLE.

At Copenhagen Fields on Monday the demand for beasts was checked by increased dulness in the dead meat trade, prices being depressed 2*d.* per 8 lb. for best cattle, and more on the plainer kinds. Nor could a clearance be made. Of sheep and lambs the numbers were still further moderated, and this assisted price, which were about supported, though the trade was sluggish. The calves were nearly all rough Irish. No change was reported in the pig trade. Quotations:—Beasts, 3*l.* 10*d.* to 4*l.* 6*d.*, and 4*l.* 8*d.* to 5*l.* 4*d.*; calves, 3*l.* to 4*l.* 10*s.*; sheep, 4*l.* to 4*l.* 6*s.*, and 4*l.* 10*s.* to 5*l.* 6*s.*; pigs, 3*l.* 10*d.* to 4*l.* 4*d.*—On Thursday beasts sold very slowly, and less money than on Monday had to be accepted. A moderate supply of sheep offered. Business was quiet, but prices were steady. Calves and pigs were dull.

## HAY.

Tuesday's Whitechapel Market report states that trade was dull, with moderate supplies, in consequence of the wet weather. Quotations:—Clover, prime, 80*s.* to 110*s.*; prime second cut, 85*s.* to 107*s.*; inferior, 60*s.* to 75*s.*; new Clover, 80*s.* to 94*s.*; hay, prime, 70*s.* to 95*s.*; inferior, 36*s.* to 60*s.*; new hay, 65*s.* to 84*s.*; and straw, 28*s.* to 39*s.* per load.—On Thursday there was a moderate supply on sale. The trade was dull at Monday's prices. Cumberland Market quotations:—Clover, best, 90*s.* to 100*s.*; inferior, 60*s.* to 80*s.*; hay, best, 80*s.* to 92*s.*; inferior, 50*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The Borough Market report states that best samples uphold value fairly, but the general trade is dull and the tone depressed Quotations:—Regents, 80*s.* to 90*s.*; Magnum Bonums, 80*s.* to 90*s.*; Early Roses, 70*s.* to 80*s.*; Shaws, 80*s.* to 90*s.*; kidneys, 100*s.* to 110*s.*; Hebrons, 100*s.* to 125*s.* per ton.—Imports into London last week: 5756 from bags from Hamburg, 300 Stettin, 42 Roscoff, and 457 bags 144 sacks from Boulogne.

## COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 17*s.*; Hetton Lyons, 15*s.*; Lambton, 17*s.*; Wear, 15*s.*; Tees, 17*s.*; Dowlais Merthyr, 16*s.* 6*d.*

**Government Stock.**—Consols closed on Monday and Tuesday at 99⅛ to 100 for delivery, and 99⅛ to 100⅛ for the account. Thursday's final quotations were 100 to 100⅛ for delivery, and 100 1/16 to 100⅛ for the account.


# CARTERS'
# EARLY BULBS,
## FOR FORCING.

*To produce Beautiful White and Coloured Flowers for Christmas and Easter Decoration.*

**CARTERS' Earliest White Roman HYACINTHS.**
Per 100, 15*s.*; per dozen, 2*s.* 3*d.*

**CARTERS' Double Roman NARCISSUS.**
Per 100, 11*s.* 6*d.*; per dozen, 1*s.* 6*d.*

**CARTERS' Paper-White NARCISSUS.**
Per 100, 11*s.* 6*d.*; per dozen, 1*s.* 9*d.*

**CARTERS' Red and Yellow VAN THOL TULIPS.**
Per 100 5*s.* 6*d.*; per dozen, 1*s.* 6*d.*

**CARTERS' Extra Large SNOWDROPS.**
Per 100, 2*s.* 6*d.*

**CARTERS' Double Sweet-scented TUBEROSES.**
Per 100, 30*s.*; per dozen, 4*s.* 6*d.*

**All Parcels Packing and Carriage Free.**

CARTERS' COLLECTIONS, SELECTED FROM THE ABOVE BULBS.—A, price 5*s.*; B, price 7*s.* 6*d.*; C, price 10*s.* All forwarded, packing free, per Parcels' Post.

FOR Full Particulars see CARTERS' ILLUSTRATED CATALOGUE of BULBS, ROSES, &c., gratis and post-free.

*Carters* Seedsmen by Royal Warrant to His Royal Highness the PRINCE OF WALES.

237 238 High Holborn, London, W.C.

# STRAWBERRIES.

Strong Roots, 4*s.* per 100. Plants in small pots, 1*s.* per 100; ditto in large pots, 2*s.* per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

# AFRICAN TUBEROSES,

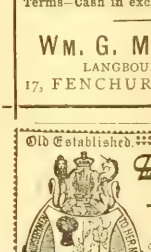
GROWN BY
**WM. RISLEY, Maritzburg, Natal**
(the Original Grower).

Consignments of these beautiful Bulbs have already been landed, and are now offered at very low quotations. They are far away superior in every respect to any hitherto imported, and they have never opened up in such exceptionally fresh and healthy condition.

The undersigned is prepared to show samples at his office, or to give full facilities for inspection of bulk, and to receive orders Intending buyers are advised to make an early application, as the supply is limited.

**Terms—Cash in exchange for Delivery Order.**

**WM. G. MACGREGOR,**
LANGBOURN CHAMBERS,
17, FENCHURCH STREET, E.C.

Old Established


**Dutch Flower Roots,**
*SUPERB QUALITY.*
The Pick of Holland.
*Prices very moderate.*
**Free Deliveries.**
WRITE FOR CATALOGUE
*(Illustrated).*
Reliable always. *Address in full—*
**F. & H. DICKSON & SONS,**
The Queen's Seedsmen,
CHESTER.

**Bermuda Easter Lily.**

LILIUM HARRISII.—This Lily, coming direct from Bermuda, must not be confounded with the variety generally sent from America under the above name, to which it is much superior, and different in bulb, growth, and flower.

Mr. WILLIAM BULL has just received his usual large importation direct from Bermuda, and can supply good bulbs at 2*s.* 6*d.* and 3*s.* 6*d.* each: gigantic bulbs, 5*s.* and 7*s.* 6*d.* each; a few monster bulbs, 1 foot in circumference, 10*s.* 6*d.* each.

LILIUM AURATUM.—Mr. WILLIAM BULL is now booking orders for good plump, sound bulbs at 6*s.*, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen. All other good Lilies at equally low prices.

Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited.

Trade CATALOGUES forwarded on application.

The ANNUAL SALE by AUCTION will be held on TUESDAY, September 15.

Burnt Ash Lane Nurseries, Lee, S.E.

**To Nurserymen, Seedsmen, and Florists.**
DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and on his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same patronage and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his own free on demand.

# CLEMATIS
**JACKMANNI ALBA (Noble).**

"The hardy flowering plant of the season." "Certificated unanimously."

(See *Gardeners' Chronicle*, July 28, 1883.)

*Now being sent out at 7*s.* 6*d.* and 10*s.* 6*d.* each. Cash or reference.*

CHARLES NOBLE, BAGSHOT.



**B. S. WILLIAMS'**
**Improved Mushroom Spawn**
per bushel of 14 cakes 5*s.*
Per cake, 6*d.*; per cake, free by Parcel Post, 1*s.*
For Outdoor and Indoor Culture.
**Victoria and Paradise Nurseries,**
Upper Holloway, London, N.

# FLOWERING PLANTS
**For AUTUMN and WINTER.**
*STRONG, HEALTHY, and FULL of BLOOM.*

**Acacias**, 18*s.* to 30*s.* per dozen.
**Azalea indica**, 18*s.* to 60*s.* per dozen.
**Bouvardias**, distinct, Singles and Doubles, 15*s.* per dozen.
**Camellias**, 30*s.* to 60*s.* per dozen.
**Cyclamen persicum** (Smith's superb strain), full of buds, 5-inch pots, 18*s.* per dozen.
**Cytisus**, 12*s.* to 18*s.* per dozen.
**Epacris**, best sorts, 18*s.* to 30*s.* per dozen.
**Ericas, hyemalis, Wilmoreana, caffra, gracilis, autumnalis, &c.**, 6 inch pots, 18*s.* to 30*s.* per dozen.
**Gardenias**, 18*s.* to 30*s.* per dozen.
**Lapageria alba**, 7*s.* 6*d.* to 42*s.* each.
**Lapageria rosea**, 2*s.* 6*d.* to 5*s.* each.
**Libonia penrhosiana**, 12*s.* to 18*s.* per dozen.
**Pimeleas**, very fine, 36*s.* per dozen.
**Primulas**, best Doubles, named, 3*s.* to 4*s.* per dozen.
**Primulas**, Double White and Purple, 18*s.* per dozen.
**Tree Carnations**, 6 inch pots, 24*s.* to 30*s.* per dozen.

**Orange. sinensis** (in fruit), 2*s.* 6*d.* each.
**Greenhouse Climbers**, in variety, 18*s.* to 30*s.* per dozen.
**Grevillea robusta**, 5-inch pots, 12*s.* to 18*s.* per dozen.
**Ferns, Maidenhair, &c.**, in great variety; also

**STOVE and GREENHOUSE PLANTS.**
*DESCRIPTIVE LIST FREE.*

Selections from above may be made at dozen prices.
The plants are remarkably fine and cheap.

**RICHARD SMITH & CO.,**
NURSERYMEN and SEED MERCHANTS,
WORCESTER.

# BULBS.

Very long experience enables us to offer the BEST QUALITY at a moderate price, as proved by hundreds of Testimonials.

ILLUSTRATED LIST, Descriptive, Select, and comprising important NOVELTIES, on application.

## RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
**WORCESTER.**

TO THE TRADE.—Young FOREST TREES.—True, native 1-year, and 1-year transplanted LARCH; 1-year and 1-year transplanted SCOTCH; 2-year SCOTCH and SPRUCE Seedlings; 1-year BIRCH, ALDER, BEECH, Silver FIR Seedlings. Prices, &c., on application to PETER BLAKE, Nurseryman, Summer Hill, Co. Meath, Ireland.

**To the Trade.**

H. COLLYER, 147, Camden Road, Tunbridge Wells (late Propagator for T. Cripps & Son), can now offer CLEMATIS JACKMANNI and LANUGINOSA CANDIDA, strong plants, 8s. per dozen, 50s. per 100; AMPELOPSIS VEITCHII (true), 6s. per dozen.

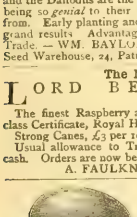
NEW STRAWBERRIES, "LAXTON'S KING of the EARLIES," and "THE CAPTAIN." Orders for these remarkable New Strawberries, which are again being largely taken up by Market and Private Growers, should be sent at once, and will be executed in strict rotation, as the continued drought will materially limit the supply. Particulars with prices from
T. LAXTON, Seed and Novelty Grower, Bedford.

**"Irradiating the Present, Restoring the Past."**

A COMPLETE and ORIGINAL "LITTLE BOOK" of DAFFODILS, in its revised form, for 1885. *Price 1s., post-free.* There are numerous original Illustrations, and the Daffodils are the best ripened Bulbs to be got, Ireland being *so genial* to their cultivation. Over 130 sorts to select from. Early planting and early ripening of Bulbs should give grand results. Advantages offered by no other House in the Trade.—WM. BAYLOR HARTLAND'S Old Established Seed Warehouse, 24, Patrick Street, Cork.

**The New Raspberry.**

LORD BEACONSFIELD.
(A Seedling.)
The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.
Strong Canes, £3 per 100; 9*s.* per dozen.
Usual allowance to Trade, 5 per cent. discount for prompt cash. Orders are now being booked.
A. FAULKNOR, Inkpen, Hungerford



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per sack; free by Parcel Post, 1*s.*
None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

TWO HUNDRED THOUSAND ROSA CANINA, 1 and 2-year seedlings, and 2-years transplanted ones can be cheaply bought. For full particulars and samples, apply to
W. R., 20, Norcott Road, Stoke Newington. N.

**Autumn Planting.**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.
The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

**The Rose and Palm Nursery,**
Gentbrugge, near Ghent, Belgium. The Owner,
OCTAVE BURVENICH-DE WINNE, begs to offer his splendid and renowned stock of 50,000 AZALEA MOLLIS—to be seen every day in his place:—

| | | | | |
|---|---|---|---|---|
| Nice bushy stuff, showing from 20 to 30 buds, per 100 | £4 | 0 | | |
| " " " 12 to 20 " " | 2 | 10 | | |
| " " " 7 to 12 " " | 1 | 15 | | |

General BELGIAN STOCK, at most moderate prices.
5000 ADIANTUM CUNEATUM and GRACILLIMUM, LOMARIA ZAMIÆFOLIA, at 12*s.* per 100.

**Strawberry Plants.**

STRAWBERRY PLANTS.—Warranted all from Fruiting Plants, and will produce a large crop of fine fruit next year:—
IMPROVED BLACK PRINCE, ALPHA, CRIMSON PINE, EXQUISITE, TRIOMPHE DE PARIS, VICOMTESSE HERICART DE THURY, KEENS' SEEDLING, and other really fine varieties, 3*s.* per 100, carriage free.
LAXTON'S GRAND NEW STRAWBERRY, KING OF THE EARLIES, Fruiting Plants, 2*s.* per dozen, free.
S. SHEPPERSON, Florist, Prospect House, Belper, Derbyshire.

**Ferns.—Ferns.—Ferns.**
TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20*s.* per 100, £9 per 1000.
ADIANTUM LE GRANDE, nice plants, ready for potting on, 30*s.* per 100.
ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40*s.* and 50*s.* per 100.
The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

FOR SALE, 12,000 MAIDENHAIR FERNS, from boxes, good Plants, at 5*s.* per 100; FFRNS in 8 varieties, in pots, at 10*s.* per 100, or 2*s.* per dozen, sent by post or otherwise.
Post-office Orders payable at Leyton Green.
T. BALDWIN, Edith Nursery, Burchall Road, Leyton.

MILLTRACK MUSHROOM SPAWN.—The best and cheapest ever offered. Quality guaranteed. 4*s.* 6*d.* per bushel (16 cakes), 6*d.* per bushel package; 2 cakes as samples, free parcels post, 1*s.* 3*d.* Trade supplied very low.
NORLE AND CO., Manufacturers, Child's Hill Farm, N.W.; and 1 and 2, Fenchurch Street, London, E.C.

# GARDEN REQUISITES.
**COCOA-NUT FIBRE REFUSE.**
4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4 bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 25*s.* per ton in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G. SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

**12-oz. Sample Packets, free by post, 12 Stamps.**
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., 4*s* 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag.
SILVER SAND, Coarse or Fine, 25*s.* per Truck of 4 Tons.
WALKER AND CO., Farnborough Station, Hants.



# GARDEN REQUISITES.



TWO PRIZE MEDALS.
**Quality, THE BEST in the Market.** (All sacks included.)
PEAT, best brown fibrous .. 4*s.* 6*d.* per sack; 5 sacks for 20*s.*
PEAT, best black fibrous .. 3*s.* 6*d.* „ 5 sacks for 15*s.*
PEAT, extra selected Orchid 5*s.* 6*d.* „
LOAM, best yellow fibrous ..
PREPARED COMPOST, best
LEAF MOULD, best only .. } 1*s.* per bush. (sacks included).
PEAT MOULD, „ ..
SILVER SAND, coarse, 1*s.* 3*d.* per bush., 12*s.* half ton, 22*s.* ton.
RAFFIA FIBRE, best only .. .. .. .. 1*s.* per lb.
TOBACCO CLOTH, finest imported .. .. 8*d.* lb., 28 lb. 18*s.*
TOBACCO PAPER „ (Spécialité) 8*d.* lb., 28 lb. 18*s.*
MUSHROOM SPAWN, finest Milltrack .. 5*s.* per bushel.
SPHAGNUM MOSS, all selected, 2*s.* per bush., 6*s.* per sack.
**COCOA-NUT FIBRE REFUSE** (by Chubb's special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 12*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

## CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

PEAT, SAND, MOULD, &c.—Coarse and SILVER SAND, Best Fibrous PEAT, Leaf MOULD, Peat MOULD, LOAM, COCOA-NUT FIBRE, &c., of best quality only. Send for Samples and Prices, gratis and post-free. Special terms to the Trade and Gentlemen's Gardeners.
BRINKWORTH AND SONS, Reading.

**A GREAT SUCCESS.**

JEYES'
# "GARDENER'S FRIEND."
One Gallon of this Fluid, diluted with water according to directions, and applied with an ordinary watering-can,
**Effectually Removes all Weeds, Moss, Worms, and Insects on Gravel Walks, Lawns, &c.**
Price, 3*s* 6*d.* per Gallon, including drum; 40-gallon Casks, £4 10*s.* Carriage paid.
**JEYES' SANITARY COMPOUNDS CO.** (Limited), 43, Cannon Street, London, E.C.

GISHURST COMPOUND, used by leading Gardeners since 1859, against Red Spider, Mildew, Thrips, Green Fly, and Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 2*s.*, and 10*s.* 6*d.*
GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

TOBACCO CLOTH and PAPER, finest and most effective, 14 lb. for 9*s.*; 28 lb., 18*s.*; cwt. 70*s.* Special quotations for the Trade.
DENYN, Manufacturer, 73, Rendlesham Road, Clapton, E.

SILVER SAND, excellent coarse, 7*s.* per ton. PEAT, excellent quality, 6*s.*, 8*s.* and 10*s.* per cubic yard. LOAM, excellent quality, 8*s.* per cubic yard. By truckloads. In casks and sacks at moderate rates
W. SHORT, Horticultural Company, Midhurst, Sussex.

**Raffia Fibre.**
J. BLACKBURNE AND SONS have a large Stock, and are offering at reduced prices. Samples and particulars at 4 and 5, Wormwood Street, E.C.

RAFFIA, RAFFIA.—A Special Parcel, of good quality, in small bales, consigned to us from Madagascar, to be Sold at once.—Apply to the Importers, MARENDAZ AND FISHER, James St., Covent Garden, W.C.

**Russian Mats.**
J. BLACKBURN AND SONS are offering ARCHANGEL MATS at a lower rate than for several years for present orders. Also PETERSBURG MATS and MAT BAGS. Price and samples on application.
4 and 5, Wormwood Street, London, E.C.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

# CARSON'S PAINT.
Patronised by
*HER MAJESTY*,
HIS ROYAL HIGHNESS THE PRINCE OF WALES, 15,000 OF THE NOBILITY, GENTRY, AND CLERGY.
Is extensively used for all kinds of
**OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames.**
CAN BE LAID ON BY UNSKILLED LABOUR.
I *Cwt., and Oil Mixture, Free to all Stations.*
Non-Poisonous Paints for Inside Work, Conservatories, &c.
*Prices, Patterns, and Testimonials, Post-free.*

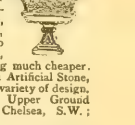
CARSON'S,
LA BELLE SAUVAGE YARD, LUDGATE HILL, LONDON, E.C.;
21 and 22, BACHELOR'S WALK, DUBLIN.
*Discount for Cash.*

**Rosher's Garden Edging Tiles.**



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES: also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.
F. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

**COVERED SHEDS FOR CATTLE.**

## THE GLOUCESTER WAGON CO.
(LIMITED)
Have attached to their extensive works a large Joinery Department with the latest and most improved Machinery, for the Manufacture of
**Covered Sheds or Yards for Cattle, Conservatories, Greenhouses, Garden Seats, &c.,**
*at extremely moderate prices.*
Full particulars may be had on application to
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A BARGAIN.—A very powerful SADDLE-BACK BOILER, heated by two years, with about 100 feet of piping, taps, &c., length 3 feet by 2 feet 1 inch wide, depth 2 feet. Must be sold; will take less than half the cost.
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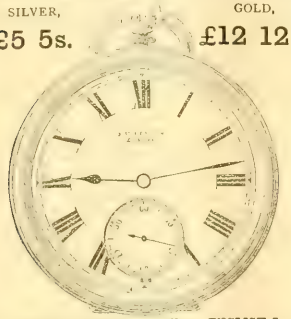


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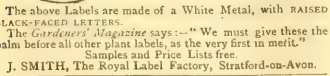
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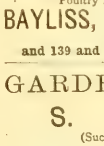
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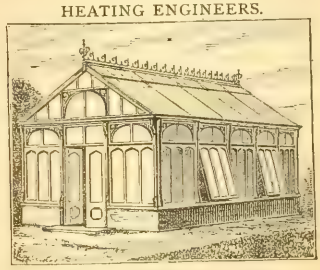
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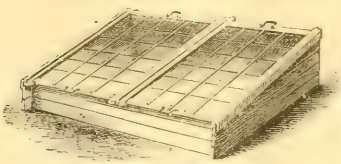
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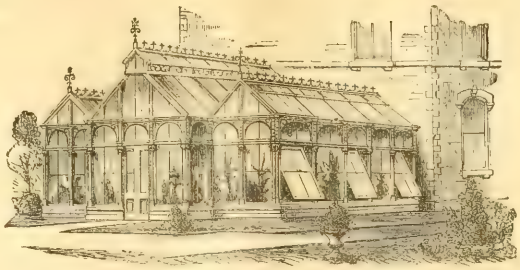
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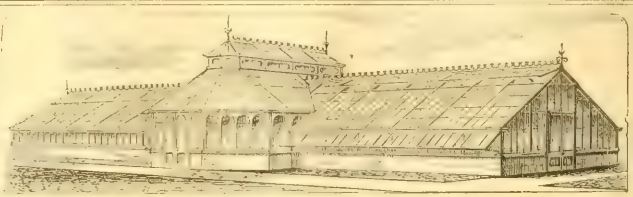
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THE

# GARDENERS' CHRONICLE.

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**Acton, W.**

GREAT TRADE SALE of FERNS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Reeves, to SELL by AUCTION on the Premises, The Nursery, Uxbridge Road, Acton, W., five minutes' walk from the station, North London Railway, on THURSDAY, September 24, at 12 o'Clock precisely, 100,000 FERNS, in pots and store boxes, including Adiantums, Lomarias, Pteris cretica and cretica albo lineata, Asplenium, &c.; 2000 CORYPHA AUSTRALIS, 1000 ASPARAGUS PLUMOSUS, 1000 AZALEAS, well set with buds; PELARGONIUMS, 5000 Old Crimson CLOVE CARNATIONS, 5000 Green EUONYMUS, 5000 AUCUBAS, 1 to 3 feet; Green and Variegated HOLLIES, and a quantity of other SHRUBS.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

**Friday Next.**

CATTLEYA DOWIANA, large masses.
PERISTERIA ELATA, LYCASTE SKINNERI.
ONCIDIUM LANCEANUM SUPERBUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. E. Bonny to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 25, at half-past 12 o'Clock precisely, a grand lot of IMPORTED ORCHIDS, just received in unusually fine condition, including, in addition to the above, Odontoglossum Oerstedii majus, Coryanthes macrantha, Peristeria pendula, Odontoglossum grande, Aganisia pulchella, Paphinia grandis, and many others, together with about fifty lots of choice ESTABLISHED ORCHIDS in variety.

On view morning of Sale, and Catalogues had.

**Flowering Orchids.—Special Sale.**

MESSRS. PROTHEROE AND MORRIS beg to give notice that their next SALE of the above will take place on TUESDAY, September 29, for which they will be glad to RECEIVE ENTRIES in due course.

**Whetstone.—Notice of Sale.**

The VALUABLE FREEHOLD PROPERTY, known as the New Lodge Nurseries, comprising 17 Acres of LAND, 34 superiorly erected GREENHOUSES, DWELLING-HOUSE, numerous TRADE BUILDINGS, together with the whole of the Vines, as planted out, and the Goodwill of the Business.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have Sold the above valuable Property (sought in at the Auction on the 3d inst) by private treaty, in one lot, and will proceed to SELL the PLANTS, LIVE-STOCK, and UTENSILS on SEPTEMBER 29 NEXT. See following advertisement.

**Whetstone, N.**

Four minutes' walk from Totteridge Station.

IMPORTANT CLEARANCE SALE of PLANTS, LIVE and DEAD STOCK, HAY, UTENSILS and EFFECTS, by order of Messrs. W. Davis & Son, without the slightest reserve.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate) are favoured with instructions to SELL by AUCTION, on the Premises, the New Lodge Nurseries, Whetstone, N., on TUESDAY, September 29, at 12 o'Clock punctually, the whole of the well-grown GREENHOUSE PLANTS, consisting of 4000 Pelargoniums, 1000 double scarlet Geraniums, 2000 Hydrangeas, 4000 large white Chrysanthemums, in No. 4 pots, Princess of Teck and Elaine; a grand Specimen Camellias, in tubs and planted out, principally white, and producing annually an immense quantity of bloom; several smaller plants in pots; the whole of the UTENSILS in TRADE; four young, active, and powerful Cart HORSES; four capital market VANS, five manure CARTS, water CART, fourteen HEIFERS, two Ayrshire COWS in calf, twelve Berkshire PIGS, Stack of Prime Meadow HAY, fifty loads of MANURE, quantity of two and three light BOXES, STRAW, CORN-BINS, BARROWS, POTS, BASKETS, and numerous other effects applicable to a Market Gardener and Nurseryman.

May be viewed the Saturday prior to the Sale. Catalogues may be had on the Premises, at the principal local Inns, and of the Auctioneers, Valuers, and Estate Agents, 67 and 68, Cheapside, London, E.C.

**Highfield Nurseries, Matlock, Derbyshire.**

To Noblemen, Gentlemen, Nurserymen, and Others.

HIGHLY IMPORTANT AND ATTRACTIVE SALE OF NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. J. J. Marriott, who is giving up a portion of his ground, to SELL by AUCTION, without reserve, on MONDAY, TUESDAY, and WEDNESDAY, September 28, 29, and 30, the whole of the very Superior Stock of the above-named ground, all in the best possible condition for removal, including large quantities of ROTUNDIFOLIA, CAUCASICUM, LATIFOLIA, COLCHIC, and other LAURELS; extra strong oval-leaved PRIVET; a choice collection of Variegated and Green HOLLIES; CUPRESSUS, RETINOSPORAS, ARAUCARIAS, and ARBOR-VITÆS; choice transplanted GOLDEN DROPS, Tree PÆONIES, 12,000 Transplanted Seedling RHODODENDRONS from the finest named sorts, and 30,000 from hybrids; 3000 ROSES on their own roots, in choicest variety; a very select collection of Herbaceous PÆONIES in strong flowering plants; 40,000 transplanted LARCH, clean, stout, and well-rooted; extra good PINUS AUSTRIACA, &c.

Particulars of which are given in Catalogues, to be had one week prior to the Sale, from Mr. MARRIOTT, Lime Villa, Walsall, or the Auctioneers, Matlock Bridge.

Messrs. Else & Son wish to call special attention to this Sale, the stock to be offered being of unusually good quality, particularly worthy of the notice of THE TRADE as well as PRIVATE BUYERS, there being nothing old or over-grown, or spoiled by over-crowding.

**London, W.**

TO FLORISTS and GARDENERS.—Commanding position, in one of the principal main thoroughfares. Capital FLORIST'S BUSINESS—Show House, 2 Greenhouses, several Pits, Dwelling-house, and Stable. Lease 52 years at a low rent. Price £600. Stock optional. Excellent opportunity.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C. (Folio 6242.)

FOR SALE, by Private Treaty, the NURSERY, LANDSCAPE GARDENER'S, SEED and FLORIST'S BUSINESS, carried on for the last eighteen years by Mr. J. Southall, of Handsworth, who is now permanently incapacitated by a serious accident from active business pursuit. The Nursery is well stocked with Shrubs of every description, and contains about 2½ Acres at a small rent, together with a roomy three storeyed House, three Glasshouses, Frames, &c, well stocked; also a Stall in West Bromwich Market Hall. The whole now in working order, and will be sold as a going concern. An immediate purchaser will be liberally dealt with, as the place must be Sold at once.

For particulars, apply FLEETWOOD AND GOODEVE, Auctioneers, Valuers, and Estate Agents, 42, Cherry Street, Birmingham.

**To Nurserymen, Florists, Seedsmen, and Others.**

FOR DISPOSAL, the Holybourne Vineries, an eligible going concern, comprising Lease, Goodwill, Stock-in-Trade, and Plant of the above Old-established FLORIST'S, FRUITERER'S, and SEEDSMAN'S BUSINESS, situated within 1 mile from Alton Town and Railway Station. The above comprises a detached Span-roof Greenhouse, 84 by 50 feet, containing 200 healthy bearing Vines, with about 1½ tons of Fruit thereon, fitted with Heating Appliances, Soft-water Tank attached, holding 17,000 gallons, Forcing House, Ground Vinery, Lean-to Greenhouse, Potting Sheds, Stores, good Gardens, and large Yard. The House contains Shop, Office, Sitting Room, Kitchen, 5 Bedrooms, and Attics. The whole at a nominal rental.

For orders to view and further particulars, apply to Messrs. WILLIAMS AND YOUNG, Auctioneers and Estate Agents, Alton, Hants.

TO BE SOLD, a FREEHOLD NURSERY (subject to an annuity), about 2 acres of GARDEN GROUND, well planted; Dwelling-house, 10,500 square feet of Glass, heated by Hot-water; Sheds, Offices, &c. Stock at valuation.

Also Part 2 of said Nursery TO BE LET, on unexpired Lease of nine years; good Dwelling-house, 12 acres of Land, planted with Nursery, Farming Produce, &c., to be taken on same terms.

For particulars apply 32, Market Hill, Cambridge.

FOR SALE, a FRUIT NURSERY, at a reasonable price. Situate near a Town Railway Station; also some Land on which some of the stock is growing.

Particulars sent on application to JOSEPH CARLESS, Esq, Solicitor, Hereford.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. J. THEOBALD AND CO., 419, California Street, San Francisco, California.

NURSERY, with Three Houses over 100 feet long each; well built, comfortable, double-fronted COTTAGE. Lease nineteen years. Rent £20. Acre of Ground. 8 miles from London. Parties with £350 apply.

C. H. COWLES, Woodford Green, Essex.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

GOOD BULBS for SUPPLYING CUT FLOWERS:—
EUCHARIS SANDERII.
EUCHARIS AMAZONICA.
EUCHARIS CANDIDA.
EUCHARIS MASTERSII.

The last-named, a beautiful new kind, offered for the first time. Price per dozen or hundred on application to

Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, S.W.

**Vines—Vines—Vines.**

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Price and full particulars on application to the Company,

The Vineyard and Nurseries, Garston, near Liverpool.

LARGE FAN-TRAINED PEACH TREES. —Several good Trees for Sale, owing to want of room. Good sorts and fine, healthy trees that move well. For particulars and price call and see, or write to

W. H. DIVERS, Ketton Hall, Ketton, near Stamford.

**New Catalogues.**

CHARLES TURNER'S New and Descriptive CATALOGUES for the season are now ready, and may be had post-free on application, viz:—

A CATALOGUE of DUTCH and other BULBS.
A CATALOGUE of ROSES, FRUIT TREES, VINES, and all kinds of HARDY TREES and SHRUBS.
A CATALOGUE of CARNATIONS, PICOTEES, and PINKS.

The Royal Nurseries, Slough.

AZALEAS, grand large plants of Double White, well set for early bloom, 20s. per dozen. BOUVARDIAS, fine bushy plants, in eight best kinds, including Doubles, 25s. per 100. TREE CARNATIONS, fine plants for early flowering, 40s. per 100. Choice named SHOW CARNATIONS and PICOTEES, strong Layers, well rooted, 40s. per 100.

W. JACKSON, Blakedown, Kidderminster.

FOR SALE, 500 EUCHARIS AMAZONICA, good flowering bulbs, 75s. per 100. GERANIUM CUTTINGS, "CANDIDISSIMA ALBA PLENA," the finest Double White Geranium for cutting purposes, 8s. per 100; all other leading varieties, 7s. per 100. VIOLAS, all leading varieties and colours, 7s. per 100.

W. MILES, West Brighton Nurseries, Hove.

EUGENE VERVAET DE VOS offers:—
INDIAN AZALEAS, 75s. and 100s. per 100.
AZALEA MOLLIS, 40s., 60s., and 80s. per 100.
AZALEA NARCISSIFLORA, 80s. and 100s. per 100.
All budded plants in the most splendid condition.
The Indian Azalea Nursery, Swynaerde, near Ghent.

**Autumn Planting.**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.

The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

B. GILBERT, Anemone Nursery, Dyke, Bourne, Lincoln, begs to offer the following BULBS, PLANTS, &c.

ANEMONE, King of Scarlets, B. G.'s own production, 4s. per doz., 25s. per 100.
HEPATICAS, Double Red, 5s. per dozen, 30s. per 100.
,, Single Blue, 4s. per dozen, 25s. per 100.
VIOLETS, Marie Louise, 4s. per dozen, 25s. per 100.
,, Single, Victoria, 3s. per dozen, 20s. per 100.

At the International Exhibition, held at the Alexandra Palace, B. G. was awarded a Medal for Group of Anemones.

Testimonials from all parts are constantly coming in. The following, from Mr. ROBERTS, *Gardener to* Lord Rothschild, *only recently received*:—

"Dear Sir,—I cannot speak too highly of your Anemones. They are superb both in colour and size of flower. I potted a quantity, putting five bulbs in a pot, kept them under glass. In due time they threw up as many as two dozen splendid blooms. They flowered two months sooner than the outdoor ones, and were the admiration of all who saw them.—Yours very truly

" J. ROBERTS."

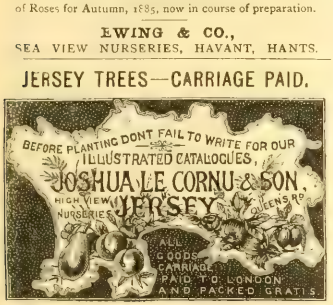
## TEA AND NOISETTE ROSES.

*Prices and full particulars on application.*

GENERAL DESCRIPTIVE CATALOGUE of Roses for Autumn, 1885, now in course of preparation.

**EWING & CO.,**
SEA VIEW NURSERIES, HAVANT, HANTS.

## JERSEY TREES—CARRIAGE PAID.




**PEARS**—APPLES, PLUMS, &c., 18*s.* per dozen.
Espalier trained, 24*s.* per dozen.
**ROSES**—Magnificent Bushes, 9*s.* per dozen.
Standards, strong, 15*s.* per dozen.
Cash Orders most liberally treated.

## BULBS.

Very long experience enables us to offer the BEST QUALITY at a moderate price, as proved by hundreds of Testimonials.

ILLUSTRATED LIST, Descriptive, Select, and comprising important NOVELTIES, on application.

**RICHARD SMITH & CO.,**
NURSERYMEN AND SEED MERCHANTS,
**WORCESTER.**

## BULBS.

## B. S. WILLIAMS'

SPECIALLY SELECTED
**HYACINTHS, for Pots and Glasses.**
**HYACINTHS, for Beds or Borders.**
**TULIPS, for Pots or Bedding.**
**CROCUS, DAFFODILS NARCISSUS, RANUNCULUS, ANEMONES, &c.**
*For Prices and further particulars, see Illustrated BULB CATALOGUE, post-free on application.*

**VICTORIA and PARADISE NURSERIES,**
UPPER HOLLOWAY, LONDON, N.

## BULBOUS FLOWER ROOTS

A VERY EXTENSIVE & VERY SUPERIOR STOCK

EMBRACING
HYACINTHS LILIES CROCUS TULIPS &c

**FREE BY POST OR RAIL**
PRICE CATALOGUE POST FREE.
**JAMES DICKSON & SONS**
"NEWTON" NURSERIES CHESTER
108 EASTGATE ST.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by Parcel Post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

## BULBS

**200,000 DIRECT FROM HOLLAND.**

Very Cheap LIST, with interesting Pamphlet on Growing Bulbs, free on application. HYACINTHS, from 7*s.* 6*d.* 100; TULIPS, from 2*s.* 100; CROCUS, from 1*s.* 100; NARCISSUS, from 2*s.* 100. Liberal Discount to Large Buyers.
ROBERT SYDENHAM Bristol Road, Birmingham.

**Ferns.—Ferns.—Ferns.**
TO THE TRADE ONLY.

ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20*s.* per 100, £9 per 1000.
ADIANTUM LE GRANDE, nice plants, ready for potting on, 30*s.* per 100.
ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40*s.* and 50*s.* per 100.
The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6*s.* per dozen plants, 12*s.* per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3*s.* 6*d.* per dozen plants, 7*s.* 6*d.* per dozen clumps.
Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 2½*d.* free.
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

**The New Raspberry.**

LORD BEACONSFIELD.
(A Seedling)
The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.
Strong Canes, £3 per 100; 50 per dozen.
Usual allowance to Trade, 5 per cent. discount for prompt cash. Orders are now being booked.
A. FAULKNOR, Inkpen, Hungerford

**"Irradiating the Present, Restoring the Past."**

A COMPLETE and ORIGINAL "LITTLE BOOK" of DAFFODILS, in its revised form, for 1885. *Price 1s., post-free.* There are numerous Illustrations, and the Daffodils are the best ripened Bulbs to be got, Ireland being so *genial* to their cultivation. Over 130 sorts to select from. Early planting and early ripening of Bulbs should give grand results. Advantages offered by no other House in the Trade.—WM. BAYLOR HARTLAND'S Old Established Seed Warehouse, 24, Patrick Street, Cork.

TO THE TRADE.—Young FOREST TREES.—True, native 1-year, and 1-year transplanted LARCH; 1-year and 1-year transplanted SCOTCH; 2-year SCOTCH and SPRUCE Seedlings; 1-year BIRCH, ALDER, BEECH, Silver FIR Seedlings. Prices, &c., on application to PETER BLAKE, Nurseryman, Summer Hill, Co. Meath, Ireland.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and on his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same patronage and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his own free on demand.

**To Nurserymen, Seedsmen, and Florists.**
DUTCH BULBS.—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

**Bermuda Easter Lily.**

LILIUM HARRISII.—This Lily, coming direct from Bermuda, must not be confounded with the variety generally sent from America under the above name, to which it is much superior, and different in bulb, growth, and flower.
Mr. WILLIAM BULL has just received his usual large importation direct from Bermuda, and can supply good bulbs at 2*s.* 6*d.* and 3*s.* 6*d.* each; gigantic bulbs, 5*s.* and 7*s.* 6*d.* each: a few monster bulbs, 1 foot in circumference, 10*s.* 6*d.* each.
LILIUM AURATUM.—Mr. WILLIAM BULL is now booking orders for good plump, sound bulbs at 6*s.*, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen. All other good Lilies at equally low prices.
Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

DUTCH BULBS.
DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.
Intending purchasers are kindly invited to read ANT. ROOZEN & SON'S CATALOGUE for 1885, and see the large saving effected by DEALING DIRECT WITH THE GROWER. The Catalogue, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants, and also particulars as to FREE DELIVERY, will be sent, POST-FREE, on application to them, or to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited
Trade CATALOGUES forwarded on application.
Burnt Ash Lane Nurseries, Lee, S.E.

**Prize Gooseberries and the National Gooseberry SHOW.**

ON SALE, the heaviest and best sorts of GOOSEBERRIES, that were shown at the above named show, as inserted Aug. 22, p. 249, *Gardeners' Chronicle*. Also for Market purposes, CROWN BOBS, LANCASHIRE LADS, ROARING LIONS, KEEPSAKES, and others. They are all on clear legs, and have clean healthy tops, and will be offered at unusually low prices.
A printed LIST, with price per dozen or hundred may be had post-free on application.

EDMUND SALSBURY, Melbourne, near Derby.

W. W. JOHNSON AND SON, SEED GROWERS AND MERCHANTS, Boston, are now offering their Select Stocks of home-grown SWEDES in variety, at very moderate prices. Terms, stating requirements on application. Seed Warehouse, Bridge Street, Boston.

## FLOWERING PLANTS

**For AUTUMN and WINTER.**

*STRONG, HEALTHY, and FULL of BLOOM.*

**Acacias,** 18*s.* to 36*s.* per dozen.
**Azalea indica,** 18*s.* to 60*s.* per dozen.
**Bouvardias,** distinct, Singles and Doubles, 15*s.* per dozen.
**Camellias,** 30*s.* to 60*s.* per dozen.
**Cyclamen persicum** (Smith's superb strain), full of buds, 5-inch pots, 18*s.* per dozen.
**Cytisus,** 12*s.* to 18*s.* per dozen.
**Epacris,** best sorts, 18*s.* to 30*s.* per dozen.
**Ericas, hyemalis, Willmoreana, caffra, gracilis, autumnalis, &c.,** 6-inch pots, 18*s.* to 30*s.* per dozen.
**Gardenias,** 18*s.* to 30*s.* per dozen.
**Lapageria alba,** 7*s.* 6*d.* to 42*s.* each.
**Lapageria rosea,** 2*s.* 6*d.* to 5*s.* each.
**Libonia penrhosiana,** 12*s.* to 18*s.* per dozen.
**Pimeleas,** very fine, 30*s.* per dozen.
**Primulas,** best Doubles, named, 30*s.* to 42*s.* per dozen.
**Primulas,** Double White and Purple, 18*s.* per dozen.
**Tree Carnations,** 5-inch pots, 24*s.* to 30*s.* per dozen.

**Orange, sinensis** (in fruit), 2*s.* 6*d.* each.
**Greenhouse Climbers,** in variety, 18*s.* to 30*s.* per dozen.
**Grevillea robusta,** 5-inch pots, 12*s.* to 18*s.* per dozen.
**Ferns, Maidenhair, &c.,** in great variety; also

**STOVE and GREENHOUSE PLANTS.**

*DESCRIPTIVE LIST FREE.*

Selections from above may be made at dozen prices.
The plants are remarkably fine and cheap.

## RICHARD SMITH & CO.,

NURSERYMEN and SEED MERCHANTS,
WORCESTER.

FORTY ACRES
Orna- mental
FRUIT & TREES
Forest
Priced Catalogues Post Free.
J. CHEAL & SONS
Crawley, Sussex.

*Come and See*

**OUR DAHLIAS.**

THEY are now splendid, and as a proof we simply append the following extracts. Both at the Crystal Palace and South Kensington we had, as in many previous years, very much the most complete and best representation of the whole family ever brought together; and in both instances it is fully admitted that we had the premier blooms and the greatest novelties in the Show.

*JOURNAL OF HORTICULTURE, September* 10, 1885 (*Dahlia Show*).

"The most effective display was by Messrs. Cannell & Sons, Swanley, who had most extensive collections, representing all the leading varieties, and including many novelties of great merit. Very noticeable was the large white Dahlia, Mont Blanc, 8 inches in diameter, and several pretty new forms of the Juarezii type. A magnificent bloom of Mrs. Gladstone attracted much attention. Tuberous Begonias and many other specialities were comprised in this grand collection, for which a Silver-gilt Medal was awarded."

*GARDENERS' MAGAZINE, September* 22, 1885.

"Messrs. H. Cannell & Sons, Swanley, exhibited a large and comprehensive collection for which they were awarded the Silver-gilt Medal. It comprised hundreds of blooms of Show and Fancy varieties, and ten or twelve boxes of Pompons and single flowers, all of which were of a high degree of excellence."

**Our BEGONIAS**

Are also a grand sight, and much the largest and finest collection in the world.

**FLOWERS.**

To all requiring the above, particularly during the winter, we should like to send them a CATALOGUE.

**CALCEOLARIAS and CINERARIAS.**

We simply wish to say that we have many thousands of lovely little plants, and of the best strain in the world. 1*s.* 6*d.* per dozen; 10*s.* per 100, post-free. In small pots, 2*s.* 6*d.* per dozen; 18*s.* per 100.

**H. CANNELL & SONS,**

THE HOME OF SWANLEY FOR FLOWERS KENT

MILLTRACK MUSHROOM SPAWN.—The best and cheapest ever offered. Quality guaranteed. 4s. 6d. per bushel (16 cakes), 6d. per bushel package; 2 cakes as samples, free parcel post, 1s. 3d. Trade supplied very low.
MORLE AND CO., Manufacturers, Child's Hill Farm, N.W.; and 1 and 2, Fenchurch Street, London, E.C.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel, 100 for 25s.; truck (loose, about 2 tons), 40s.; 4 bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks 25s.; sacks, 4d. each
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each
COARSE SILVER SAND, 1s 9d. per bushel; 15s. per half ton, 26s. per ton in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 1s. 6d. per sack
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

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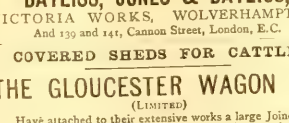
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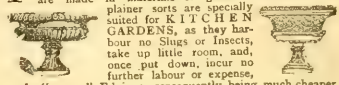
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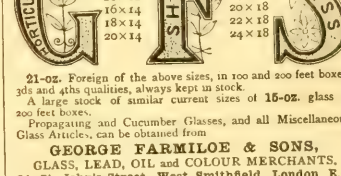
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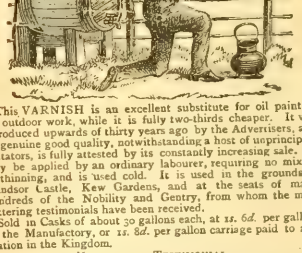
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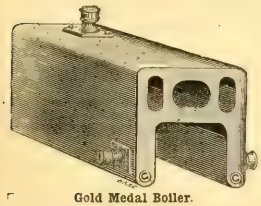
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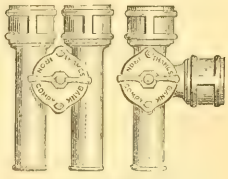
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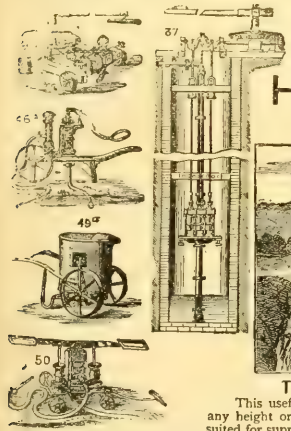
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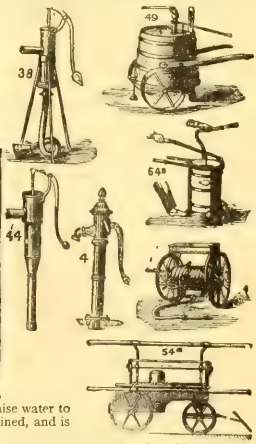


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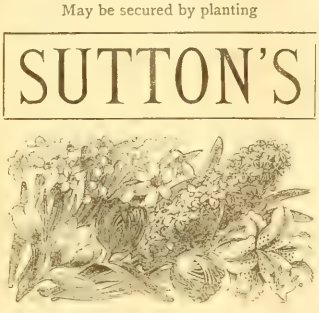


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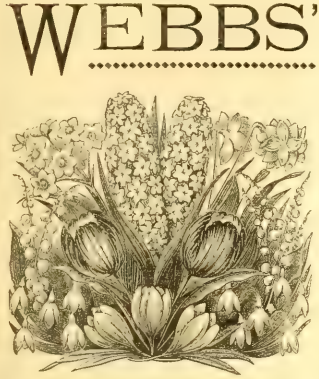
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## DIELYTRA CHRYSANTHA.

A yellow Dielytra and sweet-scented! are two qualities which to our English gardens might be put down as "unknown."

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This is a new and immense variety of the well-known "Poker Plant," altogether eclipsing, however, both in form and bloom, those varieties known to our gardens.

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Whilst as regards the Popular Dutch Bulbs, it will be seen that our Prices are as low as any of the Dutch Houses of respectability—the size and qualities being also exceptional.

To planters therefore who wish to "save" expense we would certainly solicit a perusal of our Catalogue ere ordering elsewhere.

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A. W. CREWS, *Manager.*





THE

# Gardeners' Chronicle.

*SATURDAY, SEPTEMBER* 19, 1885.


## THE ROSE IN 1885.

"COMPARISONS are odious," but nevertheless, when Rose enthusiasts meet together and talk over the results of the previous campaign, they are apt to have very different opinions as to the character of a Rose season, and such is poor human nature, that it is very frequently the case that that judgment is influenced by the character of the blooms in the garden of the speaker. If from day to day he has been in the habit of looking at luxuriant foliage and fine blooms, he eventually comes to the conclusion that the season is a good one; while, on the other hand, if he has had his plants smothered with aphis, or devoured by greenfly, the bud-worm, or dusted over with orange fungus, he, in giving his opinion, declares, "Never had a worse season." In looking at our prospects as Rose growers before the blooming season commenced, I ventured to say, that unless the unforeseen happened, we should have a first-rate season. Well, I do not think it came up quite to that high-water mark, but I should unhesitatingly pronounce it to be the best we have had for some years; the long-continued dry weather, combined with excessive heat, just prevented its being a model season, for seeing a good many Rose gardens as I do, and visiting as large a number of Rose shows as the brief Rose season will permit me to do, in the capacity of judge, I am not confined to the inspection of my own garden, but form my judgment, be it accurate or not, on a very wide and extensive area, beginning in our south-eastern district late in June, and ending with Darlington in the end of July. I have seen Roses in the most varied conditions of soil and climate, and am justified in calling it a brilliant, although from the intense heat a brief, season. I am now writing of course of exhibition Roses and exhibitions, although it is equally true of garden Roses, of which I hope to have something to say ere long.

It has been favourable for the following reasons:—The winter had been a mild one, following on a fine and warm autumn, consequently, roseries were full of hard well ripened wood; this would have enabled them to resist frost, had it come, but it did not. And although we had, as usual, the inevitable late frosts, yet they were not so destructive as in many years. Then it was a season when aphides were certainly not in the ascendant; in my own garden and those of several friends whom I have visited, there was not a vestige of one to be seen: in a few localities indeed it was otherwise—at Aldminster, near Stratford-on-Avon, they were unusually abundant, and at Bishop Stortford I was told by a very successful Dahlia grower that you could not walk through the streets without being covered with them. These, however, were exceptions, as the rule was the other way. Then there was no disturbance of the blooms by heavy rains, or indeed by rains of any sort: for weeks, in many parts of the kingdom, not a drop fell, and where possible watering had to be

resorted to; but those who know how destructive to good blooms is heavy rain, must have felt its absence a great advantage. Against these advantages must be placed the long and severe drought, and the very hot weather at the latter part of July; this reduced the length of time in which Roses were really good very considerably, and after the middle of July most growers in the southern parts of the kingdom were *hors de combat;* very few made their appearance at Birkenhead, and only one at Darlington, and although many were anxious to do so they found it quite impossible.

With regard to the quality of the Roses exhibited it must be borne in mind that we are yearly becoming more exacting, and raising the standard both as to freshness of colouring and size. I sometimes think over the stands that Mr. Hedge, of Colchester, used to exhibit twenty years ago, and which used to astonish people then, and I am convinced that were they to be placed alongside of those exhibited now by Messrs. Slaughter, W. Haywood, Hall, Whitwell, Pemberton, and other amateurs, we should be surprised at the immense difference. It may be questionable whether too much stress may not be laid upon size, and whether in the endeavour to obtain that we may not be degenerating into coarseness. Looking at the Roses which have been exhibited during the past season, I feel pretty confident that the amateurs were better than the nurserymen, and that it would have been difficult for the latter at South Kensington to have beaten the former; at the same time I do not think there was exhibited this year any stand of which one could say "What a wonderful stand of Roses that is!" Nor did I, as a rule, see any Rose stand up prominently above its fellows, claiming attention and asserting its superiority; at the same time I think it must be conceded that there were fewer mediocre blooms exhibited than in previous years; the much neater arrangement of the boxes, the better manner in which the Roses were supported, and the staging quality of the blooms, endorsed the fact that the secrets of Rose growing are better understood, and that exhibitors have not attended shows in vain, and after all that has been said or done, we are apparently not able to devise anything better than the old regulation stand, with its green moss bed for the Roses. There was at one time a great hubbub about using something else, and the advocates of black velvet were very strenuous in their exertions to get it allowed by the National Rose Society. They succeeded, but its warmest advocates have since given it up and fallen back on the old form of exhibiting.

We generally find that one Rose in a season comes exceptionally fine, and the palm this year must be given to Ulrich Brunner, a very large and well petalled Rose, which has been very bright and good. It has been, as might have been supposed, a grand season for light coloured Roses. Such flowers as Catherine Soupert, Madame Lacharme, Monsieur Noman, Captain Christy, La France, and others of a similar character, have come out uncommonly well, for in wet weather they get soiled and stick together, while in bright sunny weather they freely display their beauty. A light coloured Rose that did not do well in 1885 is never likely to be worth much. It was not a year for A. K. Williams. Very seldom was it exhibited in good form.

As to the quantity of Roses exhibited I imagine it never was greater, if so great, as in the past year. Formerly it was no uncommon thing at the National Rose Society's exhibitions for many prizes to be unclaimed, as there were no exhibits. It is not so now. Every class is well contested, and every prize claimed, and this I find to be nearly the same with provincial shows. These, too, have multiplied exceedingly, so that in all parts of the kingdom Rose societies are started. Some have an ephemeral existence, others have the elements of permanence, and at these shows the immense number of Roses exhibited is astonishing. There is one thing that the past season has done for such societies: it has given them, with hardly an exception, fine weather for their exhibitions; and if they have suffered loss this year they are never likely to be successful. The classes, too, at these provincial shows have greatly increased in numbers, so that a very large number of Roses must be exhibited. The two shows of the National Rose Society were a great success, that at South Kensington was probably the best the Society has ever held; but even there, owing to the hot weather immediately preceding it, a large number of exhibitors were unable to fulfil their engagements and dropped out. This was still more the case at Manchester so far as the Southern growers were concerned, but withal it was a fine show, and as far as my experience goes the same may be said of most of the shows throughout the kingdom.

### New Roses.

Another matter which is always of interest to Rose growers is the question of novelties, indeed one of the first questions one is asked is, Were there any good new Roses, and what are they? I think we must say that 1885 has been almost barren in this respect. Taking the Rose lists issued last autumn by the French and English raisers, it is somewhat remarkable to find that not one of them has as yet made its mark—all the high-sounding names and brilliant descriptions notwithstanding. I say "as yet," for it is very rarely that a decided opinion can be given on a new Rose the first year of its introduction, it is so forced and propagated that it has hardly a fair chance of developing its true character. This more especially refers to the foreign raised Roses. Our English raisers have not the same difficulty to contend with, and will not exhibit a Rose until it is in good form. Mr. H. Bennett has made a successful hit in his Mrs. John Laing, which obtained the National Society's Gold Medal; it is a fine deep rose-coloured flower, something between Mons. Noman and François Michelon, and, I think, a better Rose than Her Majesty, which I am disloyal enough to think will be too coarse, unless caught very young. Alphonse Soupert promises well, but that is all that can be said of it. Merveille de Lyon was shown in large numbers, as might have been expected in a year that so well suited it, and when put right it is without doubt the finest white Rose we have, but it is, unhappily, too apt to show its eye, and there was not a stand of twelve shown but had some in it defective for this reason.

There are two Roses which must be unmasked—one, Lusidas, sent from Portugal, and let out at the modest sum of 50 francs, which, according to the *Journal des Roses*, is simply our old friend Celine Forestier; and Gloire Lyonnaise, which was described as a yellow hybrid perpetual. It was sent out by Guillot (fils), of Lyons, a raiser to whom we are indebted for many good Roses, amongst others, La France; and all one can say is, that if it be so, the climate of Lyons is more adapted for bringing out that tint in Roses than that of England. Here it has been simply a Captain Christy style of flower, with just the very faintest suspicion of primrose at the base of the petals. Whether this is the commencement of a fresh break one cannot say, but as a yellow hybrid perpetual it is simply a "take in."

It is amongst that lovely class—the Tea Roses—that the best novelties have been brought forward, not exactly and absolutely new, for Madame de Watteville, Madame Cusin, and the Hon. Edith Gifford, and Grace Darling are none of them new, but all are acquisitions. The first is a most distinct Rose—white, shaded with rose, and with the deeper colour edging the petals. It is a flower of great beauty, substance, and perfume. Madame Cusin is another Rose which has been especially good. Mr. Cranston, of Lamport, showed a stand of it at Canterbury which will not soon be forgotten by any who saw it. It is of a rosy-purplish tint, vigorous in habit, and in every way a desirable Rose. The Hon. Edith Gifford is of a pale flesh, with salmon-pink shading, full and free flowering. Grace Darling, another of Mr. Bennett's seedlings, is an acquisition. Base of the petals creamy-white, deeply tinted and shaded with pink, very vigorous, and likely to prove a useful Rose.

Such is my idea of the past season; if I am wrong about it, it is not because I have presumed to give an opinion on insufficient data, but must be set down to error of judgment. I have, however, the satisfaction of knowing that it is one shared in by many rosarians. *Wild Rose.*

# New Garden Plants.

### ONCIDIUM CROCODILICEPS, *n. sp.**

A FINE little gem, imported from Mexico by Mr. F. Sander, who kindly sent it to me. Its bulbs are light green, ultimately much wrinkled, egg-shaped, a little ancipitous on each side, and scarcely exceeding a strong Hazel-nut in size Leaves cuneate-oblong, acute, very strong. Flowers several in a one-sided raceme, as large as those of Odontoglossum constrictum. Bracts short. Mentum well developed. Sepals and petals light greenish-sulphur coloured beautifully striped and blotched with fine cinnamon, the stripes longitudinal. Lip subcordate, or rounded at the base, ligulate-obovate, blunt, bilobed, white, with a tuft of yellow hairs at the very base, an oblong bilobed velvet callus in front. There are five or three lilac stripes in front of the callus, and some lilac spots at the upper part. The column is leochiloid, there being two projecting cartilaginous arms on the sides of the stigmatic hollow, sometimes much developed, in other cases rather shorter. The inferior part is hairy on the sides, including a nectariferous hollow. The anther is very large, comparable to a broad crocodile's head. *H. G. Rchb. f.*

### CALANTHE COLORANS, *n. sp.*†

Much in the way of Calanthe odora, Griff., and C. vaginata, Lindl. Raceme pyramidal, elongate, not at all corymboid, as in C. veratrifolia, R. Br. It rises from the newly formed leaves, as I learn by the inexhaustible kindness of Mr. J. Day, my oldest English correspondent. In Calanthe odora, Griff., it rises surrounded by the vestiges of the withered leaves, bran-like masses of old vascular bundles. Sepals and petals white, lip first white, then ochre, with calli of gummi-gamboge yellow. Spur shorter than pallid ovary, generally bidentate at the apex. There can be no doubt it is the first Calanthe of that type flowering in Europe. It has having been kindly forwarded by Mr. B. S. Williams. *H. G. Rchb. f.*

### DENDROBIUM INFUNDIBULUM (*Lindl.*) CARNEOPICTUM.

The Dendrobium Jamesianum, Rchb. f., is not distinguishable from D. infundibulum, Lindl., in its red paint on the lip, but in the side-lobes of the lip being full of asperities, and a distinct shape of lip.

* *Oncidium crocodiliceps*, n. sp.—Aff. O. (Leochilo) tricuspidato, Rchb. f.; parvum; pseudobulbus diphyllis ovoideis demum valde rugosis, imo sulcatis; foliis geminis cuneato-oblongis acutis; racemo pauciflore, secundiflore, mento evoluto; sepalis ligulatis acutis; tepalis subæqualibus, nunc antice dilatatis, labello basi subcordato seu rotundato, oblongo obovato bilobi, disco serieeo in basi, calli velutino oblongo antice emarginato antepositi; rostello bidentato; brachus columnæ oblongoligulatis ad foveam, regione inferiori ad margines puberulo velutinas; fovea nectariflua interposita; anthera oblonga maxima, basi supra pollinia tumida. E. Mexico. *H. G. Rchb. f.*

† *Calanthe colorans*, n. sp.—Foliis cum inflorescentia coaetaneis; racemo densiusculo elongato; rhachi, bracteis, ovariis, sepalisque extus velutinis; bracteis ovato triangulis apiculatis ovariis pedicellatis brevioribus; sepalis tepalisque oblongis acutis, labelli lacinulis posticis elliptico-acutis, basi suprema interna vulgo implicitis, lacinia antica divergente bifida, laciniis quadratis, seriebus callorum ternis in basi, callis ternis posticis a lateribus compressis, dorso emarginatis callis anticis acutis 3—5; calcari filiformi apice bidentato ovarium pedicellatum dimidium subæquantis. Flores candidi. Labellum demum ochraceum callis semper xanthinis. *H. G. Rchb. f.*

Now, Mr. B. S. Williams sends me a D. infundibulum that has a nearly flesh colour hue on the lip, a thick central line, and a few similar streaks on the sides. I propose to give it the just mentioned name. It also came from Birmah. *H. G. Rchb. f.*

## SCHISMATOGLOTTIS PULCHRA.

This new Bornean Aroid is prettier than its name. It is a low-growing species, which does not take up much room—an object with gardeners; and its glaucous green leaves are marbled with silvery markings on the upper surface, the lower surface been green and unspotted. The leaves are 4—5 inches long, by 1½—2½ wide, cordate lanceolate acute. It is an introduction of the Compagnie Continentale of Ghent, to whom we are indebted for the illustration (fig. 76). It requires ordinary stove treatment, and would be very effective in front of taller-growing species.

## ORCHIDS AT THE WOODLANDS, STREATHAM.

Twenty-five houses or divisions, each aranged to suit the habits of the plants contained in it, when managed with that skilful care which is evidently exercised throughout the whole of the pretty establishment belonging to R. H. Measures, Esq., must necessarily give a good and varied show of flowers at all seasons, and the history of the rise and progress of such a garden speaks in no uncertain terms of the pleasures to be found in gardening when it is well carried out. Always noted for the good culture of whatever has been there attempted, step by step The Woodlands' garden has progressed as one class of plants after another has been taken in hand, and new houses built for their accommodation, until at present it forms one of the best examples of the kind in the neighbourhood of London, and even yet it is growing, for the fine ranges of neat glass structures which now occupy the two sides of a square, it is contemplated to continue until the quadrangle is completed.



Fig. 76.—SCHISMATOGLOTTIS PULCHRA.

Of late years Orchids have been added to the collection, and at the present time they are the principal feature. So greatly are they appreciated that they may be said to reign at The Woodlands, although they are not allowed to encroach too much on the fine specimens of Eucharis, Anthurium, and other beautiful flowering and foliage stove and greenhouse plants which formerly held sway, and which are so well worthy of the care bestowed on them. For the new extension of the Orchid branch new structures will be built in the same manner as the pretty span-roofed range which was formerly sufficient to meet the requirements of the case. Now that the plants have had time to settle down in this new range their good condition proves that the care bestowed on the planning and building of it has not been in vain, and that the many contrivances for good ventilation, for the ensuring of a proper temperature well in command, and other details involving much additional expense, have secured a good return. The first division is occupied by the cold Odontoglossums, and of them it may be said that there is not a sickly plant among them, although they are allowed to bloom rather heavily. When grown cool, moist, shady, and airy as they are here, the flowering is rarely followed by the ill effects which result where they are kept in more heat. The collection is rich in fine varieties of O. crispum (Alexandræ) and O. Pescatorei and a batch of fine hybrids, such as Wilckeanum, O. Ruckerianum, O. Andersonianum, and their rare varieties represent a sum of money which only their owner, who had the pleasure of paying it, could guess. Overhead in the Odontoglossum-house hang some scores of fine masses of Cattleya citrina, which do marvellously well here, and are a sight when in bloom.

The next division is rich in Masdevallias, some wonderful Harryanas being there, among them being four great masses of the rich coloured M. H. versicolor, some rare forms of the blood-red strain, and several plants of the new yellow Harryana, which is so effective when arranged with the other kinds. In a shady, moist corner Odontoglossum brevifolium is growing well and sending up a fine spike; and O. aspersum and several other rare things are producing flowers. The main feature in the next house is the capital arrangement for growing and showing Cymbidium Lowianum and C. giganteum to advantage. In place of a centre stage a row of terra-cotta pedestals is placed along the middle of the house, and on these stand huge specimens of the plants named, each many feet in circumference. When in bloom the long arching spikes arrange themselves all round, and each plant, standing out distinctly, offers more beauty and gracefulness to meet the eye than would a number of them staged together. Some day we shall see an Orchid show-house for large plants in bloom with such pedestals instead of stages: let us not then forget where the idea originated.

The middle division of the new range is an ornamental one, kept for plants in flower; it is very prettily arranged, the aid of Caladiums and other pretty foliage plants not liable to harbour insects being called in to assist in giving effect. In bloom are some fine specimens of Cattleya Gaskelliana, one almost all white, and others bright rose with crimson lip; C. Eldorado, several very handsome forms; several bright golden Oncidium concolor, one with three spikes, and one with thirty-four flowers on one spike; Acineta densa aurea, a rare golden-yellow form, producing a fine spike through the bottom of the basket; Saccolabium Blumei majus, fine in colour, and having spikes nearly 2 feet 6 inches in length; several varieties of the Turneri section of Lælia elegans, the original form, with its large glowing carmine lip, being the best, although that named L. e. Bluntii, and the greener tinted L. e. prasiata are very fine. Masdevallias of the chimæra and Bella section are in flower overhead, and Dendrobium Dearei, D. Goldieanum and other Dendrobes and Cypripediums tell well in the general arrangement, our old friend Amaryllis reticulata, with its pretty rose-veined flowers and handsome leaves, being quite at home among them. In flower, too, is a strikingly beautiful form of Miltonia candida grandiflora with very large flowers, the broad sepals and petals being yellow, barred with brown, and the large labellum white shaded in the throat with rose; for showiness it may be called the very best Miltonia. Beyond the flowering plant house is the division for the lesser Cattleyas and Lælias, particularly rich in plants of L. anceps Dawsoni, L. a. vestalis, and all the other rare forms of white anceps which are sending up flower-spikes profusely, and beyond that in the division specially planned for Vandas, Aërides, and Saccolabiums. This house, too, is a great success, for the plants thrive in it without giving trouble. The varied collection of named varieties of Vanda suavis and tricolor are particularly healthy, and the large specimens of the new Aërides, A. Rohaneanum, A. Lawrenceanum, A. Sanderianum, as well as the older and better known kinds of Aërides, Saccolabium, and Vanda, are in fine order, and with them some giant Oncidium sarcodes are sending up their flowers.

The last house of the new range is filled with specimen plants of Lælias of the purpurata and elegans sections, and Cattleyas, and if a best can be accorded where all are so good, here it must be, for the plants are very sound, clean, well-rooted, and well flower-sheathed. Some of the large named varieties of C. Trianæ will be grand objects when flowering-time comes, and all will give good account of themselves in their seasons. Among a batch of fine forms of Cattleya labiata one stands out as an unrivalled specimen. It is a great sturdy plant of the true original C. l. Pescatorei, and has plump upright pseudobulbs of the bright green peculiar to it, bearing stout double flower-sheaths, each nearly as large as one's hand. Much interest has been created by this plant, as it is very rare, and many will be glad of an opportunity of seeing it in its best form when in flower. The numerous plants of Cattleya Lawrenceana, too, are sheathing up well. The varieties of Lælia purpurata are in the perfection of health, and a large specimen of L. Williamsii, L. Russelliana (with nine young growths), L. Schrœderiana, &c., promise a good show for next summer, when the snowy blossoms of the large mass of Cœlogyne cristata alba beside them, which awakened such lively competition when Messrs. Protheroe & Morris passed it under their hammer, will come in very effectively no doubt.

The lesser lean-to range has divisions for Dendrobes, of which there is a well-grown houseful, and for Cattleyas and other fresh imported plants, and most of the other plant-houses are utilised for any special Orchid to which they may seem to offer a suitable place, such as cannot be found in the houses devoted to the collection. For example, the main lot of Cattleya Lawrenceana are doing to perfection standing in a row on inverted flower-pots, bringing them near the glass, in an intermediate stove-house, where other plants are arranged about them. This position they seem to enjoy much, and they are plump, and about to flower well.

The warm-house range has a fine house of Phalænopsis, only P. violacea and P. Schrœderi being in bloom among them, and also a very rich houseful of Cypripediums, among them some good specimens of C. Dominianum, C. Pearcei, C. Stonei, C. Harrisianum, C. Ashburtoniæ, C. Sedeni, C. œnanthum, being in bloom, and some very healthy plants of C. Godefroyæ.

In the intermediate-house there are some very fine masses of Oncidium crispum, O. Marshallianum, and others of that section, sending up very stout spikes, and the new and pretty Angræcum Leoni is well furnished with its white fragrant flowers, and Miltonia Regnelii purpurea and the handsome Pescatorea Klabochorum are also well in bloom. With respect to the Pescatoreas and Bolleas, the shady, moist corner which Mr. J. Howe, the gardener, has selected for them seems to suit them admirably, although they are not easily pleased. In Mr. Measures' Orchid-houses much provision is made for having suitable places for all things, and certainly much skill and forethought are displayed in selecting the proper places for plants usually considered troublesome. *J. O'B.*

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## GARDEN PALMS.

(*Continued from p. 4, vol. xxiii.*)

COPERNICIA, *Mart.*—This is a small genus, closely related to the Coryphas and Thrinaxes. Eight species are described, two of which are cultivated in gardens. They are slow growers when in a young state, whatever they may be when older, the plants at Kew being eight or ten years old though still very small. Their resemblance to the Coryphas led to their being by some authorities placed in that genus. From a garden point of view they are not ornamental enough to be recommended for general cultivation, their chief interest residing in the value of the wood in their trunks, which is excessively hard and durable, and in the wax produced by their leaves, each leaf, according to Seemann, yielding about 50 grains of a whitish, scaly powder, which is melted in pots over a fire. This vegetable fat is sometimes used by the Brazilians to adulterate bee's-wak. It is also imported into Great Britain for manufacturing candles, for which purpose it is largely used by Messrs. Price. This wax is produced only by C. cerifera; specimens of it may be seen in the Museum at Kew. The genus is confined to the tropics of South America and the West Indies. It is distinguished by its erect, ringed trunk, which is widened out at the base into a sort of bole and grows to a height of 30—40 feet. The leaves are palmate, the petioles rather short, and armed with small spines along the margins; seedling leaves simple and undivided. Seeds enclosed in a yellowish berry about as large as a Hamburgh Grape, the pericarp fleshy or fibrous, seed oblong or round, smooth or slightly channelled, brown when ripe.

*C. cerifera*, Mart., "Carnauba Palm."—Brazil.

*C. tectorum*, Mart.—Venezuela and West Indies.

### CORYPHA, *Linn.*

In gardens this genus is represented by what is really a species of Livistona, viz., L. australis, whilst, except in botanical collections, the true species are unknown. They are not possessed of any useful garden qualities, but on the contrary are exceptionally difficult to cultivate satisfactorily, are stiff and ungraceful, and very sluggish growers. The plants at Kew are small, and, judging by their rate of growth during the past years, they are likely to remain small for a long time yet. Some years ago there existed at Kew a fine specimen of C. umbraculifera, the Talipot Palm, which held out signs of flowering, but was fatally injured, it was thought, by careless potting, so that the plant never came to maturity. There are six species included in the genus, all of them Asiatic. They have ringed or channelled trunks, not more than 30 feet high, but stout, and widened out at the base. They flower only once, and then die, the tall, terminal, branched inflorescence appearing when, according to Sir Joseph Hooker, the plant is about thirty years old. The leaves form an immense broad crown, the petioles are 7 feet long, the margins armed with small prickles, and the blade is palmate, much divided, each division being again split at the apex. On full-sized plants of C. umbraculifera the blade is 6 feet long by about 13 feet broad, and the segments number as many as 100 in each leaf; the leaves of C. elata are about 10 feet in diameter. When the tree begins to blossom the leaves wither and fall off. There is a photograph of a flowering specimen of C. umbraculifera in the Kew Museum which shows the noble character of the branching inflorescence. The berries are egg-shaped, about as large as pigeon's eggs; or, as in C. Taliera, Nutmeg-like, the pericarp hard and horny when dry, fleshy when fresh, and the seeds are hard, smooth, and pale brown. Leaves of seedling plants very stiff, simple for the first year or so, then gradually becoming palmate.

*C. Gebanga*, Blume, "Gebang Palm."—Java (cultivated in Burmah, &c.).

*C. macropoda*, Kurz.—Andaman Islands.

*C. umbraculifera*, Linn., "Talipot Palm."—South India and Ceylon.

### CYRTOSTACHYS, *Blume.*

Two species are described—one of them, C. Renda, being in cultivation in English gardens, the other hardly known even to botanists. The former is a pretty plant when small, the dark olive-green of its leaves and deep red of the stems and petioles gaining for it a place in many collections, generally, however, under the name of Ptychosperma coccinea. It is distinctly tropical in its requirements, thriving only when kept in a warm, moist stove, and when smal should be shaded from direct sunshine. Its seed germinates quickly, but unless the seedlings are kept in a very warm temperature they soon suffer. Full-sized plants are described as being unarmed, the stem tall, thin, and annulated, and the petioles with their sheathing bases dark red. Leaves pinnate, the segments linear and acuminate, the apex obliquely bidentate. The seeds are oblong, pointed at both ends, about the size of black Currants, dark brown, and covered with a thin coat of reticulating fibre. Seedling leaves bipartite.

*C. Renda*, Blume (Areca erythropoda, Miq.; Ptychosperma coccinea, Hort.).—Malay Archipelago.

### CYPHOSPERMA, *H. Wendl.*

One of the species of this genus has lately been introduced by M. Linden under the names of Kentia robusta and K. Vieillardi. According to the *Genera Plantarum* there are only two species of Cyphosperma described, viz., C. Vieillardi and C. Balansæ. They are robust, pinnate-leaved Palms, with unarmed annulated stems when large, small plants having a broad spreading habit, rather stiff petioles, and graceful leaf-segments. The seeds are described as being small and acutely angled, and are enclosed in a thin shell-like husk. I have not seen seeds or seedlings of this genus.

*C. Vieillardi*, Wendl. (Kentia robusta, Hort. Lind.; K. Vieillardi, Brongn. and Gr.).—New Caledonia.

Dæmonorops—now included in Calamus.

Dickenia.—See Acanthophœnix.

### DESMONCUS, *Mart.*

Like the Bactrises, the plants of this genus are too straggling in growth and coarse in appearance to find much favour in gardens except when very young. Three or four species have been introduced, none of them, however, finding their way to the front as garden Palms. In the American forests they occupy a position similar to that of the Calamuses in Asia, as they climb over trees and shrubs, often to a great distance, festooning from one tree to another. The trunks are no thicker than a walking-stick, and are clothed with large, sometimes hooked, spines; the leaves are scattered all along the stems, instead of being collected in a head as in most other Palms; they are pinnatisect, the segments rather broad and concave downwards, and each leaf is terminated by a long, tough, cord-like appendage, clothed with hooked spines, by means of which the plants are enabled to climb. There are some well-developed specimens of these Palms at Kew. The fruit is oval, about the size of a robin's egg, or in some species less, bright red when ripe; they each enclose an oval seed, which is pale brown, prettily reticulated with black lines, which converge at two or three punctures in the basal end. Seedling leaves split.

*D. granatensis*, Hort.—New Grenada.

*D. major*, Cruger.—Trinidad.

*D. minor*, Hort. (? D. mitis, Mart.).—West Indies?

*D. polyacanthus*, Hort.—Brazil and Guiana.

### DICROSPERMA, *Wendl. and Dr.*

These plants are known in gardens as Arecas. They are ornamental when young, and grow into useful little pot plants in two or three years from seed. The leaves are pinnate, graceful, dark green, with the nerves and margins of the segments yellowish, or sometimes a purplish-brown colour. Being natives of the Mascarene Islands (Mauritius, &c.), they thrive with us only when treated as stove plants, and they require plenty of moisture always, both at the root and overhead. They grow to a large size, the trunk being rather thin, erect, and marked with the scars of the fallen leaves; but in our stoves, as the plants grow large, they become rather straggling in the disposition of their leaves. The seeds are about the size and shape of robins' eggs, and are enclosed in a dark brown fleshy pericarp beneath which is a thin coat of pale brown fibre. Seedling leaves bipartite. All the described species are in cultivation.

*D. aureum*, W. and D. (Areca aurea, Hort.).—Rodriguez Island.

*D. album*, W. and D. (Areca alba, Bory; A. borbonica, Hort.).—Mauritius and Bourbon.

*D. rubrum*, W. and D. (Areca rubra, Hort.).—Mauritius.

*D. furfuraceum*, W. and D. (Areca furfuracea, Hort.; A. pisifera, Lodd.).—Mauritius.

### DIDYMOSPERMA, *Wendl. and Dr.*

Under the name Wallichia the cultivated species of this small genus of East Indian Palms have hitherto been known, and of the six species described four are represented at Kew. The most interesting is D. distichum, which is remarkable in having its foliage arranged in two straight series along the stem just as in Ravenala and Strelitzia. Another interesting one is D. nanum, one of the dwarfest of Palms—a plant of it at Kew flowering annually on stems less than a yard high. Seemann states that these plants "flower only once during their term of existence;" but this is true only in relation to the stems, which perish after flowering, but are succeeded by others, which spring up sucker-like from the base. They are all dwarf growers except D. distichum, their leaves are pinnatisect, very similar to the Arengas, except that they do not possess the curious lobe at the base of the segments, which is present in all the species of that genus. The segments are wedge-shaped, the upper ends jagged or truncate, under-side silvery, with brownish dots and lines. The fruit is a berry, containing a caustic juice, reddish-coloured, and with one, sometimes two seeds in each, which are like Coffee-nibs in size and shape, but hard and bony. Seedling leaf a solitary wedge-shaped blade, with the apex jagged.

*D. distichum*, Hook. f. (Wallichia disticha, T. Anders.).—Sikkim Himalaya.

*D. nanum*, W. and D. (Wallichia nana, Griff.).—Assam and Khasia Mountains.

*D. porphyrocarpon*, W. and D.—Java.

*D. tremulum*, W. and D.—Philippine Islands. *W. W.*

## "HORTUS FLORIDUS."

A COPY of this book in good condition is contained in the library of the Kew herbarium, where we recently had the opportunity—thanks to the courtesy of Professor Oliver—of inspecting it. We are therefore in a position to add some further details to those given at p. 346, September 12.

We may also add that we have received interesting communications on the same subject from Mr. J. H. Krelage, of Haarlem, and from Mr. Burbidge, who has had the opportunity of examining a copy of the English edition belonging to Canon Ellacombe. These further communications we may print on a subsequent occasion. The complete title of the work runs as follows:—

"PASSÆUS CRISPINUS.—*Hortus Floridus* in quo rariorum et minus vulgarium florum icones ad vivum veramque forma maccuratissime delineatæ et secundum quatuor anni tempora divisæ exibentur, incredibile labore ac diligentia Crispini Passæi junioris delineatæ ac suum in ordinem redactæ. Arnihemii, apud Janssonium, 1614 (—17), 4, oblong, 184 foll. et tab."

The titlepage, moreover, has on one side Apollo, and on the other Diana, as supporters, and small medallion portraits of Dodonæus and Clusius, which look as if they ought to be good likenesses. Forty-one plates are devoted to spring flowers, nineteen to those of summer, twenty-five to those of autumn while twelve are allotted to winter flowers. The Latin text is printed opposite to the plates. These latter are excellent in their way, and some have been repeated in other works. In those days authors and publishers were not more particular about mentioning their obligations than are some of their descendants, who think that the purchase of electros absolves them from all necessity for acknowledgment of the source whence they were derived.

Bound up with it is another series of plates headed with this heading:—

"Cognoscite lilia agri quomodo crescunt, non laborant neque nent attamen dico vobis ne Salomonem quidem in universa gloria sua sic amictum fuisse ut unum ex his Matth., 6 cap. Formulis Crispiani Passæi et Joannis Welldnellii."

The plan of the work is thus like the magnificent work attributed to Besler, and known as the *Hortus Eystettensis*. This latter was published in 1613, one year before Passæus and sixteen years before Parkinson.

Mr. Burbidge has mentioned the Narcissi, but there are also excellent figures of Hepaticas, Anemones, Iris susiana, Orchids, then called Satyrium basilicum mas et femina; Sunflowers, then called Chrysanthemum peruvianum; and many others, including pictorial evidence that then, as now, field mice were fond of Crocus bulbs.

One plate represents a flower garden of the period in spring, with geometric beds filled with Irises, Tulips, Crown Imperials, Pæonies, &c. Another plate represents the same garden in autumn, from the

opposite point of view. A lady leans over a flower-bed, with an excrescence from the centre of the dorsal surface of her dress, similar to that which finds favour at the present time, but rather more ugly. An arcade runs round the garden, at one end of which is a balcony, from which the master of the house surveys, doubtless admiringly, the lady in the parterre, as well as the flowers she is tending.

## MESSRS. LOW'S NURSERIES.

ENFIELD.—If we were to tell the confiding reader that Messrs. Hugh Low & Co., of Orchid celebrity, had gone into the market-garden line of business, we should expect the announcement to be received with some hesitation. Nevertheless, the statement would not be wholly incorrect. Messrs. Low & Co., sighing for more worlds to conquer, have found themselves obliged to extend their borders, and have added to their far-famed Clapton Nurseries some 40 or more acres of market garden near Enfield. There, in a flat plain, surrounded by fields of Rhubarb, of Cabbage, of Potatos, of Strawberries, of Seakale—of whatever concerns the London market-gardener—have Messrs. Low established themselves. They, too, grow for market; but they differ materially from their neighbours, alike in what they grow, and in the market in which they dispose of their articles. They represent in a sense, a higher order of evolution than the market-gardener proper. Just as the farmer has been displaced to make room for the market-gardener, who can make the land return a profit under conditions which would be fatal to the farmer, so the market-gardener in his turn has to make way for the nurseryman, who by the superior value of his stock and his more advanced methods of growing it, can make the land yield profits beyond the reach of the market-gardener.

A bleak, wind-swept plain, as the neighbourhood of Bush Hill Park appears to be—a place not particularly of park-like aspect, and with no over-abundance of bushes—is not at first sight the place one would choose for a nursery garden. But Messrs. Low may very well be believed to know what they were about, and we doubt not there are many nurserymen who are being daily hemmed in more and more by bricks and mortar, and over whose establishments the smoky pall of London daily thickens, who would be glad if such a chance befell them as has fallen to the lot of Messrs. Low. Forty acres of fine rich loam and brick-earth, overlying gravel-beds so full of water that the daily use, even throughout this dry season, of steam-pumps to supply the requirements of Messrs. Low's *protégés* has made no apparent difference in the supplies, are indeed a prize. It is just the soil for Roses and fruit trees; it suits Rhododendrons, and is excellently adapted for the ordinary hardy stuff of a nursery. It is rich, but not too tenacious, easily worked, and kept clean at no extravagant cost of labour.

It is less than four years since Messrs. Low became possessed of this valuable accession to their resources, but already it is stocked with fruit tree stocks and fruit trees of all descriptions, trained and untrained, pyramid or bush Pears, Cherries, Plums, Apricots, Apples; there they all are in a condition that under the circumstances leaves nothing to be desired. Stop!—that word "all" must come out. If there is one quality more than another that pervades the whole establishment it is its business-like aspect. There is no room here for sorts of doubtful or unknown value. Messrs. Low may have much admiration for science and botanical curiosities, they may have an abstract sense of the value of experiments, but they prefer that others should make them while they cultivate to as great perfection as possible those sorts—now we think we may say *all* those sorts—which experience has shown to be good, and for which there is a general demand. If by chance the British public demands something that is really not of first-class quality what is that to the business man? He grows what his customers want, and when they alter their minds he will be equal to the occasion.

Roses will clearly eventually add to Messrs. Low's repute. We dare not say how many dwarfs and maidens and standards, or how many Manetti stocks, we glanced at. To the ordinary visitor a few hundred or a few thousand, more or less, make little difference compared to the healthy condition and good growth of the plants, and from this point of view there is every reason for satisfaction. Variegated Maples and Hollies, Aucubas and Euonymus, Privets and Pampas grass, are all grown here on a large scale. As is the case at Clapton with the Orchids and Heaths, so here at Enfield, the prodigious quantities of things grown excite astonishment. Here is half an acre of beautiful little plants of Deutzia gracilis, not varying more than the traditional Peas in a pod. Something like 5000 of these were forced last year. Here are 20,000 similarly evenly grown plants of Genista, each in its traditional "48" pot.

To house all these there must be plenty of glass—that goes without saying—and here, sure enough, is a town of glasshouses, some forty in number, all (with two or three exceptions) 120 feet long by 25 in breadth, and about 9 feet to the ridge. All are span-roofed structures, the roofs resting on low brickwork and glazed with large panes, with top ventilation worked by gearing, and with side shutters at the bottom as well. Eight pipes ensure a circulation of hot-water—two being placed on either side of the central path, and others on either side under the eaves. A tank in each house ensures a moist atmosphere, and an abundant supply of water. Each of these houses contains 11,000 48-pots, and they are made the homes for thousands of Pelargoniums. Crassulas, Gardenias, Palms, Stephanotis, Adiantums, Azaleas grown on the Belgian plan, Solanums, Hydrangeas, Lapagerias, Acacia armata, and a good many etceteras. Foremost among these we may place the pot-Vines and the pot-Roses—the Vines of all the most useful sorts, the Roses more select, Maréchal Niel and Niphetos being chiefly honoured, and mildew conspicuous by its absence. We ought also to make special mention of Madame Crousse Pelargonium, a double Ivy-leaf variety of great freedom, which flowers continuously, and holds its petals well, and which is therefore in large demand for window-boxes. Gloire d'Orleans is a dwarfer, more compact kind, with rich rose-pink flowers. Camellias, nice little serviceable plants, are grown by the thousand, many of them set with "English" buds, which have the British faculty of holding on while the buds on imported Belgian plants are said to drop off. Knowing how prone Camellias are to rid themselves of their buds in the hands of amateurs or unpractised hands we suggested faulty management, but Messrs. Low assure us that the Belgian buds drop off even under their management, which is, to say the least, not likely to be faulty.

Jasminum gracillimum is, we are happy to see, coming into large demand; its beauty and fragrance alike entitle it to favour. This is a comparatively new aspirant for favour, and although Solanum jasminoides is an old one, we do not remember to have ever seen it grown to better advantage than it is here in 32-pots, trained loosely to a height of 2 or 3 feet, and covered with elegant white or pale lilac flowers.

One or two houses are to be devoted to Orchids—Clapton cannot hold them all, and some have already welled over to Enfield. Besides the houses there are pits and frames, more than we cared to count. Messrs. Low, as we have seen, do not do things by halves; what they undertake they undertake on a vast scale, and the quality of their manufacture—for so we must call it—at Enfield, is on a par with the quantity.

CLAPTON.

At the Clapton nursery of the firm we found the houses—and there are a great number of them, as our readers well know—bare generally of the Orchid beauties, produced in such abundance in winter, spring, and early summer, but filled to repletion with plants in large and small pots, the latter, of course, taking the lead as to numbers. House after house was visited, and only here and there was anything seen to gladden the eye with colour; but of things "coming on," we can only say, send for Messrs. Low & Co.'s list, and read it attentively. New and rare plants may be reckoned by groups of fifty to one hundred specimens, whilst the older favourites of the Orchid lover may be counted by thousands.

The only wonder seems to be, how can the sale of so many plants be attained? Either Orchid growing must be carried on in hundreds of places of which we wot not, or our gardeners must be destructives of the first order. We prefer to think the first reason must be the true one.

A few Cattleya gigas flowers, and these not good ones, were seen of a particularly dark variety, usually going under the appellation of C. g. Lowi. The variety flowers on pseudobulbs of 3 inches in height. Oncidium Marshalli does well here simply suspended on rafts in mid air, without any packing whatever, some fine bits were seen. O. varicosum, O. Forbesii, and O. prætextum were being cultivated in the same house, but not in the same way.

Nowhere else can so many plants of Cypripediums in variety be found as here, and all are evenly grown and the very picture of robust health. There were Parishi, Lowianum, Roezli, ciliolare, vexillarium, the rarer Chantini, Harrisianum, Leanum, and hybridum. Only a few of these four are in stock. Others were Dominyanum, Spicerianum, and Veitchi. Our list is not then quite complete. Of Odontoglossum Pescatorei we were told there were not less than 10,000 plants, large and small, other species being in smaller numbers, but yet imposing enough.

Among Ferns Lomaria gibba was particularly fine; the plants, mostly in 48's, being full of fronds, dwarf, stocky, and insect free to a remarkable degree. Adiantum mundulum, dwarf, compact, and evidently as useful a Fern for the bouquet-maker as it is possible to have, was growing in its thousands. It bears a great similarity to Pacottii. A. cuneatum was found of course in numbers exceeding that of any others, proving its worth, and the extent of the demand for it. Bouvardias were very well grown, the one-year-old plants having stocky, bushy growth, with plenty of flower showing, the gem of them being Flower of Beauty, a light pink, that carried blooms on every shoot without exception. Other well-known kinds filled several houses. Messrs. Low & Co. having taken up the growing of Cyclamens in good earnest, it was only to be expected we should find them grown in the best manner, and there are thousands of plants filling eight pits, which are models of what such stuff should be; and when we say that the stock is "Page's," it will be understood that the strain is the best obtainable. Many thousands of Heaths, such as are now popular market kinds, were standing on beds of coal cinders. All were even in size, and regular in habit, as were also the Epacrises. These plants will ere long, before autumn fogs descend on the town, be transported to the purer air of the Bush Hill Nursery, to remain there until the bloom appears. Tree Carnations in 120 kinds filled another large cinder area, and were as robust and compact as their neighbours, the Heaths. Other things grown in quantity are the greenhouse hybrid Rhododendrons, such kinds as Princess Royal, Alexandra, Taylori, Jasminiflorum, Princess Alice, Veitchi, and Duke of Edinburgh, forming the bulk of them. The deliciously scented fragrantissimum was likewise there, and Maddeni and Dalhousianum.

## THE BRITISH ASSOCIATION.

HEREDITY.—The following extracts are taken from Mr. Francis Galton's presidential address to the anthropological section of the British Association, and, as will be seen, relate to the extremely important questions relating to the inheritance of parental and ancestral qualities and characteristics—questions as pertinent to plants as to animals.

Mr. Galton discussed the conditions of the stability and instability of types, urged the existence of a simple and far-reaching law that governed hereditary transmission, and proceeded as follows:—

"It is some years since I made an extensive series of experiments on the produce of seeds of different size but of the same species. They yielded results that seemed very noteworthy, and I used them as the basis of a lecture before the Royal Institution on February 9, 1877. It appeared from these experiments that the offspring did not tend to resemble their parent seeds in size, but to be always more mediocre than they—to be smaller than the parents if the parents were large, to be larger than the parents if the parents were very small. The subject of the inquiry on which I am about to speak was hereditary stature, My data consist of the heights of 930 children and of their respective parentages, 205 in number. In every case I transmuted the female statures to their corresponding male equivalents and used them in their transmuted form, so that no objection grounded on the sexual difference of stature need be raised when I speak of averages. The factor I used was 1.08, which is equivalent to adding a little less than one-twelfth to each female height. There can be no doubt that heredity proceeds to a considerable extent, perhaps principally, in a piece-meal or piebald fashion, causing the person of the child to be to that extent a mosaic of independent ancestral heritages, one part coming with more or less variation from this progenitor, and another from that. So far as the transmission of any feature may be regarded as an example of particulate inheritance, so far (it seems little more than a truism to assert) the element from which that feature was developed must have been particulate also. Therefore, wherever a

feature in a child was not personally possessed by either parent, but transmitted through one of them from a more distant progenitor, the element whence that feature was developed must have existed in a particulate, though impersonal and latent form, in the body of the parent. The total heritage of that parent will have included a greater variety of material than was utilised in the formation of his own personal structure. Only a portion of it became developed; the survival of at least a small part of the remainder is proved, and that of a large part may be inferred by his transmitting it to the person of his child. Therefore, the organised structure of each individual should be viewed as the fulfilment of only one out of an indefinite number of mutually exclusive possibilities. It is the development of a single sample drawn out of a group of elements. The conditions under which each element in the sample became selected are, of course, unknown, but it is reasonable to expect they would fall under one or other of the following agencies:—First, self-selection, where each element selects its most suitable neighbour, as in the theory of pangenesis; secondly, general co-ordination, or the influence exerted on each element by many or all of the remaining ones, whether in its immediate neighbourhood or not; finally, a group of diverse agencies, alike only in the fact that they are not uniformly helpful or harmful, that they influence with no constant purpose—in philosphical language, that they are not teleological; in popular language, that they are accidents or chances. Their inclusion renders it impossible to predict the peculiarities of individual children, though it does not prevent the prediction of average results. We now see something of the general character of the conditions amid which the stable equilibrium that characterises each race must subsist. The appearance of a new and useful family peculiarity is a boon to breeders, who by selection in mating gradually reduce the preponderance of those ancestral elements that endanger reversion. The appearance of a new type is due to causes that lie beyond our reach, so we ought to welcome every useful one as a happy chance, and do our best to domicile and perpetuate it. When heredity shall have become much better and more generally understood than now, I can believe that we shall look upon a neglect to conserve any valuable form of family type as a wrongful waste of opportunity. The appearance of each new natural peculiarity is a faltering step in the upward journey of evolution, over which, in outward appearance, the whole living world is blindly blundering and stumbling, but whose general direction man has the intelligence dimly to discern, and whose progress he has power to facilitate."

### FORESTRY.

General Walker, in introducing Major Bailey, who read a paper on "The Indian Forest School," said that the science of forestry was one which had not yet found a home in England. In France regular and systematic forest management had existed for centuries, and the result was seen in numerous well-stocked forests, which were managed with a view to the continuous production of whatever timber and fuel might be required to satisfy the wants of the people. But in England our extensive coalfields had hitherto furnished fuel in abundance which was better than firewood and less costly, and our ships had brought us from foreign countries much timber of good quality at a lower cost than that at which it could be produced at home. Thus having no need of the science of forestry, we had characteristically abstained from endeavouring to acquire it with a view at least to its practical introduction and development within the British Isles. But in India we had long since felt the need of systematic forestry and learned to appreciate its value. Already great benefits had been derived; the revenue from the forests has been increased, and the people of the country had been benefited. Lands which twenty years ago were bare, or only produced open scrub and a few isolated trees, were now stocked with dense forest, from 20 to 80 feet high, grown under the favouring influence of tropical heat and moisture, as well as under the fostering care of a scientific department; and it was anticipated that at no very distant date the forest lands which had necessarily been placed under the protection of the Government forest officers would not only yield a permanent supply of timber and fuel to the people without any expense to the State, but would contribute towards the healthy development of municipal institutions and of local self-government. The success of Indian forestry had been so marked that some of the native states, which were generally keenly alive to their own interests, were now having men trained in the Government schools for the conservation and management of their own forests.

Major Bailey then remarked that it was only within the last twenty-five years that a special State Department had administered the Indian forests. The staff was at first composed of men who had received no professional education, but they were able to do all that was then needed, and they accomplished work of great value. But, as a result of their work, the State became possessed of large forest areas, from which a permanent supply of produce had to be secured, and which had, therefore, to be managed systematically. In 1878 Dr. Brandis proposed to establish a Central Forest School, and his proposals were accepted by Government. The chief object of the school was then to prepare natives of India for the executive charge of forest ranges, and to qualify them for promotion to the superior staff; but it was hoped that the school might ultimately be used to train candidates for the controlling branch. The chief forest officers of provinces were to select candidates and send them to be trained at the school. None but natives of India were to be admitted. A number of forests near Dehre Dun were grouped together as a training ground and placed under a separate conservator, who was also appointed director of the school. The first theoretical course was held in 1881, and they had been held every year since then. The present system was that the candidates, who must be in robust health, were selected by conservators of forests or by the director of the school. They must serve in the forests for at least twelve months before entering the school. Candidates for the rangers' certificate must have passed the entrance examination of an Indian University on the English side; candidates for the foresters' certificate pass a lower examination. The course of training for these two classes extended over eighteen and twelve months respectively. Men who gained the certificates returned to their provinces and were employed there. The course of instruction for the rangers' class embraced vegetable physiology, the elements of physics and chemistry, mathematics, and road-making and building, surveying, sylviculture, working plans, forest utilisation, forest botany, the elements of mineralogy and geology, and forest law. The course for foresters was much more simple. The preparation of manuals was in progress, and a library, museum, chemical laboratory, observatory, and forest gardens had been established. No instruction fees are charged. It would not be possible to get candidates whose maintenance and education were entirely paid for by their friends. Nine men who had left the school had appointments of from £125 to £200 a year, and this ought to draw eligible candidates.

Dr. Brown said he had just returned from a six weeks' residence at a School of Forestry in Spain, and stated that the object aimed at by the leaders of that school was to prevent one drop of water falling in the form of rain from passing into the sea until it had been utilised to the utmost in promoting the fertility of the country. A School of Forestry might be useful in Britain as well as India in supplying foresters for the colonies, and landed proprietors in this country would be all the better if they could get educated and trained foresters to undertake the management of their plantations.

### CONSERVATION OF FORESTS.

Lieutenant-Colonel Playfair observed that his experience in Tunis proved in a most forcible manner the importance of preserving forests. In Roman times the province of Africa and the territory of Carthage formed the granary of Europe. In what was now practically a desert the remains of magnificent Roman farms were everywhere found. The small hillsides were now nothing but sands. This was entirely due to the destruction of the forests with which they used to be covered, for the vegetable soil had been washed away into the valleys, and there it was now found, buried beneath some feet of sand and water-worn pebbles. No more striking instance of the importance of preserving forests could possible be found.

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CHARLES WRIGHT.—The American *Gardeners' Monthly* announces the death, in his seventy-fourth year, of this gentleman. He was better known to botanists, as a collector in Mexico and elsewhere, than to horticulturists.

## TALIPOT PALM LABELS.

SINCE my arrival in England, in May last, from Ceylon, my friend, Mr. E. M. Holmes, kindly drew my attention to a paragraph in the *Gardeners' Chronicle* of March 28 last on "Palm Leaf Labels," and I have through your courtesy been able to read the paragraph, so as to be able to give such additional information about the labels referred to as may be of some interest to your readers.

The labels are made from the unexpanded frond or leaf of the Talipot Palm (Corypha umbraculifera). The leaf is fan-shaped, about 30 feet in circumference when full grown, and divided into 112 divisions, the tip of each division being emarginate and green. Each division is split into two, made into small rolls, and boiled in water for a few hours. After boiling the strips are dried in the shade, soaked in water for a few minutes, and both sides smoothed with an iron. The smoothing used to be performed in a primitive manner by rubbing the strips on a polished cylindrical piece of wood tied between two stumps or trees. After smoothing it is necessary to roll up the strips of leaves quickly, to prevent curling, each roll containing fifty to 100 or more strips. When the surface is polished it is easy to write on it. The use of the smoothing-iron facilitates the process greatly, especially when the strips are spread on a table covered with a piece of blanket—the manner in which I have frequently performed the operation. The strips when thus prepared are called "Olas" by the natives, and used for writing upon with a style, as is well known in the East.

It is a fact that Palm-leaf books have been preserved for more than 500 years. It may be noticed that the durability of the leaf is owing to its being covered with a silicious cuticle, which is one of the most beautiful polarising objects of the vegetable kingdom, displaying the colours indigo, blue, violet, red, orange, yellow and green.

One of the Buddhist priests of Ceylon informed me that the Talipot leaf was used for writing Buddhist doctrines in the Buddhist era 432, or before A.D. 510. An Oriental scholar, also of Ceylon, is of opinion that the leaf was used in this way more than a thousand years ago. The exact time, however, cannot be ascertained. In India there is reason to believe that this leaf has been in use for the last two thousand years or more.

To return from this digression to the subject of making the labels, I may state that the "Olas," or strips of the leaf, are laid on a piece of smooth board. The labels are cut out by means of a stamp, which is hammered with a wooden mallet, and twelve or more labels can be cut at one stamping. The dimensions of the strips for making the labels may be briefly stated as follows:—

| | |
|---|---|
| Length of longest strip .. .. .. | 6 feet 7 inches. |
| Breadth of broadest part .. .. | 2½ inches. |
| ,, narrowest part .. .. | 1 inch. |
| Length of shortest strip .. .. | 4 feet 9 inches. |
| Breadth, the same as longest strip. | |

One strip makes on an average forty-nine labels of ordinary size. One hundred strips give 4900 labels.

As regards the question of the mode of writing upon these labels, I can only endorse your suggestion, viz., of scratching the leaf and applying the colouring matter. The common mode of writing as practised in the East is by means of a style, and Indian ink, charcoal, or other colouring matter, is rubbed upon the scratched writing. A specimen of a label written on with a style I send herewith for your inspection. The mode of writing with a style is no doubt foreign to Europeans, and may not be so easily accomplished as by the natives of the East; but some pointed instrument may be devised for writing on the Palm-leaf.

I have used these labels extensively attached to animal and vegetable specimens immersed in spirit, and found them in good preservation for a long time. The parchment labels attached to stone corals which I took with me to Ceylon turned into a pulpy mass in some months. Talipot labels attached to plants exposed to the tropical sun and rain were uninjured for a long time. According to Mr. Holmes' suggestion, I had some labels written on with strong sulphuric acid, and held to the fire in order to develope the writing. The acid was used with a quill pen.

The cost of 1000 labels, without brass eyes, is 2*s*. 6*d*. I shall be glad to supply any one with a few

labels for trial. *W. C. Ondaatje, F.L.S.* (*retired Colonial Surgeon, Ceylon*), 85, *Finborough Road, S.W., Sept.* 3.

# Florists' Flowers.

## THE HYACINTH.

THE time has arrived when it is necessary to purchase the stock of Hyacinths, Tulips, Polyanthus, Narcissus, &c., for the season. To-day we have been preparing the compost for potting. I like to do this in August, but this year we have let it run into September. The potting material for Hyacinths ought to be light and rich, and if it is prepared two or three months before it is required, the manure becomes more thoroughly incorporated with the soil. I use two barrow-loads of loam to one of cow-manure, one of sand, and one of leaf-mould. River sand is generally preferred to any other. Some growers use a specially prepared kind of flower-pot, deeper than usual, but I do not like the appearance of them when so grown. I use 5-inch pots of the ordinary kind for the small bulbs, and 6-inch ones for the larger size. In potting the bulbs they should be pressed moderately firm into the compost, with the crown just projecting above the surface. It is an error also to press the bulbs into the soil with the fingers, as this causes the compost immediately beneath the bulbs to become too firm; the consequence of this is that when the mass of roots which rapidly form on the root-stock push into it the bulbs are sometimes thrown out of the soil. I know these small details may seem trifling to some people, but success or failure very often depends upon how or when the most minute details are carried into effect. We have no difficulty in obtaining cocoa-nut fibre refuse here; it is the cheapest material for plunging all kinds of Dutch bulbs in after they are potted, and if it is twelve months old it is better, as a mass of new cocoa-nut fibre will sometimes heat, which would be disastrous to hardy bulbs. The subsequent treatment after the bulbs have been removed from the plunging material, consists in developing the spikes which have been formed in the bulbs the previous year. If the bulbs are not the full age, and have not been well grown and ripened, they cannot be expected to produce spikes of the largest size. If it is necessary to force them in order to get the flower-spike fully developed by an early date, the forcing process must not be too severe at first. Start with a minimum temperature of 45°, it is better not to increase it to more than 55° as the highest minimum. Some few varieties have too many bells on the spikes, and were they allowed to remain they would not be perfectly developed. I thin the bells out when they are in the bud state, and those that remain grow to their full size, forming a symmetrical spike. A Hyacinth spike is at its best about two weeks after the first flowers open. At present I need not say anything about the varieties it is best to grow; good selections were given about the end of March, or early in April. *J. Douglas.*

## COMPARETTIA MACROPLECTRON.

OUR Orchid growers would be doing good work, for which they would get well rewarded, if they were to arrange a house for and look specially after the Comparettias, Ionopsis, Burlingtonias, Rodriguezias, Trichocentrums, and other small growing Orchids of the same nature, which, by reason of the smallness of their pseudobulbs or entire want of them, are more easily damaged when grown mixed up with the general collection than those with large pseudobulbs containing stored vitality to enable them to tide over temporary difficulties. There is nothing to prevent those who wish to grasp the subject and do the best for their plants from setting apart a corner of a cool intermediate-house where all the frail plants named can be brought together, and there a special open woodwork stage could be arranged so that the plants might be brought to within 18 inches or 2 feet of the glass, for on this point the life or death of these things depends more than on anything else. Those which are in pots or pans should be placed on the stage, and those in baskets suspended above, so that the grower can have all under his eye all at once. He will then be much better able to judge of and direct their progress than would be the case if he had to look about for the different specimens for comparison. All these small growers are safest in fibry peat alone if a good sample of it can be obtained, but if sphagnum is used it should be watched to see that it does not grow up too high among the small growths or it may cause them



FIG. 77.—COMPARETTIA MACROPLECTRON: FRONT VIEW.



FIG. 78.—COMPARETTIA MACROPLECTRON: SIDE VIEW OF FLOWER, SHOWING THE SPUR.

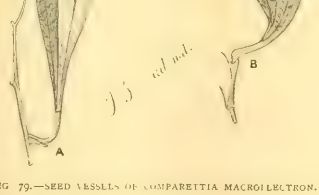



FIG. 79.—SEED VESSELS OF COMPARETTIA MACROPLECTRON.

to damp off when not actively rooting and growing. None of the section of Orchids here under notice require drying off, and it is better to water them winter and summer alike than to attempt to do so, but strictly speaking it is by far the best plan to reduce the supply of water when the plants have fully made up and hardened their growths, and only to water them as they are becoming dry until they again start into growth. Free drainage is above all things essential. Anything like a hothouse is sure to be fatal to these plants in a short time, 55° to 70° at all seasons being the best for them. Rather than in a close warm house they will do in a light part of the cool house if it does not get below 50° in winter.

*Comparettia macroplectron* (figs. 77, 78) is the largest and most delicate tinted of the genus, its flowers are white, prettily spotted, veined, and suffused with pink. It was introduced in 1878, and exhibited by F. A. Philbrick, Esq., at the Royal Horticultural Society in July, 1882, where it was awarded a First-class Certificate. The branched spike of Mr. Philbrick's plant was 1 foot 8 inches in length, and the length of the flower-spurs over 2 inches.

The figures A and B (fig. 79) represent seed vessels of Comparettia macroplectron when arrived at a state of maturity. One is somewhat longer than the other, but in other respects they are precisely similar. They are acutely triquetrous, or, more properly, three-winged. The transverse section at C illustrates this statement. The wings represent the midrib of the carpels, from which the valves split away or dehisce, as is most prevalent in the order, to allow of the dispersion of the myriads of minute seeds. The placentas, or points of attachment of the seeds, correspond to the notches on the middle of the slightly concave faces, and the same points also represent the margins of the infolded carpels. The whole vessel, when ripe, is dry, scarious, and of a papery texture.

*C. falcata.*—This is one of the freest growers of the Comparettias, with flowers smaller than those of C. macroplectron, and of a varying red colour. The best form of this plant was sent to the Royal Horticultural Society on the same day as Mr. Philbrick sent C. macroplectron, and it was awarded a First-class Certificate. Flowers bright orange-scarlet.

*C. rosea.*—This is often found in collections under the name C. falcata. It is similar in habit to that species, but has rose-coloured flowers.

*C. coccinea* grows about 6 inches in height, leaves often purplish on the under-side. Sepals and petals yellow and red, lip bright red.

*C. speciosa* is one of the rarest and showiest of the genus, its flowers are borne eight to twelve on a spike. Sepals and petals bright orange, base of the lip orange, the broadly expanded blade being bright cinnabar.

## FROM A BUCKINGHAMSHIRE GARDEN.

AUGUST 18.—How full of charm is the return after absence to a beloved garden! One comes home rejoicing, to see with a fresh eye each dear tree and each familiar spot of lawn or border, and bringing back stores of pleasant memories with sweet suggestions for new delights to perfect and bring to pass and make one's own another day.

I note for special use these:—A Mandevilla growing in the open air. It covers half the front of an old house, climbing up to the roof, and when I saw it the pure white blossoms were clustered thickly all over it. The situation in which this Mandevilla grows and has flourished for many years is warm and sheltered, the house-walls of hummel-stone, being built in a niche under a limestone cliff. Possibly this may not be the only greenhouse creeper that might thrive in the open air, at least during the summer months. We have tried successfully the white and the salmon-coloured black-eyed Thunbergia; also Convolvulus from Indian seed, which has richer and more varied colouring than the common Convolvulus major.

The lightness and gaiety of such a flowery hedge is indescribable. That which I saw is nearly 10 feet high, the framework made of crossed stakes, the Convolvulus climbing and twining up to the top and flowering profusely on both sides.

This manner of growing Gooseberries I saw at an old place in Hampshire, bordering the walks round three sides of the kitchen-garden. Nothing can be more neat and useful than these espaliers, the Gooseberries being easily gathered without much pricking by thorns, while nets fall comfortably over, protecting them from the birds. It was a delightful garden! A long green walk lay between rows of Hollyhocks, pink, black, white, and pale primrose. These lovely Hollyhocks had the free, spiring form, that is now so rarely seen when the blossoms seem to clump irregularly up the slender stem. Roses and most of the summer flowers had faded from the borders at the time of my visit. White Everlasting Pea and

red strongly scented Fraxinella were among the few that still bloomed in beauty. A favourite plant of red Fraxinella was lost from our garden a year or two ago, and I had not seen one since. The scent of the flower is said to be due to the emission of a vapour that can be set on fire with a lighted match. That, I have never tried. One has but to pass a glove lightly across the flower, however, and it is perfumed all over. In another part of this old garden grow white Strawberries of a peculiar kind. They flower and fruit at the same time, and the fruit, which is in flavour like a Hautbois, goes on ripening as late as October or November. Every little runner bears its flowers and Strawberries. A basketful of ripe berries was gathered the day that I was there—August 10. I believe in Shakespeare's time Strawberries were still called "Straeberries," from the Saxon "Strae" or "Stray," indicating the habit of the Strawberry in putting forth runners to a distance from the parent plant, giving to both independent life. In some outland country places they still talk of the "Straeberry."

In a beautiful sea garden, high above the sea, half hid in groves of Ilex, a spot so sheltered that even in winter the lawns are scarcely ever swept by the wild sea winds, I found the little white sweet-scented Orchis in the middle of the month, growing on the brown parched-up turf. There had been no rain there, nor hardly any dew; the lawns, destitute of any poor vestiges of verdure, lay "gasping as a thirsty land." Yet here and there, made bold by the idleness of scythe and mowers, suddenly arose these green and white points of Orchis. One of them, as it seemed in one night, shot up 4 inches, and this one I took home with me. It is set in water by my window, and now I can watch the untwisting of the plaited tress, as day by day its smoothness roughens with twin-petalled moonlight-coloured flowers. It was a pretty notion to liken the little flower-spike to tresses of the Virgin's hair! though one may perhaps just fancifully trace in it a mingling of Pagan fairyism; for mermaidens combed their sea-green locks, and I myself once knew the traditional fairy lady of a well, all in green, with long green hair. Her well-spring bubbled up by the side of a deep Somersetshire lane, and many children and old people have seen the green fairy rise at twilight from the water. The House, whose high windows and turrets look down over these brown lawns and flowers and Ilex woods, is romantic, like a poet's dream, rather than a house of the nineteenth century. Its stones, however, are the grey stones of an old house in Normandy. They were brought over many years ago, and rebuilt here on the edge of the sea in strange architecture, with the carved mouldings and gargoyles and oriel windows of the past, put in just as they were. The open parapet round the roof reads thus in stone letters:—"*Suave mari magno turbantibus æquora ventis Terra magnum alterius spectare laborem.*" The words seem to make music with the soft measure of the waves below, and the sound of the wandering winds. The thick-leaved Ilexes soon lose themselves in woods of Chestnut and Fir, and paths cut through them in lines of endless shade close in at last, each with an arch of sapphire sea. Beyond the edges of the woods wild Honeysuckle and low sea-blown Oaks, and Brambles, grow together in a sweet entanglement, and grassy paths between are set with purple Heather and Knapweed (Knops, or Hardheads), and yellow Fleabane'; and here a legion of butterflies perpetually dance and play, and make merry in the sunny weather. It should make amends for much sorrow in the world of Nature to see these thousands of beautiful creatures secure and happy in their innocent joy.

Along this green glade your feet are every moment ensnared by long-reaching Brambles, and every step disperses a fluttering crowd of butterflies. They are so tame that scarcely will they rise at your approach, often giving the observer time to stoop and examine with a lens their spangled wings and silver-topped antennæ and busy proboscis. The Fleabane is the butterflies' dear delight. (Did not the child who called them "flutterbyes" hit upon a better name?) Two or three of diverse kinds will often prank their wings, and unrolling long black tongues, dig for honey settled together on the same flower, though flowers may not be few; but when a Painted Lady (Vanessa cardui), and a silver-spotted Fritillary meet on one flower they are sure to fall out, and rising chase each other hotly. Besides the multitudes of common and uncommon white butterflies and little cloudlets of the azure-winged Alexis, Peacocks, and Tortoiseshells and Painted Ladies in troops with now and then a rarer clouded yellow Colias, or rapid Fritillary, disport themselves up and down the glade till past mid-day. Long may their happy world be unknown to green gauze nets and murderous ammonia bottles! I am curious to know if any variation has ever been observed in the markings of the wings of these insects. I have for years closely examined Peacocks and Tortoiseshells and Atalantas, and can never find the colours or patterns to vary in the least degree from those of the oldest specimens I can remember. In the glade dragon-flies dart fiercely to and fro, and wild "bees are busy on their threshold old." The honey gathered on that Hampshire coast is crystal pale this summer. It was made, as I was told, from fruit tree blossoms in the spring, the long-continued drought having dried up every drop of honey in the Heather-bells.

### HOME AGAIN!

And now I have been tasting the pleasures of roaming through my own principality once more!—noting with the keenest zest the changes that eighteen days have wrought. I want to go all over it again. In a grand red glow, covering an area of 462 square feet of lawn, lighting up the old hall and the windows of other rooms that look that way, like the reflex of some fine sunrise, just beyond the south porch, lies the Sumach tree (Rhus cotinus). I cannot say that it stands upon the lawn, as would be said of any other tree, for the beautiful soft masses of it are like nothing else but those great white cumuli, or summer storm-clouds, steeped in a crimson after-glow, when we watch their changeless glory moving slowly on upon the low horizon. These Sumach snows, however, are reddened by hot weeks of July suns; they cover all the tree, till gently they shimmer down and lie still upon the turf. Not a branch or twig, scarcely even one green leaf, strays out amid the lightness of these plumes of marabout to break their dim monotony. This plumage of the tree is sunny red, cooled with grey or lilac shadows. Ever since June has it been ripening into this miracle of misty beauty. The lawns are burnt, but the parterre is formal and brilliant—just as it should be. So are the zig-zags of Verbena and Pelargoniums beyond the Yew hedges. The southern wall is fragrantly overhung with festooned Clematis. But all these are quickly passed. I long to know all's well with the Fantaisie and the Boccage. Ah! the Sweet Pea hedge round the tennis-lawn is gone and past. Turn-cap Lilies, proudly splendid, replace the Roses of the Fantaisie. The Cryptomeria elegans, intermingling here with verdure of wonderful freshness, seem to rejoice in the dry weather, and fair flowers of deep blue Salvia begin to blow.

Three paces through the deep shadow of "the wood," and there is the broad border of the Boccage in all its glory. To know how this had fared in my absence, while yet the ground had not received comfort from any kindly rain, had been my secret trouble. I should like for the moment to be some one else, and as a stranger to describe this border quite impartially! Yet the only words I can devise as some one else's first impression seem cold and dry. Such as "A beautiful band of flowers, that reflects the highest credit on the care and skill which have made it what it is." That will not do. I must be myself, and try to give some faint outline of it. When I saw it last—last month—Roses and Pinks were over; and besides some budding Corn-flags and Hyacinthus candicans, there was little to give grace to the border, saving certain patches and rounds and clumps of green traced in and out between the Roses. I returned to find this young green grown out of all knowledge, and flowering with a strange luxuriance of bloom, the flowers all mixing in delicious confusion. There is Ladies' Pincushion (Saudades), made in pale coral, passing through velvet shades of red to deep "murrey," stuck with silver pins as usual. Lobelia fulgens (the Cardinal's Flower) burn between the tufts of white and lilac Sultan's Flower (Sweet Sultan). Gaillardia picta Lorenziana mingles with Gaillardia picta flowering in gold and crimson petals, fantastically nicked, set round in little coronets; a bunch or two of lilac Catananche, deep lengths of Marvel of Peru in three bright colours, many coloured China Asters, double Stocks, Lupins, dwarf Phloxes, one choice corner filled in with Salpiglossis of richly varied colours, brown, purple, and grey. Sword Lilies flash scarlet here and there amid all these, and grandest of all are the fine plants of Hyacinthus candicans, each plant sending up three or four great stems, blue-green with the bloom of health, and each bearing a ring of bells in ivory-white. A white "Peach-leaf Bell flower," (Campanula) near at hand betrays the only failure in the perfect beauty of these fine Hyacinthus flowers — failure in the purity of their whiteness. Against a low Beech hedge at the back there is a stately line of auratum Lilies, counting seventy-three great heads of bloom with store of buds rich in promise for weeks far into the autumn. And around the Lilies are enlaced large African Marigolds of lemon and deep gold colour, with scattered posies of little striped French Marigolds and of Zinnia Haageana. At the farthest end a thicket of Dianthus superbus scents half the garden, and nearest to the Fantaisie a narrow grass walk intersecting the border and leading into Glorietta is fringed with Lobelia senecioides luxuriantly green and most delicately blue. Chrysanthemum tricolor fills up the corner, and on the other side deep purple and blue perennial-blooming Pansies set off the clean yellow rays and chocolate eyes of Rudbeckia Newmanni. Towering above the Junipers tall "Flowers of the Sun" keep watch, their green buds not opened yet. Mignonette and honied Alyssum and orange and red Tigridias seem to grow naturally in and out between the other plants, with now and then a sharp gleam of Roses in second bloom. How obscure and dull is the thought picture, the best I can make of the Boccage border. Old Parkinson would paint it in a dozen words! He would just say "the place is like a piece of tapestry of many glorious colours to increase every one's delight." Yet the colour is not all. A pervading perfume works like a charm about the place to bind in one sweet whole the outward brightness of the flowers and the unseen soul of them, which is their scent.

I wonder how many moles there may be in the garden. The gardener certainly would borrow Keats' phrase, and echo heartily "the demon mole!" For they burrow and throw up their earthworks and overturn stones, and uproot precious plants, caring nothing for right or wrong. For me, the mole is simply "the four-handed mole," the odd little persecuted wild beast (one of the last left in England), the little velvet-coated gentleman-navvy, who excavates in darkness, carrying his subways across our neatest turf-walks without the least regard to propriety or order in the garden. At the entrance of the Fantaisie, indeed, for the last twelve years a mole-run has existed across the path. Our attempts to stop this right of way have signally failed. Scores of moles were caught year after year and gibbeted near the spot as a warning, till at last the order came for executions to cease. I could no longer endure the piteous sight of the beautiful mole-skin coat squeezed round the middle, and the two ungainly serviceable hands that had worked so hard, helplessly spread on either side. So the underground "Taupies" got the upper hand of us that time, and the run remains to this day. Long ago, when the world was young, mole-hills were thought to be useful for lambs to sit upon, or to shelter under if the wind blew cold. ("Nootie-stumps," they call them in Gloucestershire.) Lately, however, it has been discovered that "there is nothing more useful to the floriculturist, whether for pots or borders, than earth from a mole-hill; for, as the mole lives entirely on worms and insect larvæ which are found in the best soil, that which he throws to the surface while in pursuit of his prey, finely pulverised, and free from the seeds of weeds as it will be found to be, is just in the state for producing the best flowers."

A long-desired white Tigridia has just now for me all the charm of a new possession. The cream-white flowers, with crimson-spotted centres, are to me an exquisite delight. It is one of those strange beings which look as if they had come from another world. Until now, the two Tigridias—the yellow and the red—with their threefold flowers, seemed always incomplete. Now, nothing more is needed. I do not want a blue or a pink Tigridia; this mysterious white third is enough.

*September* 1.—The soft triumph of the Sumach is over. According to the supreme beauty of her prime, is now her forlorn and wretched ruin. All in a day, so it seemed, the feathery fluff began to crisp and loosen. One night the west wind blew in his strength, and left our Wig Tree well-nigh bald. The marabout plumes, blown hither and thither, accumulated in angles of the house, and all the borders thereabouts

were bedded deep in fluffy pink. But even this relic of grace is past, and the tree, nearly unleaved (for her feathers left no room for leaf), all dishevelled and hung with rags and tatters, is an almost ghastly sarcasm on her summer self. *E. V. B.*

# The Apiary.

## DOUBLING.

A FAR better method than killing the bees over the sulphur pit is that called doubling. It has been proved that the safest way to get bees well through the winter, is to have them strong—*i. e.*, to have plenty of bees. In point of fact it is more important to have plenty of bees during the winter months than honey. A few bees with plenty of honey may die of cold, while plenty of bees will keep one another warm and sleep away the time, not eating anything at all during the coldest weather.

The best way to double is to go to a weak hive and a strong hive. Take your bellows and smoke the bees well, giving them a few minutes to gorge themselves. Then quietly open both hives, and uncover the bees in the strongest hive. Quickly move the frames apart, so that other frames can be put between. Then uncover the bees in the weak hive, and take the frames and bees out and put them in the other hive, not altogether, but alternately with the others. The bees will be so hopelessly mixed that they will generally settle down quietly, but if fighting commences smoke them again and again till thoroughly subdued. Cover up the bees, and leave the two queens to fight it out. "The fittest will survive." Many of our most noted bee masters say "Kill one of the queens before mixing," but my experience is against this plan; because if you destroy one queen, and the stranger bees kill the other, you would have no queen at all. After two or three days remove all honey not required, and only leave enough frames that can be well covered with bees. Any pair of hives can be treated in this way, and the empty hives can be taken indoors and repainted in the winter months, and brought out again in the spring. The hives left out this winter might have their turn for a coat of paint next winter, and so on.

To double two skeps, drive both of them into other hives after being well smoked. Then put the hive you mean to keep on its old stand. Put a sheet before the hive and throw the bees that came out of that hive on the sheet. They will quickly and joyfully scamper home, but while they are scampering, throw the other bees on the top, and they will be hopelessly mixed, and all go in together. The smoke will make them all smell alike, and the two queens can fight it out as before. This can be done with any pair of hives, and the empty hives can have the comb and honey removed. Wasps are very troublesome now. No better advice can be given than old Dr. Butler's, viz, put cider or beer in a bottle "covered with paper that hath a hoal in the middle, and soe you shall catch manie." *Agnes.*

# The Flower Garden.

WE have at last got the much desired change in the weather, and the late soaking rains have got down to the roots of most plants, and which was so much needed, after the three months of dry weather. The brightness of the summer garden is now fast passing away, and the heavy rains and stormy weather of the last week have completely despoiled the Pelargoniums and other bedding plants, so that they will require a considerable amount of labour bestowed on them to make them endurable in the garden till the frost arrives. A few sunny days may make them a little bright again, but the wealth of bloom is over for the season. Much neatness should be observed both in the keeping of the flower beds and walks, verges, edging, and everything else about the garden. Mowing must now again have attention, or the grass will soon get unsightly. Clip Yews and Privets and other hedges if not already done, and tie up any pyramidal or columnar growing plants as Irish Yews, Junipers, and such-like trees, to preserve their form. Roses promise an abundant second bloom. Remove from them all suckers, weak and flowerless shoots, and secure standards against the wind that may be expected in this month, and loosen the ties of those recently budded Roses which may have started into growth. Subtropicals have this season made enormous growth, and should be securely staked.

One flowering bed that retains its beauty and freshness throughout the drought and heat, and withstands capitally rain and storms, is that of tuberous Begonias. I grow mostly seedlings, and find red and pink flowered varieties the most effective for bedding.

Herbaceous Phloxes, Asters, Chrysanthemums, especially the small dwarf early flowering kinds, are now in full bloom, and can be removed to fill up vacancies in beds or borders; and also a collection of late autumn-flowering herbaceous plants and shubs in pots, which can with the greatest facility be plunged in the beds as the summer plants are removed.

Tritoma uvaria and its varieties are magnificent plants, now full in bloom; many large plants have a hundred fine spikes of bloom on them. To have this plant in perfection it should never be removed, but allowed to grow into large masses, which should be protected in winter by strewing litter or leaf-mould over the crowns.

Calceolarias and Violas should now be propagated; the former do best in cold frames, but provision should be made to protect them from severe frost; pots or boxes should never be used for them, as they are most impatient of having their roots confined. Violas will strike and winter on any border where natural shelter is afforded.

The desired quantity of Pelargoniums should ere this have been propagated, and if not already done cuttings may yet be put in, but they will require the shelter of a frame or pit, and if it is heated they will strike quicker and better, and will not be so likely to damp off; but in fine weather full exposure to the sun and plenty of air will be most beneficial.

Alternantheras, Coleuses, Iresines, Heliotropes, and other like kinds of plants may still be propagated; a slight bottom-heat is requisite to ensure success. Damp must be guarded against by removing all decayed leaves, &c. The Chrysanthemums should have every attention, all side shoots should be taken off, and the plants staked and tied, and if extra large flowers are in request the buds should be thinned out, leaving only one or two buds to each shoot; they will be most useful for cut blooms, or for transplanting to the flower borders; but before removing the plants it is much safer to cut round them 6 or 7 inches with a spade, so as to sever all the roots at that distance from the stem. This should be done about fourteen days before they are removed. *W. Smythe, The Gardens, Basing Park, Alton.*

# Plants and their Culture.

## STOVE FLOWERING PLANTS.

A GOOD supply of these for autumn decoration will be found of excellent service from now onwards to the end of October, when the Chrysanthemums will come into bloom; the flowering season, therefore, of Allamandas, Clerodendrons, Bougainvilleas, Dipladenias, Rondeletias, Vincas, and Ixoras should be prolonged to meet these requirements; indeed, for some weeks to come they will prove of as great value as they have hitherto done during the summer season. To obtain the best results from the material at command the temperature of the stove must not be allowed to decline much during the remainder of the flowering season. A frequent mistake is made in suddenly lowering the temperature at this season. It is thought that the plants will start thereby into growth with renewed vigour in the spring; such, however, is not the case, for if the wood is not well ripened from now onwards by a dry and warm condition of the atmosphere this result cannot be obtained. The maintenance, therefore, of a slightly reduced temperature from that hitherto in force will meet both wants, viz., the continued supply of cut bloom and the ripening of the wood. When the temperature is allowed to drop the results will soon be apparent in the injury caused to flowers and foliage by damp or excessive moisture, which cannot then be dispelled, from want of active circulation of the air. Rather more ventilation should be given when possible, and the atmospheric moisture reduced to a considerable extent.

## STOVE FINE-FOLIAGE PLANTS.

Some of the more luxuriant of these will in all probability have attained a large size, and become too large to be stowed away for the winter. Rather than keep such plants it will be far wiser to dispose of them at once, if possible, breaking them up for stock; reduce their dimensions, or if there are younger plants that can take their place throw them away. I need hardly say these latter remarks do not apply to Tree Ferns and Palms, which can usually be disposed of to advantage otherwise. Large Pandanuses are a nuisance rather than otherwise, therefore clear them out, younger ones will soon take their places. Huge spreading plants of Marantas, as M. zebrina, overgrown Alocasias, and any other specimens that impart a dense shade, and will not permit of another plant being grown partly underneath them, should be considerably reduced in size prior to rearranging the stove for the winter. The pyramedal form is not, we know, very popular with exhibitors, but is, nevertheless, the best shape of training to adopt, the plants taking less room, and when in their growing quarters looking far better than the flat or oval-topped plants; the shape we have advised also sets off all the long narrow-leaved pendulous varieties to the utmost possible advantage. When tying these plants use tarred string in preference to any other material, because of its lasting properties. Tall plants of Dracænas will be an advantage rather than otherwise, when grown on a single stem. If denuded of their lower leaves by reason of age, so much the better through the winter months; such plants will form an ornamental feature in future arrangements. If it is desired to reduce the height of any, this can easily be done by partially severing the stem (close up to the lower leaves will be best), then bind some moss around it, and after having broken a flower-pot in two halves, bind the same together again around the stem and fill in with good sandy soil to encourage the young roots. This remark on reducing the height of Dracænas also applies to Cordylines that are generally grown in the conservatory, and more frequently than not miscalled Dracænas. *James Hudson, Gunnersbury House, Acton, W.*

# The Kitchen Garden.

## CAULIFLOWER.

SOME have given up the old custom of keeping autumn-sown plants in frames or under hand-glasses through the winter, depending on spring-raised seedlings of early dwarf varieties for first cutting, such as Veitch's Early Dwarf Forcing and Sutton's First Crop. Both these varieties, when sown in February in heat, will produce beautiful small firm heads some days earlier than autumn-sown Early London; but they will not bear comparison with the last-named variety for size, colour, and flavour. It is, therefore, advissble to store a good batch of this old and valuable variety for spring planting. Likewise a good batch of Veitch's Autumn Giant planted out in the spring along with Early London will be sure to prove useful where an unbroken supply of Cauliflower is valued. The plants should be stored for the winter either under ordinary handlights, on the open quarters, or planted out in frames near the glass. For those placed under handlights the soil should be well manured prior to planting them out at the beginning of October, so that part of the contents of each handlight may remain undisturbed in the spring to come to maturity. Six or eight plants may be placed under each to winter, allowing four to remain in the spring, removing the remainder to the open ground after severe weather has passed. Any plants left in the seed-beds may be lifted and replanted several inches apart on the same bed; during mild winters they frequently pull through and prove useful. *G. H. Richards, Somerley, Ringwood, Hants.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Sept. 21 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Clearance Sale of Nursery Stock, Ferns, &c., at the Sidcup Nursery, by Protheroe & Morris |
| WEDNESDAY, | Sept. 23 | Sale of Dutch Bulbs, at Stevens' Rooms<br>Clearance Sale of Greenhouse Plants, at Pounce's Nursery, Hendon, by Protheroe & Morris<br>Sale of Dutch Bulbs, at Stevens' Rooms. |
| THURSDAY, | Sept. 24 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Great Trade Sale of Ferns, &c., at Reeves' Nursery, Acton, by Protheroe & Morris<br>Sale of Imported Orchids in variety, at Stevens' Rooms |
| FRIDAY, | Sept 25 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Sept. 26 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Sale of Dutch Bulbs, at Stevens' Rooms. |

THE cultivation of GRAPES in the OPEN AIR without further protection than that afforded by a wall with a southern aspect, has been considered of sufficient importance by various provincial horticultural societies to induce them to offer annual prizes for their production. It must be admitted, however, that such productions are usually unsatisfactory. But even last year some very fair crops of outdoor Grapes were ripened in various neighbourhoods, and should the weather of the present autumn continue favourable, a still more favourable result may be expected.

Indeed, it appears quite possible that if outdoor Grapes had even a tithe of the attention bestowed upon them which it is considered necessary to devote to the same kind of fruit when grown under glass, the result might be much more satisfactory than it usually is. The varieties of the Grape Vine which may with reasonable prospects of success be recommended for open-air culture in this country are few in number. The well-known Black Hamburgh variety has been known to ripen its fruit in the open air under exceptionally favourable circumstances, but the chances of its doing so are so uncertain, indeed so improbable, that it cannot be recommended for open-air culture. On the other hand, the Black Esperione, which is an excellent variety, may be recommended for the purpose, being an abundant bearer, while the fruit is of good quality, although the variety is less frequently grown than it deserves to be. Black Prince is also an excellent variety, and in favourable seasons will ripen its fruit satisfactorily on a south wall in the open air. The only other black variety is the Black Cluster; the fruit is sweet, without much flavour, and the bunches and the berries are small, but it will ripen its fruit in most seasons.

Of white sorts which can be recommended for open-air culture possibly the best is the well known Royal Muscadine, but Grove End Sweetwater, which is also an excellent variety, will succeed equally well. Buckland Sweetwater produces large bunches and large oval-shaped berries of good quality, but can hardly be recommended as an outdoor variety, unless in an exceptionally favourable situation; a few years since, however, a plant of this variety was inadvertently planted upon a south wall, and last year it ripened its fruit very satisfactorily, and it has every appearance of doing the same during the present season. To secure success with this variety in the open air it is necessary that the berries in each bunch should be well thinned out.

In all cases where Vines are planted out-of-doors it is necessary that properly prepared and ample root-room should be provided for them; but for Vines in the open air a rich border is not necessary, moderately rich and well-drained soil being all that is required. The Grape Vine being a remarkably accommodating plant, will make the best of unfavourable circumstances, as in cases where no particular care has been bestowed upon it, and even where the roots are necessarily under a paved or asphalted yard, a gravel path, or a hard roadway. But such Vines in general suffer more from the neglect and mismanagement of their branches and foliage than from neglect as regards their roots, which, if left to themselves, will in most instances make successful efforts to take care of themselves. At the same time it should be borne in mind that they may be greatly benefited, and their crop of fruit augmented, and its quality improved, by the timely application of rich mulchings, liquid manure well diluted, or even copious watering with rain or river water during dry periods.

Where it is desired to cover a wall or portion of wall with Grape Vines there are two methods which may be successfully followed. As regards the first method, as soon as the border or bed of soil to contain the roots of the plants has been prepared, strong cuttings of the desired sorts may be inserted in the soil in front of the wall, at a distance of, say, 3 inches from it; these cuttings may be inserted at about a foot apart. This is in the expectation that each cutting will grow, which will generally be found to be the case; but to guard against anything like failure in this respect the cuttings may be put in closer together, and the superfluous ones may afterwards be weeded out. These cuttings will strike root freely enough in the ordinary

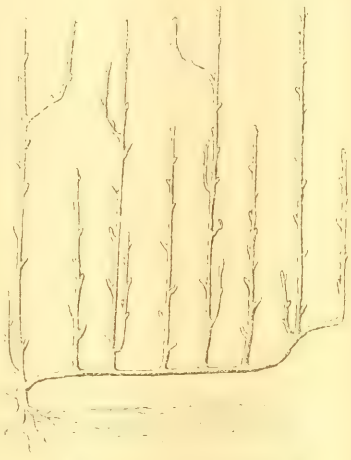


FIG. 80. METHOD OF TRAINING CUTTER VINE.

soil of the border, but in order to facilitate this process a small portion of sifted leaf-mould and silver-sand in equal parts may be placed around the base of each cutting, which should be inserted as early in the autumn as they can be obtained. If this is duly attended to, each cutting will be found to have callused, and even to have emitted roots, before winter fairly sets in; and in the following spring each rooted cutting, which will be at a distance of 1 foot from each other, should be allowed to produce one shoot, which should be secured to the wall. This shoot, being the production of the first season of the plant's existence, will necessarily be weak, and should, in the autumn, be cut back to the base, and during the second season each plant ought to ripen a shoot, 3 or 4 feet in length, which will furnish fruit during the third year.

The second method of furnishing or covering the face of a south wall with the Grape Vine is to use for the purpose plants established in pots, and these may either be planted early in the autumn, or in the following spring; in either case the roots should be carefully spread out in planting, and the surface of the soil should be mulched with litter of some sort, to check evaporation, and to keep the roots in an equable temperature. The Vines need not be planted nearer to each other than 6 feet, more or less, and the rod should be cut back to nearly the surface of the soil. Each plant should be allowed to produce two shoots, which should during the first season be trained vertically, and encouraged as much as possible. In the autumn these will probably have become strong rods, and should be pruned and brought down to the horizontal position, training one to the right and the other to the left at a distance of 1 foot from the surface of the soil. From these vertical shoots, at 1 foot apart, should be trained as shown in the illustration (fig. 80) during the second season, which will also bear a crop during the third. By either of these methods the surface of a wall of any reasonable height may soon be covered.

When the wall on which the Vines are to be trained is low, say some 5 or 6 feet high, the long-rod system of training is possibly the best. This consists in annually training a young rod, or shoot, from the bottom, to take the place of the rod which bore the fruit on the previous year, which should be cut out as soon as the fruit is gathered; but where the wall is high, or in the case of the gable-end of a building, &c., the spurring system will be found to be the most suitable for the purpose, being neater, and requiring less attention. The rods should be trained vertically, at a distance of not less than a foot apart, and should be cut back in the autumn to a healthy and well-developed bud; this should be done each year until the top, or the highest part of the wall it is desired to cover, has been reached. Each bud will generally break and produce a shoot which at the third or fourth joint will, if the Vine is in good condition, present an embryo bunch of Grapes, when the end of the shoot should be pinched off at the first or second joint beyond the bunch. In cases where a shoot may fail to show a bunch such shoot should not be rubbed off, but should be allowed to develope itself in all respects the same as the shoots which show bunches, as like them it is required to form a spur to produce shoots for future seasons. When spurs are fairly formed upon the rods each spur will generally produce several shoots, and the best placed and most promising should be selected, and the others rubbed off. When the flowers are about to expand each shoot with its bunch should be tied back to the rod which produced it. This is better than the practice of nailing them to the space of wall between the rods, having a neater appearance, leaving, as it does, the space of wall between the rods uncovered by foliage, and exposed to the influence of sunshine, and it consequently becomes warmed, and the temperature is thus increased more than would be the case were the surface of the wall entirely covered. The berries in each bunch should be carefully thinned-out as soon as they are large enough to allow of this being done, and not more than one bunch should be allowed upon each spur.

The operation of thinning-out the berries necessitates some little trouble, but it is amply repaid by the superior quality of the fruit. In the case of such varieties as the Muscadine, which generally produces small bunches, and the berries do not attain to a large size, this thinning out may sometimes be omitted; but it is absolutely necessary as regards such sorts as the Esperione and Buckland Sweetwater. As the season advances, all leading shoots should be stopped when they have attained to a length of some 5 feet, as this tends to strengthen the lower part of the shoot, and not more than 3 or 4 feet of young wood can be expected to thoroughly ripen in one season in the open air.

Care should be taken to preserve the foliage of the spurs in a healthy condition, particularly the leaf in immediate connection with the bunch, which if removed or injured, will

materially effect the development of the fruit. At the same time all laterals, as they are called, should be repeatedly stopped, for if allowed to grow unrestricted, they only tend to waste the energies of the Vine, unduly shade the fruit, and injure the leaves which it is so desirable to retain in a vigorous and healthy condition. In this respect, however, it too frequently happens that the Grape Vine in the open air is sadly neglected.

Taken altogether, it may possibly be concluded that, during most seasons, this crop might with very little more care and attention than is usually bestowed upon it, be rendered more satisfactory than is generally found to be the case. In France the berries are used in puddings and as conserves, but on the whole the chief use of outdoor Grapes is for ornamental purposes, for few plants form a handsomer cover for walls. For economic purposes, other fruit trees fill the space better; but as there are many who have a sentimental regard for the Vine, the above remarks may be useful.

—— Wistaria.—The tree here figured (fig. 81) from the garden of J. B. Torry, Esq., Shrubb's Hill, Sunningdale, covers a wall 9 feet high for a length of 340 feet. These figures will suffice to show what a wealth of beauty and delicate colour must be presented by this tree. Our summers are rarely hot enough to enable the pods to ripen; possibly our insects do not fulfil their duties as marriage priests; at any rate, on the Continent the pods are produced much more freely than they are in this country. Once or twice we have seen pods of the white variety from the nursery either of Mr. Parker or Mr. Noble.

—— The Aberdeen Show.—At the recent flower show at Aberdeen held in connection with the British Association, the Queen's prize for the best collection was carried off by Mr. P. W. Fairgrieve, gardener to the Dowager-Duchess of Athole. His collection consisted of Black Alicante and White Muscat of Alexandria Grapes; Nectarine—Pitmaston Orange; Peaches—Royal George and Noblesse; Plums—Victoria and Guthrie's Gage; Pear—Louise Bonne of Jersey; Apricot—Shipler's; Melon—Dunkeld Seedling. The collection from Haddo House, which was 2d, was also very fine. Mr. Alexander Burns, jun., Aberdeen, exhibited an attractive collection of fruits. The show of vegetables was good in every section, the Potatos, Onions, Leeks, Cabbages, &c., being all of fine size, shape, and quality.

—— Packing Grapes.—In our description last week of the best mode of packing Grapes we omitted to say that the basket in which the Grapes were placed was lined with a layer of wadding covered with tissue paper.

—— The Bentham Portrait.—The portrait of the late George Bentham, copied from that in the possession of the Linnean Society, at the expense of a number of friends of the deceased botanist, has been presented in the name of the subscribers to the Royal Gardens, Kew, by Sir John Lubbock. The portrait is slightly modified from the original, and is superior to it in the opinion of some as a likeness. It will be hung in the herbarium, which owes so much to his liberality, and in which he accomplished so much of his life-work and where (in conjunction with Sir J. D. Hooker) he elaborated the *Genera Plantarum*.

—— Saccolabium Heathi.—We have received a white bloom of a Saccolabium under the above name, which appears to be a variety of S. Blumei. The colour is a pure white, and the spike, as seen in an accompanying photograph, of great length. It will be a welcome addition to the genus.

—— The Caister Life-boat Relief Fund.—The Covent Garden branch of this fund has remitted the sum of £363 10s. to the local committee. Covent Garden or the traders therein are not only munificent supporters of the Gardeners' Royal Benevolent, but they recognise the claims of the Lifeboat Institution also. The sad disaster which the present subscription is intended to alleviate befel the crew of the boat established by the good feeling and liberality of "Covent Garden."

—— The "Botanical Magazine."—The September number of the *Botanical Magazine* contains coloured figures and authentic descriptions of the following plants:—

*Anthurium Glaziovii*, tab. 6833.—A stove Aroid, of tufted habit, the leaf-stalks thickened at the top, blades oblong acute, with prominent and distant veins. Peduncle as long as the leaves, spathe lanceolate, recurved, purplish on the inner surface. Spadix longer than the spathe, terete, conic, purplish-red. The plant is supposed to be a native of Rio, and flowered at Kew.



Fig. 81.—The wistaria at shrubb's hill, sunningdale.

*Pentstemon Menziesii* var. *Scouleri*, tab. 6834.—A beautiful, slightly shrubby species, native of British Columbia and northern California, with narrow oblanceolate serrate leaves, and erect racemes of pale rosy-lilac, two-lipped flowers, each about 2 inches long.

*Arctotis aurcola* and *A. revoluta*, tab. 6835.—Very handsome Cape Composites, like Gazanias, suitable for greenhouse decoration, or for outdoor beds in summer.

*Didymosperma nanum*, tab. 6836.—A dwarf Palm, not exceeding 2 feet in height, with pinnate green, glabrous leaves obliquely wedge-shaped, erose pinnæ and erect cylindrical flower-spikes. It is a native of Assam.

*Primula Auricula*, tab. 6837. — This yellow-flowered alpine species, with obovate cuneate leaves with pale margins and mealy under-surface, is figured in view of the coming Primula Conference, as its relation to the garden Auricula is not wholly made out.

—— FLOWER SHOWS. — Speaking recently at Paisley Major COATS remarked that few of the general public who attended these shows fully appreciated the kindness of those gentlemen who provided these displays. It was not only the trouble of sending the flowers, but the damage to which the plants were subjected in the removal, and the injury from gas and dust. At Montreal he was very much pleased to see a scheme conducted by the Horticultural Society. There it was arranged for the proprietors of greenhouses to allow the members of the Society access once or twice in the year, on certain days, to their conservatories. In this way the members of the Society had the pleasure of seeing the plants as they stood. They were not disturbed or injured by moving, and the pleasure was very much extended. In this way he believed the Society would obtain a very largely-increased membership, and they would only have to guarantee to proprietors that great care should be exercised, and that their flowers would not be damaged. He felt sure also that the gardeners would be pleased to see visitors, and it would give them a stimulus to keep their places in order. This proposal is already partially carried out in those cases where flower-shows are held in private gardens. We should be glad also to see garden establishments thrown open occasionally at a small fee, the proceeds to be given to the Gardeners' Royal Benevolent Institution.

—— MANGNALL'S QUESTIONS.—It is deplorable that our secondary schools should still be made the means of conveying such information (?) as this:—"What improvements were made in MARY's time?—Hemp and flax were first grown in England; and the Horse Guards instituted; starch was also invented." A new edition, 1859, p. 131.

—— THE SEED HARVEST OF 1885.—Messrs. JAMES CARTER & CO. report that "The peculiar season we have experienced has had the result of retarding the development and ripening of all kinds of seeds, and the report we are enabled to offer at date of writing is consequently not quite so comprehensive as that we are accustomed to make, but the general estimates we have embodied may be relied upon.

"*Red Clover.*—In consequence of the dry and somewhat irregular season, the English crop is later than usual, and it is expected that the great scarcity of animal food from the same cause will induce many growers who had intended to take seed to convert the crop into cattle food. The low prices also realised last year has led to a smaller acreage than usual being left for seed, so that it is not expected the English crop will be a very large one.

"The reports from France, Italy, Hungary, Denmark, and other producing districts, speak of an indifferent output, the extreme drought having greatly prejudiced the prospects, and everything depends upon a good rainfall, which at the time of writing has not been generally experienced.

"From America the reports are not propitious; in fact, the estimates of the crop are so short that it is expected large purchases of European seed will have to be made to meet the deficiencies for home consumption.

"*Cow Grass.*—The limited crop of this article, the production of which (in reliable seed) is entirely confined to England, promises to be a fair average, with a quality equal to that of last year, and values will probably open at last season's closing prices. The importance of this crop is being more recognised every year, inasmuch that foreign Cow Grass is always of doubtful quality, and does not compare favourably with best English samples.

"*White Clover.*—There is a fair average crop of English seed, which is expected to be harvested generally in good condition. Reports from Germany, France, Hungary, Netherlands, &c., and other Continental producing districts, point to the crops being less plentiful than last year. The quality all round is expected to be quite up to last year's average, and the ultimate output may yet exceed present expectations.

"*Alsike.*—Some very nice English samples are coming forward, and will be sure to command good values, as the crop of this article on the Continent is smaller than it has been for several years. Canadian and American reports are a little more satisfactory, but the small quantities these districts produce for export have no effect upon the general values or supplies.

"*Trefoil.*—An average crop both in English and foreign seed, and reasonable prices are at present asked for bright and bold seed.

"*Lucerne.*—This crop is likely to be a fair average one.

"*Timothy.*—Reports not yet perfect.

"*Italian Rye-grass.*—The English and Scotch crops have been secured in fine condition, and quality will be above the average. Values are at present ruled by reasonable prices.

"*Perennial Rye-grass.*—This is also an abundant crop, in excellent quality, and can be bought at present time upon favourable terms.

"*Rape.*—Is better in quality and lower in value than for many years.

"*Swede and Turnips.*—In quality exceedingly good, but the crops have come in very short in many districts. Values may increase as the season advances.

"*Mustard.*—A good average crop, but an exceptionally brisk demand for home sowing for spring food has caused values to harden considerably.

"*Canary and Hemp.*—Reports not yet perfect.

"*Natural Grasses.*—These may be considered satisfactory as to average crop, and samples generally possess higher standards of purity than they have shown in previous years. There is necessarily a great range of values in these articles, as the price entirely depends upon vitality and purity. As usual there is an abundance of low quality seed upon the market, at all sorts of prices."

—— AGRI-HORTICULTURAL SOCIETY OF INDIA.—Complaints are made that the subscriptions to this Society are too high for those living away from Calcutta, and now that European and American seedsmen are establishing agencies in that city gardeners can readily obtain from that source seeds which formerly they could only obtain conveniently through the Society.

—— "FLORAL EVOLUTION."—In these go-ahead days one ceases to be surprised at discoveries, &c., which would have created a great sensation less than a generation ago. The following quotations, however, are calculated to startle or amuse matter-of-fact gardeners who do not deal in the miraculous. The writer evidently goes as far beyond Mr. GRANT ALLEN as that gentleman goes in advance of most of those who have accepted the doctrine of evolution. "I take the liberty of sending you a specimen of floral evolution. They are two blooms of the Herb Paris (Paris quadrifolia). Perhaps you are aware of its existence. If you deem it of any importance I would send further particulars, together with a seed-vessel of last year. The enclosed are two of thirty blossoms." It may be as well to state here that the specimens in question were flowers of perfectly typical Lilium Martagon, and an answer to that effect was sent to the gentleman from whose letter the above sentences are abstracted. What follows reached us in a few posts. "Whatever may be the similarity of Lilium Martagon, the specimen sent has its origin in Herb Paris. It is eighteen years since I dug the plant up in a wood in the neighbourhood; the plant was very abundant, so I secured a fine specimen, and it has remained to tell a strange tale. For some years it remained true to its nature, then it met with a succession of accidents, from children and the ravages of slugs. Three years ago was the first time in its new form, when it grew a little over 2 feet, and having ten blossoms. . . . You may rely upon its being a genuine case of floral evolution. I may say I have no other interest than to bring to your notice an interesting case in the botanical world."

—— THE KEW ROCKWORK.—In spite of the lateness of the season this looks particularly well. The clumps of stately Acanthus, Tritomas, Pampas-grass, hardy Bamboos, Hyacinthus candicans, produce a very bold effect. The Eryngiums still remain in bloom, and lovely patches of Cyclamen hederifolium are very winsome. Colchicums and autumn Crocuses are making their appearance. Some plants like the Bamboos have outgrown the accommodation provided for them, producing a feeling of incongruity, but considering the great number of subjects there is a remarkable absence of that muddled tangle which ill-kept rockeries present. The rockery must decidedly be considered one of the greatest attractions to Kew of late years. We are glad also to see improvements in the shrubbery beds. Too many of these consisted of mere thickets of common Laurel or other uninteresting shrubs, but now several of these have been replaced by beds of hardy shrubs selected for their variety, interest, and beauty of form and colour, thus carrying out the idea often urged in these columns, of affording to garden lovers an opportunity of seeing the most interesting and most suitable plants for the adornment of the garden and specially those which are not generally met with in market establishments or private gardens.

—— DASYLIRIONS.—Some of the species of this genus will thrive with very little or no artificial heat. In the *Jardin d'Acclimatation* at Paris we saw a nice lot of plants which had not been housed at all during the winter of 1883-84; these had withstood without injury 10° of cold (Centigrade). The only shelter accorded them was a sort of awning to keep off rain, &c. The Dasylirions are graceful plants and are general favourites in French garden, nicely grown examples cultivated in the open in Southern France are regularly sent to Paris where they are used largely for the decoration of apartments, &c.

—— WASHINGTONIA ROBUSTA.—This is a new Palm described by Herr WENDLAND in the *Garten Zeitung*, and figured in a recent number of the *Revue Horticole*. It was introduced from the Sacramento River in California River in California, and may therefore be treated as a greenhouse Palm, well suited for the decoration of apartments. It differs from W. Pritchardia or Brahea filifera by its more robust and more compact habit, by its sparse leaves of a bright green, with leaf-stalks provided with strong short curved spines; by a deep blackish-violet tint on the back of the sheath, more or less prolonged on to the leaf-stalk; and by the smaller, rounder leaf-blade. This Palm thrives in the South of France, where long-continued drought seems to do it no harm, and where it has been subjected without injury to 6° or 7° of frost.

—— JAPANESE PLANTS. — Under the title of *Nippon Shokubutsumeii: or, Nomenclature of Japanese Plants, in Latin, Japanese, and Chinese*, a book of some 312 pages was published in Tokio last year. It has been compiled by Mr. J. MATSUMURA, Assistant Professor of Botany, and supervised by Mr. R. YATABE, Professor of Botany in the University of Tokio. The book is not one of a nature that admits of criticism, and we can, therefore, only say that as a mere reference book it is calculated to be of much use. The arrangement is alphabetical, the Latin names being placed first, with the authorities and natural orders; then the Japanese names, both in Japanese and English characters, and the Chinese names in Chinese characters. In this way 2406 plants are enumerated, after which follows three indices, one in Japanese characters, another (which will be very useful to all who have anything to do with Japanese plants or their products) of Japanese names in English characters, and another in Chinese. The titlepage of the book, as will be seen, is in English, and it is published at Tokio, by Z. P. MARUYA & CO. The book is well bound in English style, with mottled covers and red edges.

—— CARTER'S GRASSHOPPERS V. CROSS ARROWS.—The above match was played at Lords', on the ground of the latter club, on Saturday, in rather unfavourable weather, the wicket being heavy and treacherous and the light bad. After a closely contested game the Grasshoppers obtained the victory. Score: Cross Arrows, 58; Carter's Grasshoppers, 59. The umpires were—Grasshoppers, Mr. C. H. SHARMAN; Cross Arrows, Mr. J. GRUNDY.

—— GARDENING APPOINTMENTS. — Mr. H. VICKERY, late Gardener at Testwood Park, Hants, has been appointed Head Gardener to R. S. TAYLOR, Esq., Huntsmore Park, Iver, Bucks.—Mr. E. GREGG, late Foreman to Mr. GILMAN, of Ingestrie Gardens, has been appointed Gardener to J. O. SHAW, Esq., Arrow Park, near Birkenhead. — Mr. G. W. LUCAS, lately Gardener to Colonel NOEL, Clanna Falls, Lydney, has been appointed Gardener to C. LIDDELL, Esq., Peasmarsh Place, Sussex.—Mr. PRESTLEY HOGBIN, Head Gardener at Porthgwidden Gardens, Truro, Cornwall, is about to give up the management of them on account of ill-health.—G. H. GOLDSMITH, for fifteen years Gardener at Hollunden, Tonbridge, has been appointed Head Gardener to E. G. LODER, Esq., Floore, Weedon.

## PROLIFERATION IN FERNS.

THE interesting note and sketch in a recent number of the *Gardeners' Chronicle*, from Mr. Chas. Druery, on the various forms of proliferation in Asplenium Filix-fœmina, Bernh., have recalled to my mind the numerous and varied instances I have observed among Ferns in a wild state, chiefly in the western tropics; for it is in these and other such warm regions, where the fronds of Ferns are perennial, that the feature is most common, and reaches its greatest development. Following as our guide in classification Hooker and Baker's *Synopsis Filicum*, we find that the large sub-order Polypodiaceæ includes nearly all, though not quite all, the instances of proliferation. Taking the tribes of that sub-order, we find that it is rare or infrequent in Cyatheæ, Hymenophylleæ, Dicksonieæ, Davallieæ, Pteridеæ, Grammatideæ, and Acrosticheæ, while Blechneæ, Aspenieæ, Aspidieæ, and Polypodieæ, contain the bulk of the examples. In Aspenieæ it is probably more frequent than in all the other tribes together, but in no one is it absolutely absent. In the genera it is not so general, and there are several in which no instance has been observed. The part of the plant in which it manifests itself varies, but is constant in any single species. Taking a general review, however, of the proliferous species, the feature is exhibited in one or another on all parts of the vascular system, from the roots which spread like threads through the ground to the tips of the more slender ribs which ramify to the margins of the leaves; but I have never found it on all these parts of any one species in a wild state. As a supplement in reproduction to the normal generative function in Ferns, proliferation exhibits three very distinct, and, in each case, very definite forms, which are early recognised as distinct by the most casual observer. Two of these are limited to three of the smaller genera, while the third is common to many species of several genera.

These forms of proliferation are:—1st, the formation of fleshy bulbils or tubers; 2d, stolons; and 3d, ordinary vegetative buds. Examples of the first are found in Cystopteris bulbifera, and in two or three species of Nephrolepis. In the former they arise on the fronds, and in the latter on the subterraneous roots. Both bulbils and tubers are of a firm fleshy substance, and can consequently remain dormant without injury several months, should the conditions affecting growth be unfavourable to their immediate vegetation, which state is generally the case with one of the examples mentioned, because of the severity of the winter over the greater part of its range and frequently, in the other instance, because of periods of drought acting with the dry and rather bare situations in which the plants are as a rule found. The bulbils are composed of two or more fleshy lobes, like cotyledons, from the base of which the germ starts, somewhat as the plumule does in a Pea. The tubers are solid, small, like some of the wild species of Potatos, and they vegetate from the surface in a similar manner.

The second form—the production of stolons—occurs in Blechnum and Nephrolepis. Wiry shoots are thrown out above the surface of the ground, several inches to a foot or more long, which root and form a plant at the extremity. When established these effect other removes of the same character, and so the plants spread over the surrounding ground, cover banks or rocks, or ascend the trunks of trees, and in the West Indies are, not inaptly, called Walking Ferns. This form of proliferation differs materially from the rest, but the same free diffusion is attained by several species which are exclusively subjects of that.

The third form—the formation of vegetative buds—is, as I have said, the most common, and affects numerous species of several genera. Though plentifully illustrated in very diverse genera, it is, as before hinted, probably most frequent among the Asplenia. Due partly to a corresponding difference of habit, and partly to the position on the fronds in which the buds are produced, it falls into two distinct divisions. In the first of these the buds become established at a very early stage in their career while still connected with the parent plant; in the second they have to pass through a probationary period, and are at length separated from the parent before they attain, or even begin to attain, the fixture in *terra firma* necessary for their survival. To the former belong rootbuds, which, being already in the soil, no element ever disturbs the even and uneventful course of their development, and the majority of terminal buds, *i.e.*, those which arise at or near the extremity of the rachises or ribs of prostrate or arching fronds. Where the end of the spreading frond might not perhaps reach the surface of the ground the bud is often projected on a slender, much elongated, flagelliform tail in order more certainly to accomplish this. The connection remains, and aided, no doubt, as much by this, at least during the earlier days, as by what it gathers by its own incipient feeders, the development to the adolescent state is relatively; compared to that in the other subdivision, a rapid one. These are the instances in this division to which I have adverted as resembling in the facility they thus possess of spreading the truly stoloniferous species. In a few cases, in which the habit of frond is pinnatiform, the buds are produced at the ends of the pinnæ generally, taking the place of a terminal leaflet, as well as at the end of the frond itself. In other cases, in which it is simply lobed or more or less entire, they spring from the margin, usually from a crenature or sinus. In the other subdivision the buds are produced on some part of the surface of the frond distant from the ground, or sufficiently clear to prevent connection. In some of the larger species they are elevated several feet above it. Here they are more copious, often most abundantly so, occupying the axils of the pinnæ, and frequently other parts of the vascular surface. During the embryonic stage they are sustained entirely as outgrowths from the parent frond, but gradually they emit rudimentary fronds and rootlets, which successively increase in size and efficiency, and thus they become strictly, for the time, aërial subjects, deriving as the parent fronds become enfeebled by age, or their connection with them is reduced by the slow process of disarticulation, which operates at least in more cases, and possibly, to some extent, in all, their sustenance from the atmosphere.

Thus existing, they are prepared to bear successfully the period while unconnected that must elapse, in the case of each, after they fall, or are dislodged, from the elevated home in which their infancy has been spent. How effectual this preparation is may be seen by the rapidity with which they become established, and, if the weather be favourable, without the least indication of suffering in the course of effecting this. A plant taken from the ground, laid side by side with one of them, would perish in the same time. In other instances, which, however, are comparatively rare, the same result is attained in a different way. Instead of throwing out roots and foliage, or at most doing so only very tardily, the bud slowly swells into a strong, scale-covered, fleshy rhizome, which, after it drops, will endure for a considerable time very adverse conditions, should such by any chance be encountered. I have seen these curious rhizomes an inch or two long, and as thick as one's finger or thumb. These derive all their nourishment from the frond to which for a considerable period they remain tenaciously attached. Root-buds occur in several species, but their true origin among wild plants is not always recognised, for, springing up, often plentifully, around the parent plants, they look like normal spore-produced ones. Species of several genera, which else resemble each other very little, have this characteristic in common. In none of the cases I can recall does foliage proliferation accompany root proliferation. In infrequent cases buds arise on the naked petioles of the fronds. The most remarkable instance I remember of this is in Asplenium monanthemum, L., which has slender polished, indurated stipes, quite devoid of any hollow or nidus, such as in other species the bud usually originates in. The stems of tree Ferns occasionally become bifurcated by budding at or near the crown. In a few arborescent species, too, buds normally spring from the base of the primary stem, and from other shorter stems around that. The most abundantly proliferous species have the most multifidly divided fronds. Such are occasionally seen literally covered with the developed buds.

Among the more leafy species in which the feature is also freely developed the buds occasionally appear as if growing in the membranous surface; really, however, they are on the slender ribs which run through it. Other species, again, as I have said, exhibit the feature around the margins of the leaves. Hemionites palmata, Linn., and some varieties of Ceratopteris are instances of this form, in both of which it occurs on the prostrate unsoriferous fronds. There are other instances, too, of dimorphic species, in which bud-production is mainly but not uniformly confined to the barren fronds. In all such cases these fronds are more or less prostrate, while the soriferous ones, in which it is infrequent or quite absent, are erect. In Polypodium reptans, Sw., Aspidium ilicifolium, Fée, and Fadyenia, as instances among others, the former are radicant at the apex, while the latter are not. In these dimorphic cases the form of reproduction possessed by each kind of frond serves its own purpose best, and is most effectual. The soriferous or fertile fronds being elevated, the spores when shed are more likely to reach new ground quite clear of the old plants, and thus afford a better chance of survival to the plants they produce, while the buds of the prostrate sterile ones being close to the ground can root immediately into it without having to pass through the precarious unattached period which is the lot of aërial buds, as already described, for undoubtedly there are risks of damage or complete destruction by drought or floods of rain (that may wash away or bury them), as well as the ravages of many herbivorous creatures which established plants, though quite as small, can bear with little loss. *G. S. Jenman.*

*(To be continued.)*

## HARDY ORNAMENTAL SHRUBS.

FUCHSIA RICCARTONI is a meet companion to Hydrangeas. I am not aware of any two shrubs that are more suitable for planting in close proximity. Mass planting is also most suitable for this Fuchsia, for when in large irregular clumps the flowers are shown to much better perfection than is the case with single specimens, be they ever so fine. Just now it is a grand sight to see the edges of park woods glistening with the red and purple flowers of this most profuse blooming plant, more especially if at irregular distances apart good-sized patches of the Hydrangea have been inserted. Although not hardy in Scotland generally, yet in England this pretty shrub is seldom killed outright, although frequently cut over by the ground during severe frost. This, however, injures it but little, as it throws up as strongly from the root the following spring, and blooms so profusely as to almost tempt one into the belief that such treatment is really necessary for its full development. Along the coast it is frequently met with over 10 feet in height (I have measured one specimen 16 feet), where, during the months of August and September, it is a floral treat of the most delicate appearance and the richest beauty.

THE BITTERSWEET, SOLANUM DULCAMARA, although seldom grown for decorative purposes, has, we think, a claim for admission into the wild garden, if only in its clusters of purple flowers with conspicuous yellow anthers — colours that are certainly unusual amongst the flowers of our gardens. To see this plant in perfection it should be allowed free scope amongst other rather dense growing shrubs where the long flexuous stems will receive that support which their rather weak nature demands, and where the terminal cymes of flowers, peeping just above their support, will, during the summer months, prove a source of attraction. The reddish berries also are very ornamental.

ESCALLONIAS.

Amongst these will be found several distinct and interesting plants, most of which are well suited for the climate of this country where choice of situation is to be taken into account at time of planting. When in its best condition few of these are more lovely than E. macrantha, a plant that richly deserves extended cultivation in our gardens. It is most frequently seen as a wall plant, but it certainly looks best as a border shrub where the situation is suitable, and a slight protection afforded from the prevailing winds of the district. Planted as a single specimen it frequently attains a height of 6 feet, when it becomes a branching erect shrub, with shining oblong or elliptical leaves, and large crimson-red flowers. It does specially well by the sea. The white flowered E. Philippiana, introduced a few years ago from South America, is perhaps the most ornamental of the genus, the slender growth, spreading habit, and dense sprays of pretty white blooms and buds rendering the

plant one of the most effective for outdoor embellishment.

THE SYRIAN HIBISCUS (H. SYRIACUS)

is another shrub of far too rare occurrence in our gardens, more particularly when we consider its beauty as an autumn flowering plant, and that it was introduced in Parkinson's time, or early in the sixteenth century. Of medium height, seldom exceeding 6—8 feet, perfectly hardy, and by no means particular as to choice of soil, so that it is not overwet this shrub is well adapted for planting as isolated specimens on the lawn, or intermixing with evergreens along the outskirts of plantations. The flowers are usually of a reddish-purple (this is, I believe, the typical colour), but the plant is so variable in this respect that there are many really distinct forms or varieties in cultivation, including white, yellow, rose, purple, violet, and striped. Then there are the double white and double purple kinds, as well as one with variegated foliage, which latter is a very distinct and ornamental shrubbery plant. This plant is also known under the name of Althæa frutex.

RHUS COTINUS.

Than this or the Venetian Sumach there are few more striking objects in the autumn, but more especially when seen in the evening under the rays of a setting sun, being green in the shade, but of an intense crimson in the sunlight. The light, feathery inflorescence imparts a very peculiar appearance to the shrub, the simple rounded leaves on long petioles still further adding to its beauty.

This is a somewhat neglected shrub in our grounds, for although introduced more than 200 years ago, one seldom sees it, although its value for autumn decoration places it in the first rank amongst deciduous flowering plants.

The Stag's-horn Sumach, R. typhina, from North America, is another worthy member of this family, with dense clusters of variously coloured flowers, and deeply serrated leaflets. R. glabra, although not so showy as the latter, is yet well worthy of introduction, for the ornamental foliage and bright red berries render it at various times both decided and conspicuous. There is a variety of the latter with beautifully cut Fern-like foliage—known, indeed, as the Fern-leaved Sumach (R. glabra laciniata) with a good compact habit, and perfectly hardy. All the Sumachs do well in ordinary soil, require but little attention, and are readily propagated from cuttings. *A. D. Webster.*

## DISEASE OF GENTIAN.

PUCCINIA GENTIANÆ, LINK.

A WEEK or two ago, examples of Gentiana acaulis, L., were forwarded by Dr. M. C. Cooke from Kew badly infested with a parasite new to Britain, named Puccinia Gentianæ, Link. As is common in such cases, the Uredo, or early condition of the Puccinia, was growing on the invaded plants in company with the mature or Puccinia state. The Uredo is the U. Gentianæ of Strauss. It is a remarkable fact that whilst on the Continent the Puccinia attacks Gentiana cruciata, G. asclepiadea, G. ciliata, G. Pneumonanthe, and G. utriculosa, no record is published of its attacks on G. acaulis, the plant upon which it has first shown itself in Britain. A large patch of Gentiana acaulis has been destroyed at Kew, and now that attention is directed to the fungus it is possible that accounts may be received of a similar destruction from other quarters.

Gardeners will be alive to the real danger of this new enemy when they are reminded that Puccinia Gentianæ is a close ally of P. malvacearum, the fungus of the Hollyhock disease.

The upper part of the accompanying illustration (fig. 82) shows, natural size, Gentiana acaulis—spotted with the Puccinia; the fungus grows on both sides of the leaves, but appears to prefer the upper surface. The spots or pustules are at first orange in colour, then black, a group of pustules enlarged to ten diameters is seen at B. When a few spores are taken from an orange spot and enlarged 400 diameters they are seen as at B, ochreous in colour, and furnished with from one to three lighter internal spots—these are the finely echinulate Uredo-spores.

When a few spores are taken from one of the black pustules, and enlarged to the same scale, they are seen as at C, bright dark brown in colour, and furnished with a joint, or septum, across the middle. These are the Puccinia spores: the orange coloured Uredo-spores germinate at once, as soon as they are produced; the Puccinia spores, on the contrary, generally rest, sometimes for a long period, before germinating: they are potentially resting-spores.

It often happens in plants invaded by Puccinia that a fungus named Æcidium grows on the same host plants; this is the case in the plant before us, as Dr. Winter says the Æcidium was found in 1880. The belief, however, is by no means accepted by all botanists, that Puccinia and Æcidium must be genetically connected.

No Æcidium has been seen on the Kew plants, but all the evidence tends to show that the plants were imported into the garden with the disease in them in a latent state. Mr. D. Dewar, of the herbaceous ground, Kew, says the plants were never really healthy in the garden during the two years they were there. They were planted in a large bed by themselves, and it was very difficult to make them grow at all. Some time after planting Mr. Dewar placed a healthy plant of Gentiana acaulis, received with others from Edinburgh, in the middle of the diseased clump, with the result that the Edinburgh example succumbed to the disease which it had contracted from the diseased specimens. Black and yellow flowers of sulphur were tried at Kew as a remedy without the slightest effect, and as a last resort all vestiges of the diseased plants were burnt.

The disease appears first in the basal leaves, as




FIG. 82.—PUCCINIA GENTIANÆ.

shown in the illustration; this may be because they are the first to appear above-ground. These first-produced leaves speedily change colour to yellow, and become dry, like tinder. The Kew plants made plenty of runners under-ground, but as soon as the young leaves appeared above-ground they were attacked and destroyed by this terrible scourge.

As with other Puccinia invaded plants, every scrap of diseased material should be destroyed with fire directly it is seen.

Since these notes were written the Editor of this paper has sent a large collection of diseased Gentians, received from Russia. These Russian examples are in a far worse plight than the English ones, as a profuse growth of the Puccinia is to be seen on all parts of the Russian plants, from the lowest leaves to the floral organs. There can be no doubt that the disease is spread whilst in a latent condition in imported plants, as well as by the seeds; these seeds are either tainted with the fungus in a diffused or attenuated state, or they carry Uredo or Puccinia spores either outside or inside their membranes. *Worthington G. Smith, Dunstable.*

TEA.—The quantity of Tea exported from China and Japan to Great Britain, from the commencement of the season to July 2, was 49,170,477 lb., as against 49,257,920 lb., exported in the corresponding period of last year. The exports to the United States and Canada during the same period were 6,790,603 lb., as against 7,654,678 lb.

# Orchid Notes and Gleanings.

CLEISOSTOMA GUIBERTI.

A GRAND Orchid, of which Mr. Linden received from Assam a solitary plant, which, unfortunately, is now lost. The habit is that of a Vanda; the leaves are strap-shaped, notched at the apex; the flowers are very numerous, disposed in branching panicles. Each flower is about 1½ inch across, with oblong-obovate segments of a creamy-white colour, thickly marked with irregular purplish spots. It is figured in *Lindenia*, tab. ix.

SELENIPEDIUM RETICULATUM.

A species discovered in Ecuador by Wallis, who sent home hundreds of specimens—all dead on arrival! The flowers are in racemes, each 7 inches across in the longest diameter, sepals white, with green netted venation; the posterior sepal lanceolate, the two lateral sepals deflexed and united into a solitary oblong obtuse segment, the two lateral petals spreading horizontally, linear-lanceolate, twisted, each about 3 inches long, lip leaf-shaped, greenish externally, white within, with a few purple spots. *Lindenia*, t. x.

AËRIDES MACULOSUM.

A magnificent species, with a densely crowded raceme of flowers, each 2 inches across, with obovate oblong segments, whitish, spotted and tipped with reddish spots, anterior lobe of the lip tongue-shaped, reddish-violet. *Lindenia*, t. xi.

CATTLEYA MAXIMA VAR. HRUBYANA.

A lovely Cattleya, with flowers 6 inches across, the sepals and petals pale lilac-rose, sepals oblanceolate, petals obovate oblong, lip wrapped round the column at the base, expanding in front into an oblong disc, undulate at the margin, and marked with purplish diffluent veins on a white ground, and with a central yellow stripe. *Lindenia*, t. xii.

ODONTOGLOSSUM WILCKEANUM PALLENS.

A very beautiful variety, with numerous flowers in a two-ranked raceme, each 4 inches across in the longest diameter; sepals and petals white, with large chocolate blotches; the petals lanceolate, rather broader than the sepals, and boldly toothed in the middle; lip rather shorter than the petals, oblong obtuse acuminate, with a fringe of spine-like processes near the base, and two yellow keels running towards the apex. *Orchid Album*, t. 201.

LÆLIA CRISPA, CATTLEYA GIGAS AND OTHERS.

Referring to the remarks on this Orchid at p. 334, it is certainly not difficult to manage. I have grown it for nearly twenty years, both the usual variety and L. crispa superba. It is grown along with L. purpurata, and annually produces strong flowering spathes. This is a very distinct and beautiful Cattleya, the flowers are not so large as those of L. purpurata, but the sepals and petals are pure white, as many as five and six flowers being produced on one spike: it flowers the end of July, or early in August. We had in flower with it this season the recently introduced Cattleya Gaskelliana, a species of great merit, flowering, as it does, after C. Mendelii and C. Mossiæ, and thus prolonging the Cattleya bloom a month or six weeks longer. It can be depended upon to flower as freely as C. Mossiæ or L. crispa, whereas the splendid C. gigas cannot. This I find very difficult to manage; it cannot be made to remain dormant in August or September after it has done flowering, and this restless habit prevents its flowering in most cases the following season. The autumn growth will not flower, and it weakens the plant so that it will not make a flowering growth the following season. C. imperialis and C. Sanderiana are too nearly allied to it in appearance and habit to be designated distinct species. As much may be said of the distinct and handsome C. aurea; it flowers at the same time as C. gigas, and has the same unfortunate habit of starting into growth as soon as the flowering period is over. *J. Douglas.*

RENANTHERA COCCINEA.

At Mr. E. Gotto's, The Lodge, Hampstead Heath, there is now in flower a plant of Renanthera coc-

cinea with a very fine spike bearing fifty-five flowers. It was imported about eighteen months ago, and has enjoyed full sun. I have had it in a vinery all the summer, having stood it on a shelf near the glass. *T. Banks.*

# The Propagator.

## THE PROPAGATION OF BEDDING PLANTS.

It is not a good plan to entirely depend upon the old lifted plants for a supply of bedding plants; it is much better to propagate a large batch of cuttings in the autumn months. In the first place, one of the old lifted plants would take up as much room as a dozen cuttings; and in the second, the former would not stand the winter so well as the latter. Besides this, the cuttings grow more freely in the spring, and develope into more compact and better-shaped plants, and they are not so liable to canker or rot off as the old plants are.

### Alternantheras.

In taking the cuttings, those pieces should be selected that grow up from the base of the plant. Each piece should be about 2 inches long, and before dibbling them into a cutting-pot the leaves should be taken off for half an inch up the stem; all flower-tufts should be removed, and the base of the stem should be levelled. From twenty to twenty-six pieces can be dibbled into a 48-pot. The holes made by dibbling should be filled up with up with dry sand. After well watering them with a fine-rose pot they should be placed in a cold pit or frame as near the glass as possible. Here they must be shaded from the sun. In the morning they must be sprinkled with a fine-rose pot, and the frame must be ventilated for an hour; in the afternoon they must again be sprinkled, and then shut up close. A single mat should be thrown across the frame every night.

As soon as the cuttings have rooted they should be moved into a warm house, and placed on a front platform or shelf near the glass. During the winter months they should be carefully watered, and the dead leaves and flower tufts should always be picked off. They will remain on the platform until they are wanted for spring propagation.

The best soil for the cuttings is that made up of equal quantities of loam, leaf-mould, peat, and river sand, and a small quantity of broken potsherds. The soil should be well mixed together, sifted, and rubbed through a quarter-inch sieve. Some large 48-pots should be used for the cuttings, and after the pots have been well drained the soil should be put in and pressed in firmly, leaving room enough for a quarter inch layer of sand upon the top.

### Verbenas.

The present is a good time for putting in cuttings of these plants, because, during the dry summer months, the plants are infested with thrips and red-spider, but now that the nights are colder and the dews heavier the plants are much cleaner.

For the cuttings those pieces shooting up from the base of the plant should be taken. Each cutting should have four or more leaves attached to it, and it should be made at a leaf-joint if possible. Dibble in a dozen of the cuttings round the border of the pot, and six in the middle, and fill up the holes thus made with dry sand. They should be watered and placed in a shallow cold frame. Here they should be shaded from the sun, and sprinkled with a rose-pot every morning and afternoon. The frame should be ventilated for an hour in the morning. When the cuttings have rooted they can be placed either in a pit where the frost can be kept out, or on the front platform of a cold house, where they should be kept until they are required for spring propagation. They must be moderately watered. If mildew attacks the plants they should immediately be sprinkled with sulphur.

The soil for the cuttings should be made up as follows:—Half loam, quarter leaf-mould, and quarter sand. It should be well mixed together, sifted and rubbed through a quarter-inch sieve. The cutting-pots can be prepared in the same way as those for the Alternantheras. *T. O'B.*

*(To be continued.)*

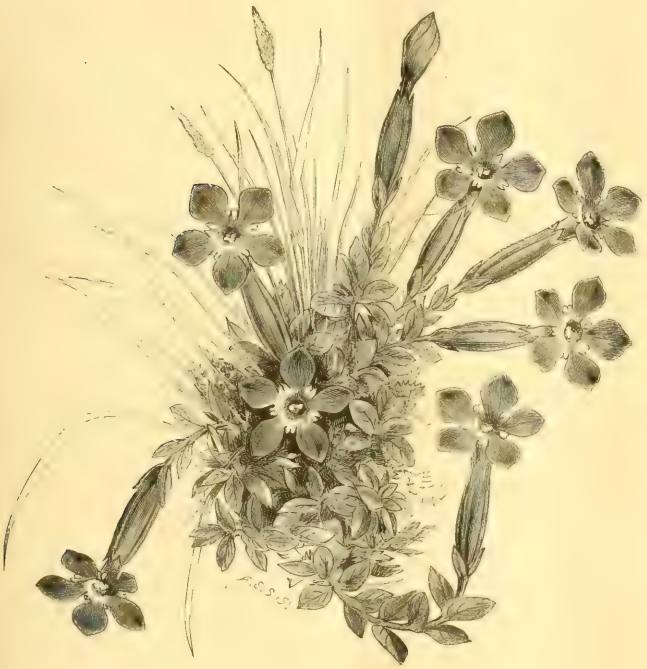


Fig. 83.—Gentiana verna.

## GENTIANA VERNA.

Few plants are more familiar to, or more highly appreciated by alpine tourists, than this lowly Gentian. In the whole gamut of flower-colour there is nothing purer than the deep sky-blue of the corolla. It is common on most parts of the Swiss Alps above the forest line, and is, or was, found in Teesdale, Durham. In its native habitats it grows usually in deep rich mould with abundance of moisture and fully exposed to the sun. For the very characteristic figure (fig. 83) we are indebted to Mr. Scott Wilson, who has been passing some months in Switzerland, studying the flora of the country and the conditions under which alpine plants grow naturally. In this country its cultivation is easy, but it does not succeed well unless grown in masses, and lime appears to suit it better than granite. When found growing naturally in other than limestone soils, it is less robust.

There is a white-flowered variety of G. verna which usually remains constant and flowers freely under cultivation, but it sometimes, on being transplanted to other localities, turns to blue. This white variety sometimes occurs in the Jura mixed with the blue, forming a pretty combination of colour. After a particularly dry summer G. verna frequently flowers a second time.

## AN OCTOGENARIAN HORTICULTURIST.

On Monday, the 7th inst., the *employés* of Messrs. William Barron & Son, of the Elvaston Nurseries, Borrowash, near Derby, to the number of sixty-five, were entertained at dinner by William Barron, the senior partner of the firm, to celebrate his eightieth birthday. The *employés* took advantage of the occasion to show the high esteem in which they hold their host by presenting the octogenarian with an arm-chair, accompanied by an appropriate address. During the evening Mr. Barron gave his guests a very interesting sketch of his past career.

Mr. Barron has been a most enthusiastic horticulturist all his life, having commenced his career of gardening as an apprentice at Blackadder, the seat of Thomas Boswell, Esq., where he made rapid progress in his profession. Having completed his term of apprenticeship he was appointed foreman in the houses under Mr. MacNab, at the Botanic Gardens, Edinburgh. From thence he went to Sion House. Having remained at Sion House for some considerable time he was selected to lay out the gardens at Elvaston Castle, the grounds of which are famed for the artistic manner in which they have been designed.

Ultimately he was permanently appointed head gardener and steward, in which position he remained for more than thirty years, during which time he enjoyed the entire confidence and respect of his noble employer, and was held in high esteem by all those with whom he came in contact.

During the time he had charge of the Elvaston gardens he brought together one of the then best collections of Coniferæ in this country, some of which have attained the proportions of large timber trees. Mr. Barron has made himself famous both as a landscape gardener and for his successful mode of removing large trees, some of them being of great dimensions, amongst which may be mentioned a few of the largest.

The first large trees that he attempted to remove were some Cedars of Lebanon, at Elvaston; the largest of these measures at the present time 80 feet in height, 9 feet 9 inches in circumference of stem, with a spread of branches 63 feet in diameter; this tree is in the most robust health. He also removed a Cedar of Lebanon from Hornsey to Acton, 60 feet high; this required thirteen horses to convey it to its destination.

One of the largest trees removed was a Cedar of Lebanon, for Sir John Hartop, Bart.; this tree measured 50 feet high, 50 feet diameter of branches, and was moved with a ball 18 feet long by 16 feet in width by 3 feet 7 inches deep, the whole weight being computed at 50 tons.

The greatest feat of tree lifting was, however, accomplished at Dover, when an old Yew, considered to be over 1000 years old, was moved with the greatest success, and is now to be seen in a thriving condition.

Mr. Barron is still in the enjoyment of excellent health, thus showing the beneficial results of temperate habits and constant activity.

## TREES OF THE UNITED STATES.

THERE has recently been placed on exhibition, at the New York Museum of Natural History, an almost complete representation of the trees of the United States,—between 400 and 500 trunk sections of the different species. These specimens are about 5 feet 8 inches long each, cut in such manner as to display their barks and the transverse and longitudinal sections of the wood. This is done by cutting away one side of each specimen at the top to the depth of one-half the diameter of the trunk and for one-third of its length. One half of each exposed portion is polished to illustrate the effect of this treatment of the wood, the remainder being left in the natural condition, with the top of the upper divided part finished by beveling. In the case of trees of commercial importance this form of representation is supplemented by carefully selected planks, or by "burls," showing better than the logs the true industrial value of the wood. Among specimens of this kind is a plank of Redwood (Sequoia sempervirens), measuring 8½ feet in width. A species remarkable for slow growth, and which is only 24 inches in diameter, shows an age of 410 years, being the oldest tree in the collection. This is Picea Engelmanni, named for its discoverer, Dr. Engelmann, and known also as Engelmann's Spruce, and as Pinus commutata. Another example of slow growth is seen in Pinus edulis, or edible Pine, from Arizona, called also Nut Pine. The seed of this Pine, which resembles a good-sized Bean, is used by the Indians for food. A tree of this species, which is 300 years old, measures only 15 inches in diameter. Another specimen, which is 341 years old, shows a diameter of 37 inches. It is the Western Shell-bark Hickory (Carya sulcata), from Allenton, Mo. The same locality is represented by a specimen of Tilia americana, or Basswood, which is 40 inches in diameter, and 150 years old.

This valuable collection, numerically exceeding that made in connection with the census reports, includes examples of many curious and interesting species, of which probably the complete natural series could never have been viewed in their native soil by any single traveller, however diligent.

Among the extraordinary specimens is a representative of Texas. This is the Cereus giganteus, which resembles a fluted column. It is a plant which can be readily taken all to pieces. Its component parts are in the form of vertical sections of twisting curvatures in the line of their circumference, whereby one portion is fitted exactly to another. They can be separated without the slightest difficulty, in the absence of any heart at the centre for their attachment. The Washington Palm (Washingtonia filifera), from Southern California, is also curious. The specimen includes the top of the tree, which is severed from the body, and bears its dried and yellow wide-spreading leaves. Its peculiarity is in the ring-formations of the trunk, which are almost wholly detached from each other, standing one within another like a succession of forms of bark. They are easily detached from each other.

The Cocoa-nut tree from Key West, and the finely odorous Nutmeg tree from California, are among other specimens of importance. The Catalpa is represented as a species most remarkable for its durability. Some of this wood, known to have been buried in the earth for seventy-five years, has been brought out in perfectly sound condition. Specimens of beautiful woods are seen in the Arbutus, Sweet Bay (Persea carolinensis), Alaska Cedar (Chamæcyparis nutkaensis), and the beautifully figured Maple "burl" from Missouri.

With only seven unimportant exceptions, the specific gravity, ash, and fuel value of the wood of every indigenous arborescent species of the United States have been scientifically determined. The specific gravity was obtained by weighing carefully measured specimens 100 millimetres long and about 35 millimetres square, previously subjected to a temperature of 100° until their weight became constant. The ash is given in percentages of dry wood, which were determined by burning small blocks of the wood in a muffle furnace at a low temperature. The relative approximate full value of any wood is obtained by deducting its percentage of ash from its specific gravity. The correctness of the result thus found is based upon the hypothesis, first proposed by Count Rumford, that the value of equal weight of all woods for fuel is the same, which is considered to be approximately true. *Scientific American.*

## HOME CORRESPONDENCE.

**The Fruit Crops of the Present Season.**—The fruit crops of the present season, in this neighbourhood, have been disappointing. In general a fair crop of fruit set, but the spring frosts killed much of it, and the continuance of more or less up to the present time of cold weather, caused much of the young fruit to shrivel and drop off. Most kinds of orchard fruit are below the average in size and quality. The hot fine summer of last year (1884) raised the expectation of good crops of superior quality this season; the young wood and the buds on fruit trees got well matured, the winter was a mild one, and the spring (owing to the dull cloudy weather) was a late one. The fruit trees showed an abundance of blossom and promised a heavy crop of fruit. Peaches, Nectarines, and Apricots coming into bloom whilst the weather was fine, and having the protection of walls, set good and abundant crops of fruit. In general these crops are fair, except that the fruits are not particularly large. Cherries, Pears, and Plums showed a great abundance of blossom; Cherries set pretty well and are good crops on walls; Plums and Pears promised good crops of fruit, but they got sadly injured by the frost and cold weather that prevailed the time they were in blossom, a great deal of the young fruit dropped off. Both Apples and Pears are below the average size, and the crops are very irregular, some trees heavily laden, whilst other trees have little or no fruit. Raspberries have in general been a heavy crop. Gooseberries have varied in crop very much. In one garden I called at, famous for its fruit crops, I found the crop a complete failure; in another garden, only a short distance from the other, I saw one of the finest crops of Gooseberries I ever beheld. There was a fair sized quarter of fine young healthy trees of large kinds, and a finer crop I never beheld. Currants were in general below an average crop. Strawberries were a good crop and very fine; and owing to the nice showers of rain we had they continued some time in bearing. *M. Saul, Holgate, York.*

**Hybrid Abutilons.**—How very useful these showy, free-growing, profuse-flowering, greenhouse shrubs are! Mr. Munro, the gardener at Clevelands, Lyme Regis, cultivates them on the back wall of a vinery with excellent effect, and it is a very agreeable change, for back walls of "hip-roofed" and "lean-to" vineries are often naked and bare. The Abutilons are planted out in a compost of loam, peat, leaf-mould, and coarse sand, the border being thoroughly drained. During the blooming period the plants receive a copious supply of water, and liquid manure at times encourages them amazingly. Boule de Neige, with pure white flowers, is perhaps the most popular variety, but I believe that purple Emperor, crimson Banner, pink Admiration, rosy Delicatum, yellow Canary-bird, and many others, will become favourites as well when better known. Mr. Parkhouse, the gardener at Watermouth Castle, North Devon, also grows Abutilons in this way, and in his case, as also with Mr. Munro, the plants are neatly fastened and trained to the wall, producing a pretty green background, besides which they are so very handy where cut flowers are much in request, being prodigious bloomers. *W. Napper.*

**Hoya Griffithii Fertilisation.**—This plant is fertilised by large flies precisely as in Hoya globulosa, as described and illustrated by me in *Gardeners' Chronicle* for April 29, 1882, p. 570. When I received the blooms of Hoya Griffithii for engraving, a bluebottle had been caught and was held fast to one of the blossoms by a pair of pollen masses and their glutinous disc. In the box I found a second bluebottle dead from exhaustion, with two of its legs locked together with a second pair of pollen masses. When flies alight on the flowers their feet touch the glutinous discs, and in the effort of the fly to get its feet free, the movement of the legs causes the pollen masses to fly out and embrace the foot; the fly on visiting a second flower draws the pollen masses over the stigmas. I at first engraved the bluebottle hanging from a flower, but as I considered it defaced the picture, I afterwards removed it. *W. G. S.*

**Heavy Yield from Two Pounds of Potatos.**—I herewith send you the weight produced by 2 lb. of Potatos, 1 lb. of each, from the spears—*i.e.*, Vanguard, 165 lb.; Sutton's New Regent, 140 lb.—and shall be pleased to know if as much or more has been got in any other way than that. *Geo. Lambert.*

**Hooper's Illustrated Bulb Show Tickets.**—These are a new introduction likely to be of service to country seedsmen. They are in the form of stiff oblong cards, with the upper portion rounded off like an arch; and on a suitable coloured ground there is painted in colours, near to Nature both in shape and size, clusters of different flowers—one on each, such as Anemones, Gladiolus, Hyacinths, Iris, Ranunculus, &c. These picture tickets are intended for marking the prices of bulbs in seedsmen's windows; and seeing that they illustrate in colours the flower of the bulb offered, they are likely to prove very useful, and to a certain extent instructive. One thing is certain, they will tend to relieve something of the dulness that attaches to a seed shop when the bulbs are arranged for sale. Being both durable and cheap, these coloured cards are likely to be much in demand. *A. D.*

**A Mushroom Field.**—There is now to be witnessed a most remarkable and extraordinary crop of the common field Mushroom, Agaricus campestris, growing in some pasture fields in the occupation of Messrs. Duck & Sons, Moorland Farm, Petworth, Sussex. From particulars taken and observations made it appears that about four years ago the land in question was arable, its soil being for the most part of a fine yellow friable loam. A large herd of milch cows and farm horses having been depastured on it, together with its low-lying situation and other natural circumstances combined, having, as it were, produced this development. The area of land literally covered with Mushrooms of the best quality consists of about 80 acres; a considerable number of persons being constantly employed gathering, preparing, and packing them for the London and other markets. Messrs. Duck & Sons must be commended for the manner in which they carry on the dispatch of this useful esculent to the various markets. *W. Short, Midhurst.*

**Picotee Favourite (Liddington).**—This beautiful light rose-edged Picotee came well to the fore during the summer, and it has taken a high rank among the varieties grouped in this division. It is not a new flower, as it was raised some years since by old Mr. Liddington, now living with his son at the Eagle Hotel at Thame. But it appears to have remained (comparatively at least) unknown until Mr. Thomas Anstiss, of Brill, sent it to Mr. Dodwell under the name of Mr. Payne, a well-known light rose edge. Mr. Dodwell soon discovered its difference in the character of the grass, and thus was able to make it known in order that it might be grown. Mr. T. Anstiss freely presented it gratis to amateur cultivators of the Carnation and Picotee, and next year it will, no doubt, be generally cultivated for exhibition, as it is a good grower, the ground pure, the petals stout and of good form, and the edge of colour all that can well be desired. *R. D.*

**Satyrium carneum** (see p. 331).—I saw this rare species in flower the other day in Major Hall's garden at Narrowwater, near Newry, bearing its fleshy hood-like blossoms on a stout spike a foot or so in height. Can Mr. Brown or our friends at the Cape tell us aught of Disa macrantha, of which fine rosy-flowered species there is a drawing at Kew, copied from an original by Sanderson? Is it a rosy-white form of D. grandiflora, or is it distinct, as well as beautiful? *F. W. B.*

**Japanese Peppermint.**—Mr. Christy has lately sent me a specimen of his Japanese Peppermint plant, Mentha arvensis var. piperascens, a green-stemmed form, in flower. It is a handsome plant, as large as the true Peppermint. With it Mr. Christy also sent some other specimens of Peppermint, and I was

interested in observing that one specimen which probably grew near a garden Mint (M. viridis) had approached to it in habit, the leaves being nearly sessile, and the spike tapering. Similarly, there is at the Botanical Gardens, Regent's Park, a Mint having the foliage of M. viridis, but the flowers are in whorls in the axils of the leaves. These plants show how important it is to exclude wild Mints from fields where Peppermint is cultivated. *E. M. Holmes.* [Mints are usually propagated by dividing the root, the possible crossing of the seed is therefore of the less consequence. ED.]

**Accidental Effects in Planting.**—Some of the boldest and handsomest tree groups have been the result of fortuitous planting. The notification of two such groups may be worth the telling. No. 1 keeps watch over a pond on the outskirts of a park. They had been dotting in Conifers in the policies; a few Pines were not required. A man was told off to put them on the verge of the pond to exclude still more its feathered denizens from the vulgar or covetous gaze of the wayfarers. By some inspiration, the man put together in a place apart, Pinus Lambertiana, pyrenaica, ponderosa, and Cembra. All are healthy and emulous to show, each its best guise. Lambertiana, nigrescent, taller and more aspiring than the others; pyrenaica, bright green, the branches all clustering together; ponderosa, with long and straggling arms, the parent stem always visible; Cembra, shaped like a Cedar of Lebanon cone, and quite spruce by the side of its carelessly attired neighbour. No. 2 takes the form of a triangle of foliage. The vertex is Cryptomeria Lobbi. When planted, no idea was held of the distinct habit of this variety of C. japonica. The laterals are very small when compared with the height, and the tree thus differs considerably from japonica of the spreading habit. This makes it admirably adapted for the place it fills, or for planting where the space is cramped. Modern prophecies are more often wrong than right. Notwithstanding, it is tolerably safe to say, that Abies Albertiana and A. grandis will eventually turn out to be very useful forest trees. Mons. A. Dupins, in the *Cultivator's Library*, writes of the latter, "Il croît dans les lieux bas et humides, et jamais sur les montagnes." Whatever may be the case in British Columbia, it will succeed in dry situations in England. In high latitudes I have no experience of this giant Fir. *C. A. M. C.*

**A Large Horse-Chestnut Tree.**—While on a visit to Abingdon, near Cambridge, I was much struck with a very fine specimen of the Horse-Chestnut (Æsculus hippocastanum) in the pleasure grounds at Abingdon Lodge, the residence of E. J. Mortlock, Esq. It has the appearance of having, when young, been cut down within 8 feet of the ground, from thence spring up fifteen branches. Between the branches at the base one can walk with perfect ease. Mr. Mortlock has had fastened at the point whence the branches spring zinc plates, so as to throw off the rain and prevent any lodging there and as hastening decay. The trunk is 19 feet in girth 3 feet from the ground, and 23 feet girth 5 feet from the ground. The tree in height is 75 feet, and in diameter of lower branches 104 feet. The longest and lowest branch measures from the trunk 65 feet in length: the tree appears to be in perfect health. *W. Dance, The Gardens, Gosfield Hall, Halstead, Essex.*

**Pansies.**—Notwithstanding the drought of the summer, old plants of the finer show varieties have in many instances stood better than could have been expected; and, indeed, some fine clumps did not cease to flower. They were strong plants, put out a year ago in beds with plenty of light rich sandy soil about the roots, in which they could work deeply. Perhaps growers of Pansies do not always realise the depth to which the fine spreading, thread-like roots of the Pansy will travel in search of nutriment, and it is of great benefit to the plants, when put out in the ground, to be in soil incorporated with which there is leaf-mould, sand, and the siftings of the potting-bench, to the depth of at least 15 inches. The roots get down into this, and they are to a great extent away out of the reach of drying influences, especially if a top-dressing of soil be added two or three times during the summer. I this season kept some large plants in good condition throughout the summer by giving them a good soaking with water, then a top-dressing of soil to the depth of an inch was added, and over this some short grass was placed. The plants have never been without flower. Since the welcome rains fell a new and vigorous growth has been put forth, and up from the roots are sprining young shoots in plenty. These make excellent stock. A bed should be prepared by digging the soil deeply, working in plenty of leaf soil—fresh leaves will do—a little dung, and abundance of refuse soil from the potting-bench. Let the leaves be deep down, and the finer soil above them. In this the plants will be placed. Two or three days should be allowed for the soil to settle, then the old plants lifted, carefully divided—all the rooted pieces being separated from those not so: the former can be planted out in lines 1 foot apart each way, the soil pressed firmly about them. If the weather is drying, an occasional sprinkling will be necessary. The plants soon make growth, and establish themselves, and in the spring charming beds are thus formed. The pieces of growths not rooted can be put round the sides of pots, they make capital cuttings: and should be placed in a cold frame, shaded if necessary from the sun. These give useful plants with which to make succession beds in spring. The finest self yellow Pansy is George Rudd, and to this may be added Gomar. The best white selfs are Fanny Anderson and Mrs. Goodall. The best dark selfs: Beacon, Garry, Leith Walk Beauty, and Sir Peter Coats. The best blue selfs: Blue Beard, Blue Stone, and W. J. Rawlings. The following are good yellow grounds: Alexander McLennan, Corsair, Inspector, James Orr, Master Ord, and Royalty. White grounds: Isa Craig, Miss Baird, Mrs. R. B. Matthews, Pladda, Sunny Park Beauty, and Village Maid. *R. D.*

**The Scotch Boor Tree.**—In reply to the editorial query (see p. 305), the Scotch Boor tree is Sambucus nigra. You will see in Loudon's *Encyclopædia*, p. 513, that the synonyms are "Bourtry," "Bour tree," "Arn tree." How the common or black-fruited Elder should have been called Bour tree, or Boor tree, is unknown to me; but the Scotch name is immortalised by our great national poets—Burns and Tannahill. The latter makes the following use of it in that beautiful song, "Oh, are ye sleepin', Maggie?"—

> "Fearfu' soughs the Boor tree bank,
> The rifted wood roars wild and drearie;
> Loud the iron yett does clank,
> And cry o' howletts makes me eerie."

*J. A.*

**Proteaceous Plants at Kew.**—If the venerable ex-Curator of the Royal Gardens, Kew, could but see the few collections of Australian plants in cultivation in English gardens at the present time and compare them with what existed in 1862, he would be astonished at the fewness of the species in favour now. Australian plants, if we except the few soft-wooded things and such popular genera as Epactises, Blandfordias, and Acacias, are at a discount in the horticulture of the present period, and no doubt this will in some measure account for the decrease generally in the number of these plants at Kew, for it is easy to believe that the Kew authorities are to some extent influenced by the interests and tastes of the gardeners of to-day, and, therefore, where space is limited plants of little interest are compelled to give place to those that are of more. With respect to the Proteads, of which Kew once possessed a very fine collection of large plants, but which, owing, as the ex-Curator states, to a change of quarters, rapidly decreased, I think that some of them at least are deserving of a place among greenhouse plants even now, indeed the Grevilleas and one or two Lomatias are here and there in favour. Still there are some beautiful plants among the Banksias, Dryandras, and Hakeas which were once well known in the gardens of this country, but are now met with only in botanical collections, chiefly at Kew and Glasnevin. I believe that in the former establishment efforts are being made to increase the collection of Australian plants and hard-wooded subjects generally. Some genera are, of course, largely represented there now, as, for instance, the Acacias, of which there are between ninety and a hundred species and varieties; Eucalyptus, sixty species; Melaleuca, twenty-eight species; and Boronia, Callistemon, Eriostemon, also well represented. The following list of Proteads now in cultivation at Kew will show that whilst the large old specimens named by the ex-Curator have, some of them, disappeared, the order is still pretty strong in number. Comparing the genera with those he enumerates it will be seen that there are now nineteen distinct genera represented out of a total of forty-nine, whilst in 1862 there were fifteen genera, Anadenia and Hemiklidia being now reduced, the former to Grevillea, the latter to Banksia. Altogether there are now living at Kew eighty-three species, most of them large healthy plants, so that taking into consideration what is said above with respect to these plants being now-a-days very little cared for generally, the Proteads cannot be said to be neglected at Kew. *Kewensis.*

**Arum crinitum.**—In what way is Arum crinitum fertilised? I have several plants in my garden, but it has quite puzzled me to find out how the pollen can get in the stigma, unless the insects which are enticed and entrapped lay eggs before dying, and the progeny in creeping out bring up the pollen and place it on the stigma. I have made some curious observations about the plant, but the fertilisation has quite baffled me, and I can find no allusion to it in any of my books. *A. D. W.*

**Sulphide of Potassium.**—Your correspondent, Mr. Badger, calls attention (p. 339) to the use of sulphide of potassium against mildew, red-spider, and aphides. Gishurst Compound among other ingredients contains sulphide of sodium; a soluble sulphide has therefore been a long time in use. *The Inventor of Gishurst.*

**Telegraph Cucumbers.**—In looking through Mr. Cooling's nurseries, Bath, the other day, I saw a splendid house of Telegraph Cucumbers (Mr. Cooling's variety) hanging for seed. In the house—60 feet by 12 feet—hung 2000 beautiful fruit, a fine example of a perfect crop from the first growth up to the last, and quite filling the house. Mr. Cooling told me he had cut from the plants about 300 fruits for eating. The fruit measured generally from 18 inches to 2 feet in length, and was very evenly distributed through the house. *F. Bush, The Royal Nurseries, Ascot.*

**Belladonna Lilies.**—I have heard it said that Belladonna Lilies do not flower for some considerable time after replanting. I removed two large clumps last year immediately after flowering that had not been disturbed perhaps for fifty years. There were nearly 200 bulbs in each clump. These I transferred to a narrow border beneath a south wall, introducing a quantity of peat, leaf-mould, and well rotted cow manure. A double row was planted about 6 inches apart, making use of 300 of the best bulbs. At the present time there are 175 spikes of bloom, some of them with thirteen flowers on a spike. Immediately after flowering is evidently the season to shift or repot Lilies of any kind, whether it is those deciduous after flowering or those that flower with their foliage, as the Lilium lancifolium and varieties. *D. C. P.*

**Luculias.**—These beautiful greenhouse evergreen flowering shrubs are sadly neglected in gardens at present, for rarely do I meet with any specimens. I am of course only able to record my experience of the gardens of the West of England, and the few instances where I have found them cultivated can be readily enumerated from memory. In the great Camellia-house, at the Exeter nursery, Messrs. Lucombe, Pince & Co. have the largest examples I am acquainted with of both species—gratissima and Pinceana, and these are neatly trained to the walls. In December they are literally covered with their fragrant, rosy, and white flowers, which are arranged in large terminal cymes, and form a sight worth a long journey to witness. They are planted out in a compost of fibrous loam, peat, and silver-sand, and they certainly enjoy this mixture, judging from their ample foliage and stout shoots. I am told that copious supplies of water are given during the summer; but after blooming the plants are pruned and allowed a season of rest until about Easter time. In the conservatory at Whiteway, Devon, there is a fine flourishing plant of L. Pinceana, and it is doing first-rate under Mr. Nauscawen's care; and F. B. Short, Esq., Bickham, Devon, has an aged specimen of L. gratissima on the back wall of his conservatory, and there is one at Membland Hall, Ivybridge, on the back wall of a greenhouse, covering a space of some 18 feet by 14 feet. It was quite a small plant some five or six years ago, when Mr. Baker, the gardener, planted it there. There was

also a very old veteran growing in bush form in the gardens of that enthusiastic blind florist, Mr. Joel Roberts, Pennycomequick, Plymouth, the last time I passed that way. *W. Napper.*

**Vitality of Seeds.**—The table of the vitality of seeds in your last issue has called my attention to a case of the long-retained vitality of Melon seeds. I have some seeds of Read's Hybrid which was saved in the year 1873, consequently it is twelve years old. I have grown some of it each succeeding year, but what I consider most remarkable is that the older the seed the larger the fruit produced; some of them are from 1 lb. to 2 lb. (and some even more) heavier than the fruit were in the first years, although they are grown in the same houses, with the same treatment as those in the first years. I have several more seeds, and intend to sow each year, to see how long it will vegetate. It is not much longer in vegetating than seed one or two years old. The original seed is much smaller than those saved at the present time, indeed it is the smallest of any Melon seed that I have seen. *D. Walker, Dunorlan, Tunbridge Wells.*

# Reports of Societies.

## THE ROYAL CALEDONIAN HORTICULTURAL SHOW, EDINBURGH:

### September 9 and 10.

INSTITUTED in 1809, and incorporated by Royal Charter in 1824, the Royal Caledonian Horticultural Society was never in a more flourishing condition than it is at present. During its long history it has done much to foster in Edinburgh a love of flowers, and its efforts have been recognised in the highest quarters. The taste for flowers on the part of the municipal rulers of the capital of Scotland and of its citizens is shown in the great attention that is now paid to the floral adornment of the public gardens, which this year have been models of what such places should be, and by the generous patronage which is extended not only to the Royal Caledonian, but to another useful institution, in which many of the officials of the Caledonian take a lively interest—the working man's flower show. The autumn show of the Royal Caledonian, which took place on Wednesday and Thursday, September 9 and 10, is the third exhibition this year held under the same auspices. The spring show extended over two days in April, the summer show over two days in July, and before 1885 passes away there is to be inaugurated a winter show which is down on the programme for November 25 and 26. Better guarantee than that could not be furnished that the management of the Society is in energetic hands. This year's autumn show was one of the most successful of the kind which the Society has ever held. The entries were never more numerous, the quality of the exhibits, which were for the most part typical of the waning season of the year, was excellent, the general arrangement of flowers and fruit in the spacious Market Hall tasteful in the extreme, the weather all that could be desired, and the attendance of visitors most satisfactory. The Market Hall, adorned with a wealth of greenery, bright with the gay colours of our autumn flowers, and perfumed with the scent of luscious fruit, was never more attractive. There were in all about 1500 entries, and of Grapes alone there was a splendid display, over 400 bunches being staged.

#### FRUIT COLLECTIONS.

The position of honour at our autumn show is always given in the catalogue to the fruit, and this year especially it was well entitled to such consideration. Fruits grown indoors and out-of-doors were splendidly represented.

For the best collection of twelve sorts, the Culzean Castle exhibits carried off the blue ribbon. Two bunches of Muscats were the great feature of this collection, the berries being large in size, perfectly ripe, and beautifully finished. The two bunches of Alnwick Seedling which it contained were also excellent, and the same may be said of the plate of Nectarines, Figs, and Plums. The 2d prize lot from Archerfield included good bunches of Muscat of Alexandria, Gros Colmar, and Black Barbarossa, and capital plates of Figs and Apricots, while in the 3d prize collection there were very nice Peaches, Nectarines, Melons, and Pine-apples, but inferior Grapes.

The Broxmouth Castle 1st prize lot of eight sorts included highly finished Muscats, and excellent Figs, Apricots and Peaches.

#### GRAPES.

Taken all over the Grapes were a splendid show, and formed the chief feature in the exhibition. The black varieties were rather better then the white. The two leading prizes went to Mr. Hammond, gr. to Sir Wilfred Lawson, Brayton Castle—a gentleman who evidently can appreciate good Grapes, though he has a personal and parliamentary antipathy to good wine. His collection of twelve bunches was, without exception, a splendid and beautifully finished lot—the Gros Maroc, Muscat of Alexandria, and Black Alicante, being particularly fine. Mr. McKelvie's 2d prize lot were rather larger in the berry, but not quite so well finished, his Muscats, however, were shown in beautiful condition; the greatest defect of the 3d prize collection was their unripeness.

The 1st prize for eight bunches also went to Brayton Castle, this collection being strong in Golden Queen, whilst in the 2d prize lot from Alder Grange, Durham, the Black Hamburghs were conspicuous.

J. Boyd, gr. to Mr. Forbes, of Callander, had grand bunches of Black Hamburgh, Muscat Hamburgh, Black Alicante, and Lady Downe's, in the competition for four bunches, distinct; and Mr. Hammond's 2d prize lot were also good, though not quite so well finished.

There was a large competition for the 1st prize for two bunches of Muscat of Alexandria, and the quality of the exhibits was high. The Galloway House Grapes, which got 1st prize, were beautifully finished, large in berry, and perfectly ripe; the 2d prize two bunches were rather deficient in the colour.

The competition was not nearly so strong in Black Hamburghs, but the quality was well kept up, Mr. Boyd, Callander House, being again successful. Neither in quantity nor in quality were the single bunches of Muscat of Alexandria up to the average, and even the 1st prize Grapes were shown in somewhat rough condition.

Out of a large competition Mr. James King secured the 1st ticket for bloom with a bunch of Black Alicante; the prize for flavour went to Hutton Hall, for a bunch of Madresfield Court (black), and to J. W. McHattie, Newbattle, for a bunch of the Duchess of Buccleuch (white).

On exhibition were two baskets of large-sized white Grapes (Duke of Buccleuch), from the Clovenford Vineries, which received a special award for general excellence, and for the manner in which they were packed for market.

#### MISCELLANEOUS.

Among other fruits grown indoors may be specially mentioned the Pine-apples, Melons (which were much above the average), the Peaches, Nectarines, and Apricots. Of all of these the 1st prize lots especially were of high merit. The hardy fruits grown out-of-doors were also of much excellence. It may be questioned indeed whether the Society had ever a better display.

For the best collection of ten sorts Mr. Fairgrieve, Dunkeld, as usual, was in the van. His Peaches, Apricots, Plums, Pears, and Cherries, all beautifully coloured and perfectly ripe, could not have been well surpassed. The Hutton Hall collection included some wonderfully fine Plums and Apricots.

There was a great display of Apples and Pears, mostly of kitchen varieties, though those suitable for table were also fairly represented. The Apples, however, the season being yet early in Scotland, were for the most part shown in an unripe condition. Of Pears the collection from Lambton Castle was of very superior quality; it included such varieties as Gregoire Bordillon and Bellissime d'Hiver.

Some Castle Kennedy Figs, grown on a wall at Broxmouth Castle, were remarkable for their size, quality, and ripeness.

#### VEGETABLES.

It has often been hinted by thrifty housewives when they visited the show that the "Caledonian" rather neglected to encourage the cultivation of vegetables. China Asters and Dahlias, and even Grapes are all very well in their way, but where are the Leeks, and Cabbages, and Potatos upon which the "lords of creation" must be fed? Critics of this sort, who, like Mr. Gilbert's hero in *Patience*, confess to

"An attachment *à la* Pluto to a bashful young Potato,
Or a not too French French Bean,"

had they been in the Market Hall last Wednesday or Thursday must have been greatly mollified and pleased. The vegetables made a very fair display indeed—Cauliflowers, Leeks, Peas, French Beans, Tomatos, and Potatos, being shown to perfection.

A splendid collection of twelve sorts was staged by Mr. Low, Stirling, and in the market gardeners' class the exhibits of Mr. John Murie, Craigmiller, were also most creditable.

#### THE PLANTS IN POTS,

which go to form the backbone of all exhibitions, were as usual of high quality. In the autumn show, however, they are never so prominent a feature as in the spring time. The competition table prize went to Mr. R. Grossart, Oswald Road; and Mr. R. Paterson, Millbank, as usual, managed to secure a fair proportion of the honours for greenhouse plants. Of these, Cape Heaths and Statices were conspicuous on the tables. The exotic Ferns were an average lot, the Davallia variety being to the front. The season seems to have done well with the showy Vallota purpurea (Scarborough Lily), of which there were a number of well-bloomed plants.

#### CUT FLOWERS.

Of cut flowers there was a large display, and these formed the most agreeable and interesting feature of the exhibition. Gladioli, Dahlias (show, fancy, single, and Cactus), Hollyhocks, and Asters were particularly well represented, the nurserymen, however, being a long way ahead of their gardener friends in the quality of their exhibits. Alexander E. Campbell's thirty Gladioli were perhaps the best grown cut flowers in the exhibition. The spikes were large and of excellent colour. Messrs. Stuart & Mein also exhibited some pretty spikes. The best of Mr. Campbell's were Diamond, De Mirbel, Horace Vernet, and Damon d'Urville; and in the 2d prize lot there were pretty spikes of Undine, Nereide, and African. Mr. M. Campbell, Blantyre, showed eleven spikes Hollyhocks—a flower which seems to be recovering from the disease which nearly annihilated it a few years ago — the Queen of Yellows being particularly pleasing. A very pretty display was made by Messrs. John Lamont & Sons with their trusses of single Dahlias. This flower has been made quite a specialty by the firm whose Glen Nurseries have ever been famed for Dahlias. In all fifty varieties were shown by them, several very attractive in colour. Of the newer kinds may be specially mentioned Mrs. R. J. Hamill, a yellow regularly striped with red; Jane Wallace, a strong lilac marked with magenta; Her Majesty, a yellow tipped with pure white; James Cocker, a crimson striped with maroon; Miss Gladstone, a silky mauve; and Jane Gilbert, a terra cotta with fancy markings. Messrs. R. B. Laird & Sons had also an attractive display of this now popular flower.

Double Dahlias suffered greatly in Scotland from the August frosts, and the blooms shown were not so large as usual. For the best twenty-four Mr. Montgomery, The Glen, Cardross, had a remarkably even lot; and the Messrs. Laird, who were 2d, were not far behind him. This firm were placed 1st for their fancy Dahlias. One of the prettiest double Dahlias of the season is a white suffused with the faintest pink blush. It has been named Mrs. Gladstone. General Gordon is one of the best of the new fancy Dahlias, but the blooms shown of the "General" were not quite up to the mark.

#### ROSES.

It has been said that it is always the unexpected that happens. Who would have dreamt of Roses grown under the cold grey skies of "Aberdeen awa" beating blooms from the famous nurseries of Belmont? Yet so it was last Wednesday, when Messrs. James Cocker & Sons, Aberdeen, carried off the 1st honours in the Rose competition both for the best thirty-six and also for the best eighteen. The Messrs. Cocker have been coming to the front for several years past as rosarians, and the blooms they exhibited were certainly of great excellence.

In the thirty-six bloom competition Hugh Dickson, Belmont, was placed 2d, but in the eighteen bloom contest the Belmont Roses were out of the running altogether, Mr. Dickson's old opponents, Messrs. Smith & Sons, Stranraer—excellent Rose growers also—being awarded the 2d ticket. The victory of the Messrs. Cocker was a very popular one. It had begun to be a "pious opinion" if not an "article of faith" among our home nurserymen, that the Irish Roses could not be beaten. This upset to that belief will it may be hoped spur them up to pay even greater attention than they have done to the cultivation of this beautiful and favourite flower. The Rose competition next July in Edinburgh should be of some interest. Hugh Dickson, if we mistake not, will give the Scotch nurseymen a tussle for the leading place, for which they should strenuously prepare.

#### TABLES OF PLANTS.

The nurserymen's large tables ranged down the centre of the hall, and well stocked with choice greenhouse and other plants, made as formerly an effective display. To Ireland & Thomson fell the 1st prize for the table of plants, 40 feet by 10 feet, arranged for effect. Their exhibits included many lovely Crotons, Palms, and Dracænas interspersed with beautiful Orchids. R. B. Laird & Sons were a good 2d. This firm also showed a very nice collection of new varieties of Crotons and Dracænas, the colour on their table being mainly supplied by Pelargoniums and the bright Erica mammosa carnea. On their table was a large plant of Alocasia Sanderiana, with fine dark green leathery leaves, strongly ribbed with white. On a very tastefully arranged table—which had not been entered for competition—J. Methven & Son exhibited groups of their decorative Pelargoniums, as also pretty Crotons, Dracænas, Pandanus, and Cyperus. A very large floral cross, consisting of white flowers, but having upon it crimson and yellow bosses or stars, was rather effective.

Dickson & Sons, Waterloo Place, have recently taken a new departure, which was manifested on their very admirable table of exhibits. Instead of sending the usual collection of nurserymen's plants, they went in this time chiefly for a seasonable display of cut flowers and of fruit chiefly grown at their new nurseries, Liberton. They showed no fewer than 110 varieties of Apples and Pears, which, of course, included every well known kind and many new ones. Of the newer varieties Stewart's Seedling, the new Northern Greening, Duchess of Oldenburg, King of Pippins, Robert Black (a very excellent Apple), and Mr. Gladstone, may be specially mentioned as good croppers, and otherwise satisfactory for cultivation. The cut flowers included very showy French Marigolds, single and pompon Dahlias, Carnations, Roses, and Pansies. An interesting exhibit was two plants of the new Sycamore—Acer Hookerianum, which has been recently introduced into this country by this firm. The young trees, three years old, stood about 4 feet in height, and were covered with a splendid crop of their large pinnated leaves, which showed a pretty reddish-brown colour on the underside. Mr. Robertson Munro, Abercorn Nurseries, had one of the brightest tables in the hall. It was entirely given up to a display of cut herbaceous and florists' hardy flowers, of which nearly 200 different kinds were on exhibition. Among other things shown of some interest were the scarlet Lobelia Queen Victoria, Chrysanthemum maximum, with very large flowers; Lilium giganteum, a sprig with large bright berries of the Rosa rugosa, a fine spike of Lythrum superbum, Menziesia polifolia alba, &c. Mr. Munro never did better at an autumn show.

Among other things in the Market Hall worthy of notice was the very interesting table of curious plants from the Botanic Gardens. These included a remarkably fine collection of pitcher and insectivorous plants, several of the Nepenthes being hybrids raised by Mr. Lindsay, the Curator.

Mr. J. O. Mackenzie, of Portmore, sent for exhibition a number of small branches, with cones, of the newer Conifers, which had been grown at an elevation of upwards of 800 feet above sea-level. The list included the Albert Fir, young plants of which are at present growing at Portmore from seed ripened at Carstairs; the Nordmanniana, Douglas, and Menzies Firs, and Abies nobilis.

There was likewise an interesting exhibition of bees, and at the west end of the hall there was a display of manufactured goods more or less associated with horticulture. Wotherspoon's hot-water boiler for conservatories seemed a serviceable article; Robert Ure, Princes' Street, had a great display of artistic ornamental stoneware; Mr. Andrew Wight, Hope Lane, had three prettily designed ferneries; and Messrs. Smith & Co., High Street; and Mr. P. Brown, Hamilton Place, ornamental wirework, stands, &c., for plants.

## DERBY HORTICULTURAL SHOW: September 9 and 10.

THE annual show of this Society was held, in connection with the Agricultural Show, in the Recreation Ground, the weather on the first day being very showery but on the second day everything that could be desired.

The show itself was, as a whole, a good one, the competition in the various classes, both by nurserymen, amateurs, and cottagers, being very close, the exhibits quite up to the average, the liberal prizes offered for stove and greenhouse foliage and flowering plants having brought many competitors amongst the nurserymen.

### FOLIAGE AND FLOWERING PLANTS.

The leading prizes were awarded to Mr. Cypher, of Cheltenham, and Mr. Tudgey, Waltham Cross, who showed in their well-known style. The former beat his old rival with a very good dozen of plants, comprising Phœnocoma prolifera, Allamanda nobilis and A. Hendersonii, Clerodendron Balfourianum, Ixora Colei, Erica Irbyana and retorta major, Kentia Fosteriana, Latania borbonica, Cycas circinalis, and Crotons Sunset and Prince of Wales. Mr. Tudgey was 2d, his plants lacking the freshness of the former; 3d, Mr. Haslam, Hartoft, whose plants were much smaller.

### STOVE AND GREENHOUSE PLANTS.

Twelve stove and greenhouse, gentlemen's gardeners, brought five competitors, the 1st prize being awarded to Mr. Ward, Reddings; 2d, to Mr. Roberts, Highfield Hall, Leek. In my opinion this collection was a long way the 1st; the decision of the judges was strongly commented upon at the time—the flowering plants were much better than in the former collection, as were also the arrangement of them. 3d, Mr. Milford, Allestree Hall, who showed also a good collection; 4th, Mr. Gilbert, Duffield Hall; 5th, Mr. Robinson, Meynell Langley.

Ferns and Selaginellas were well shown, the 1st for the former going to Mr. Ward, Reddings, for a good six; while the 1st for Selaginellas went to Mr. D. Robinson for six good pairs, well done.

### CUT FLOWERS.

Cut Asters, Dahlias, Marigolds, Roses, were good, as were also cut double and single trusses of Pelargoniums and Gladiolus.

Bouquets were shown in quantities, but the exhibitors should copy the example set them by those which were awarded 1st, which came from Mr. Cypher, who took both the 1st; others were, as is often the case, sadly overcrowded.

### FRUIT.

Collection of ten distinct sorts brought four collections. 1st, Mr. Goodacre. Elvaston Castle, who showed well in everything; Mr. Ward, Reddings, 2d, with a good lot; closely followed by Mr. Evans, Chaddwen, who was 3d.

Grapes proved a strong competition. 1st for black was awarded to Mr. Evans, but in the opinion of many competent judges the 2d prize lot, from Mr. Goodacre, should have held the prominent position; 3d, Mr. M. Vineil, who was 1st with white, showing good bunches of Chasselas Napoleon, well finished; 2d, Mr. H. W. Smith, Alvaston Hall; 3d, Mr. Bolas, Hopton Hall, both showing Muscat of Alexandria, good.

Apples and Pears were shown both in good quantity and quality.

Peaches and Nectarines were fair in both respects, as were likewise the Pines and Melons.

### VEGETABLES.

These, considering the drought that has been experienced, were shown in first-rate quality.

In the collection of twelve sorts the 1st prize was awarded to Messrs. J. & H. Hickling, Loughborough, for a good lot.

Potatos and other vegetables were shown in great quantity, the quality being quite up to the average.

### AMATEURS AND COTTAGERS.

These showed well in their respective classes. The plants, flowers, fruits, and vegetables shown by the various exhibitors were of good quality, and reflected great credit upon the various contributors.

The prizes offered for bouquets of wild flowers for children was full of interest to those exhibiting, the competition strong and deserving of great praise, the female sex taking the leading award.

### NOT FOR COMPETITION.

Mr. John Campbell, Mickelover Manor Gardens, showed six splendid bunches of Grapes, two Muscat of Alexandria, two Canon Hall, two Alnwick Seedling, all very fine bunches, weighing, the former, nearly 6 lb. each—good berries, well finished.

Mr. Goodacre showed, from a very extensive collection of Apples grown at Elvaston, twenty-five varieties he considers, from long experience, best adapted for the climate of Derbyshire. These were shown upon the boughs, thus showing their prolific qualities in the most evident manner.

Messrs. Barron & Son, nurserymen, Borrowash, showed a choice collection of ornamental trees and Coniferæ; it was a pity they were not named, so as to have afforded a guide to the many interested onlookers. The same firm showed a splendid type of Lilium auratum, called rubrum vittatum, bright red taking the place of the yellow in the ordinary varieties. They also had some good summer-houses, rustic seats and chairs, &c.

Mr. Cooling, nurseryman, Derby, showed collections of cut flowers, Roses, Dahlias, wreaths and crosses, plants, &c. *A. O.*

## NORTHAMPTONSHIRE HORTICULTURAL: September 9 and 10.

THIS Society held its second exhibition this year on a large piece of ground temporarily fenced off from the race-course adjacent to the town. An untoward occurrence took place during the night preceding the show: the principal tent containing some of the best plants exhibited in the leading classes was blown down through being insufficiently secured, and this necessarily caused delay. Considering the lateness of the season the exhibition may be pronounced a success; flowering and fine-leaved plants were well shown, especially the former, which several of the competitors staged in better bloom than might have been looked for.

### STOVE AND GREENHOUSE PLANTS.

In the open class for twelve stove and greenhouse plants, six in flower and six fine-foliage, Mr. Cypher, Cheltenham, scored an easy victory, staging a handsome group containing some very fine Crotons and Palms, Erica Eweriana, E. obbata purpurascens, Stephanotis floribunda, and Clerodendron Balfouriana. It is only in comparatively recent times that the two last-named plants have been seen much of at autumn shows, now several exhibitors bring them out in almost as good condition at the latter end of the season as at the beginning, proving the accommodating character of the plants. Mr. J. Parker, Victoria Nursery, Rugby, who was 2d, had amongst others a well-flowered Dipladenia amabilis, Lapageria rosea, and Allamanda Hendersoni, also in nice condition. The best of the fine-leaved plants in this collection were Croton majesticus, C. Youngii, and Corypha australis.

Ten stove and greenhouse plants (amateurs), five in flower, and five fine-leaved.—With these Mr. Holland, gr. to W. Jeffrey, Esq., Billing Road, Northampton, took 1st, having nicely bloomed examples of Bougainvillea glabra and Dipladenia amabilis, bearing numerous trusses of unusually large flowers; amongst the ornamental-leaved subjects in this group was Cycas revoluta in flower.

Six stove and greenhouse plants (amateurs).—1st, Mr. Miller, gr. to R. Loder, Esq., Whittlebury.

### FERNS, FUCHSIAS, &c.

In the class for six exotic varieties, Mr. Holland was the only exhibitor, taking 1st with a pretty half dozen, including Gymnogramma chrysophylla, and Adiantum farleyense.

Twelve dinner-table plants.—1st, Mr. Holland.

With six Fuchsias, Mr. Garfirth, gr. to P. Phipps, Esq., Collingtree, was 1st; 2d, Mr. F. Beard.

Six double varieties of zonal Pelargoniums.—1st, Mr. Garfirth. Six singles.—1st, Mr. F. Beard; 2d, Mr. Garfirth.

### GROUPS OF PLANTS

were, as at most horticultural gatherings, made a leading feature. Liberal prizes were offered, and a large tent devoted to them. Evidently the space to be covered—240 feet, required more filling than most of the exhibitors competing had calculated upon, as most of the groups were too thin to admit of the pots being sufficiently hid. Some of the flowering plants used were too large. It is also a mistake to introduce formally trained specimens, even if they are not large, into groups of this description, one of the main characteristics of which should be an absence of all that is stiff and formal. Mr. J. Parker was 1st, Mr. Miller 2d, and Mr. Holland 3d.

### TABLE DECORATIONS.

Notwithstanding the general protest so long made against the use of anything in the shape of stands of flowers or of plants in this kind of decoration that are so high as to interfere with an uninterrupted sight across the table, exhibitors have persistently clung to arrangement in which the plants or stands employed are too high to be seen above. In this way they place themselves in the anomalous position of standing directly opposed to the principle accepted in the kind of decoration they undertake to illustrate. It does not require much reflection on the part of either exhibitors or those who act as judges in competitions of this kind to see that if they are to keep abreast of the times it is necessary to get out of the old ruts. At the least it is inconsistent to hold on to a system that would not be tolerated in one household out of a score where table decoration is adopted. On this occasion most of the competitors kept clear of the antiquated stands, using only plants for the centre-line, with a moderate addition of flowers and green foliage.

Mr. Cypher was 1st, with a table on which the low arrangement in question was adapted; a small Cocos Weddelliana, little more than a foot high, occupied the centre, with four smaller plants of the same elegant Palm as accessories, standing in a square about 15 inches from it; round the base of the central plant were suitable flowers, thinly placed in a setting of Ferns. A few small low glass stands, holding a few flowers and Ferns completed the arrangement, which for elegance combined with a due appreciation of form and colour in the materials employed, it would be difficult to beat. Mr. Parker and Mrs. J. Chettle, who were respectively 2d and 3d, both had beautiful tables, arranged similarly to the 1st, and little inferior, except that the plants used were somewhat too large to avoid the objection on the score of height.

With a hand-bouquet, Messrs. S. Perkins & Sons, Warwick Road Nursery, Coventry, and Mr. Cypher were equal 1st, both showing beautiful examples; Mr. F. Perkins, Leamington, 2d.

### CUT FLOWERS.

There was not a large display of Roses, but some of those shown were unusually good for the advanced season; with twenty-four, Messrs. S. Perkins & Sons, took 1st, having a nice stand; Mr. House, Peterborough, a good 2d.

Dahlias were well shown. In the class for twenty-four show varieties, Messrs. J. & H. Hickling, nurserymen, Loughborough, took the lead with large, full-sized flowers, the best of which were General Roberts, salmon colour; Prince Bismarck, purple; James Cocker, purple; Mrs. J. Laing, white; Mrs. Harris, blush; and Aurora, salmon. 2d, Messrs. T. Perkins & Son, Kingsthorpe Nurseries.

Twelve varieties of single Dahlias.—1st, Messrs. T. Perkins & Son; 2d, Mr. House.

Twelve fancy Dahlias.—These also were well shown—Messrs. Hickling taking 1st, here also with a beautiful set of blooms, conspicuous amongst which were Flora Wyatt, shaded salmon; Miss Browning, yellow, tipped with white; and the Rev. J. B. M. Camm, yellow, flaked with crimson; 2d, Messrs. T. Perkins & Son.

Twelve show Dahlias (amateurs).—1st, Mr. Miller; 2d, Mr. F. Beard.

Twelve single Dahlias (amateurs).—1st, Mr. J. D. Howes; 2d, Mr. S. Allen, gr. to H. S. Pritchard, Esq.

Miscellaneous cut flowers were forthcoming in good condition, Mr. F. Perkins being 1st with a fine stand of twenty-four varieties, consisting of stove, greenhouse, and herbaceous varieties; 2d, Mr. Parker.

### FRUIT.

With six dishes Mr. F. Day, gr. to Lord Wantage, Overstone, took 1st, having in a nice collection Black Hamburgh Grapes, a good dish of Crimson Galande Peaches, a Melon, and Apricots; 2d, Mr. Garfirth.

Three bunches of Black Grapes.—1st, Mr. Miller, who staged a couple of bunches of Madresfield Court nicely finished, and one of Black Hamburgh; 2d, Mr. F. Day with Black Hamburgh.

Three bunches of White Grapes.—1st, Mr. Miller, who had Muscat of Alexandria, nice bunches, well finished.

Single Melon.—1st, Mr. E. Simons, Harlestone; 2d, Mr. Holland.

Dish of Peaches.—With these, Mr. F. Day and Mr. Miller were equal 1st, both showing beautiful fruit, Mr. Day having grand examples of Crimson Galande.

Dish of Nectarines.—1st, Mr. Miller; 2d, Mr. J. Fairbrother.

Plums, Apples, and Pears were in excellent condition.

In a close competition with three varieties of Plums, twelve of a sort, Mr. R. C. Westley, Kislingbury, took 1st; 2d, Mr. H. Collings, Berry Wood.

Three varieties of Pears, six of each.—1st, Mr. Garfirth; 2d, Mr. Slarke, gr. to Sir T. Hesketh.

Three varieties of Apples, six of each.—1st, Mr. Harlock, gr. to Lord Lilford; 2d, Mr. R. C. Westley.

Messrs. John Perkins & Son exhibited a fine collection of Gladioli; Messrs. T. Perkins & Son, Dahlias; and Mr. House, Peterborough, a collection of Roses—in each case not for competition.

# FORESTRY.

## DRAINING.

REMOVE accumulations of leaves, twigs, and branches from woodland ditches, as well as from the mouths of closed drains and culverts. With the late stormy wet weather these are apt to get choked up, and, unless immediately attended to, soon occasion much extra trouble and expense. The scouring and cleaning of woodland ditches should be steadily prosecuted during the present warm weather, it being at that time more satisfactorily accomplished than during cold winter weather, as well as being less injurious to the men employed at the work. Cut new drains where stagnant moisture in the woods proclaims that such is necessary, and in doing so throw the soil well back from the verge so as to prevent its being accidentally thrown in again.

### GAME COVERTS.

The layering and general extension of game coverts

may, where necessary and as time permits, be now engaged in. Laurels that have become overgrown should be bent over and pegged down (pruning, for appearance sake, had better be deferred till early spring), Privets pruned and layered, and the Rhododendron, where such is employed, divided, replanted, and laid for further stock. As layering is a simple and most inexpensive method of getting up covert, it should, on all estates where such is required, be extensively practised. A man and boy with hand-bill, mallet, and spade will go over a great number in a day by proceeding as follows:—First cut a number of good strong hooked pegs—Oak, Ash, or any hardwood will do—and having bent the branch to be layered down until at about half its length it comes in contact with the ground, at which point it should be secured firmly by driving one of the pegs firmly into the ground, the hooked head of which will serve to keep the branch in position until rootlets are emitted. A spadeful of earth may be thrown over the layer at the point of junction with the ground, which will materially assist the process of rooting. All branches not layered may be removed from the stool.

### PLANTING.

The enclosing, draining, and pitting or trenching of ground for new plantations, should be finished as quickly as possible. Ground of a stiff, retentive nature should be well broken up, either by trenching or steam-ploughing and drainage, previous to inserting the plants. Pitting is, in any case, a valuable preliminary to planting, more especially where done some time previous, the winter air having a most beneficial effect on newly exposed soil. Planting large evergreens may now be successfully performed, staking and tying where necessary, and giving the plants a liberal mulching to prevent excessive evaporation. Dead trees in last year's plantations should be removed, and holes for their successors prepared; at the same time it is well to ascertain, and remedy if possible, the cause of failures. Where slips have occurred along the banks of rivers and streams, the planting of Willows will be found an excellent remedy against further injury. Deciduous trees intended for planting out during the coming season should be lifted towards the end of the month, and "sheughed" in a dry, warm situation until required for use. In "sheughing" plants avoid overcrowding, and place so that the heads of one row shelter the stems and roots of the previous one.

### ROADS AND WALKS.

Prepare and get forward stone and other material for road-making and repairing. Surface ruts and other inequalities should be levelled down at once, edges cut, weeds removed, gratings cleaned, and obstructing twigs or branches cut back and removed. Use the edging-iron along the sides of walks, and freshen the surface by a timely raking, or the application of gravel where such may be deemed necessary. *A. D. Webster, Penrhyn Castle, North Wales.*

### PAULOWNIA IMPERIALIS.

In this country we usually plant this tree almost regardless of its being one that demands a warm position, and often find it in shady parts of the pleasure-ground, or carelessly stuck in amongst the usual heterogeneous collection of an English shrubbery. If it requires shelter it does not need to be crowded with other things with that end in view. What perhaps is required is the fullest southerly exposure, with dense trees at the rear, or else tall buildings. In such positions it will, in ordinary years, ripen its wood and flower well. The tree is not "spring tender," and can withstand any amount of cold such as we have[?]. In the bird market in Paris it is planted in intersecting lines, perhaps a dozen feet apart, and affords the frequenters of the market a grateful shade in hot weather, the leaves being large, and yet not numerous, nor the habit dense, so that under their shade there is a pleasant circulation of air. There some of the trees are allowed to flower, the handsome purple Gloxinia-like bloom being very striking; other trees have their shoots shortened back annually. In the case of these latter the heads are more compact and regular in outline. Possibly, having the continued good health of the trees in view, the flowering trees of one year become the pruned ones of the next.

### JUNIPERUS VIRGINIANA.

This is not frequently planted in a group, and yet it is one of the best for the purpose, being a quick grower, and relatively cheap to buy. In parks and pleasure-grounds of considerable extent, where deciduous and light green foliage abounds, this tree, carefully planted as regards quantity and position, forms an admirable contrast with the lighter greens, and associates well with glistening sheets of water, and adds shade, if wanted, to gloomy pools and secluded nooks. When thickly planted—that is, at 4 feet asunder, and even at a less distance—the plants grow straight and rapidly, forming fewer side-branches than when planted at a wide distances or when solitary. The outer trees of a group will extend their outside branches much as the Yew does, and will eventually sweep the ground, thus taking off the stiff appearance the group would otherwise acquire. The outsiders will also grow less in height than those in the interior, and in that way give the pleasing pyramidal form and irregularity to a group that is so desirable. In park land that is sometimes fed off the tree is preferable to the Yew, as nothing will browse on it excepting roe-deer, and these only in very severe weather. The wood has a certain value, when of fair size, for the lining of cabinet-makers' work, it being easily worked, agreeably perfumed, and insect-proof—at least to insects of temperate climes. *Sylvestris.*

### SPANISH CHESTNUT GRAFTED ON OAK.

It will probably be news to most readers of the *Gardeners' Chronicle* to learn that Castanea sativa grafts readily on the common Oak. This tree only thrives where more or less sand is present in the soil, and in places where this constituent is almost or altogether absent the Spanish Chestnut often refuses to grow. Such is the case in the Botanic Garden at Dijon, where the only specimen is a grafted one, the stock below the graft being allowed to develope a shoot or two, just to prove to the sceptically inclined that it is nothing but the common Oak. Indeed, we were informed by Mons. Weber, the Curator, that it is only by using the Oak (which thrives at Dijon) that he is enabled to grow the Spanish Chestnut at all, as it will not succeed on its own roots. *G. N.*




*STATE OF THE WEATHER AT BLACKHEATH, LONDON*
FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 16, 1885.

| Month and Day | Barometer: Mean Reading at 32° Fahr. | Barometer: Departure from Average of 18 Years | Temperature of the Air: Highest. | Temperature of the Air: Lowest. | Temperature of the Air: Range | Temperature of the Air: Mean for Day. | Temperature of the Air: Departure of Mean from that of 59 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Humidity Sat = 100 | Wind: Average Direction | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 10 | 29.64 | —0.26 | 63.5 | 47.0 | 16.5 | 53.6 | —4.4 | 50.8 | 90 | S.W. | 0.87 |
| 11 | 29.38 | —0.51 | 59.0 | 49.5 | 9.5 | 53.4 | —4.4 | 44.6 | 72 | N.W. | 0.01 |
| 12 | 29.74 | —0.15 | 62.0 | 47.5 | 14.5 | 52.2 | —5.4 | 50.0 | 93 | N.W. | 0.05 |
| 13 | 29.86 | —0.03 | 66.0 | 54.0 | 12.0 | 58.2 | +0.8 | 51.3 | 78 | S.W. W.S.W. | 0.00 |
| 14 | 29.70 | —0.09 | 68.5 | 48.5 | 20.0 | 58.7 | +1.5 | 56.8 | 94 | S.W. | 0.01 |
| 15 | 29.63 | —0.19 | 74.5 | 57.5 | 17.0 | 64.3 | +7.2 | 57.2 | 75 | E.S.E. S.S.E. | 0.00 |
| 16 | 29.91 | +0.05 | 68.5 | 54.0 | 14.5 | 58.4 | +1.5 | 54.0 | 86 | S.W. | 0.39 |
| Mean | 29.71 | —0.17 | 66.0 | 51.1 | 14.9 | 57.0 | —0.5 | 52.1 | 84 | S.W. | 1.33 |

Sept. 10.—Fine bright morning, dull afternoon, heavy rain from 7 to 11 P.M.
" 11.—Slight rain in early morning, dull day, very fine clear night.
" 12.—Rain in early morning, dull day and night, strong wind.
" 13.—Fine dull day, clear sky at night.
" 14.—Dull day, fine and bright about 2 P.M.
" 15.—Very fine day and night.
" 16.—Dull day, heavy rain in evening.

LONDON: *Atmospheric Pressure.*—During the week ending September 12, the reading of the barometer at the level of the sea increased from 29.61 inches at the beginning of the week to 29.70 inches by 1 P.M. on the 6th, decreased to 29.58 inches by 5 P.M. on the 7th, increased to 29.82 inches by 9 A.M., decreased to 29.77 inches by 1 P.M. on the 8th, increased to 29.84 inches by 9 A.M. decreased to 29.75 inches by 1 P.M. on the 9th, increased to 29.89 inches by 9 A.M. on the 10th, decreased to 29.47 inches by 9 A.M. on the 11th, increased to 29.98 inches by 9 A.M. on the 12th, and was 29.86 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.78 inches, being 0.07 inch lower than last week, and 0.35 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 73°, on the 6th, on the 11th the highest was 59°. The mean of the seven high day temperatures was 64°.5.

The lowest temperature was 47°, on the 10th; on the 7th the lowest temperature was 56°. The mean of the seven low night temperatures was 49°.9.

The greatest range of temperature in one day was 24°.1, on the 6th; the smallest, on the 7th, was 5°.5. The mean of the seven daily ranges was 14°.6.

The mean temperatures were—on September 6th, 59°.3; on the 7th, 58°; on the 8th, 57°.6; on the 9th, 57°; on the 10th, 53°.6; on the 11th, 53°.4; and on the 12th, 52°.2; and these were all below their averages (excepting the 6th, which was 0°.9 above) by 0°.4, 0°.7, 1°.1, 4°.4, 4°.4 and 5°.4 respectively.

The mean temperature of the week was 55°.9, being 1°.4 lower than last week, and 2°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 126° on the 6th. The mean of the seven readings was 103°.5.

The lowest reading of a minimum thermometer placed on grass was 40°, on the 10th. The mean of the seven readings was 42°.

*Rain.*—Rain fell on five days, to the amount of 2.08 inches, of which 0.87 inch fell on the 10th.

ENGLAND: *Temperature.*—During the week ending September 12 the highest temperatures were 73° at Blackheath, 70°.9 at Cambridge, 70° at Sheffield; the highest at Bradford was 63°.8, at Preston 64°, at Liverpool 64°.8. The general mean was 67°.

The lowest temperatures were 40°.5 at Cambridge, 42° at Hull, 43° at Wolverhampton, the lowest at Liverpool 49°.3, at Plymouth and Brighton 48°.8. The general mean was 46°.2.

The greatest ranges were 30°.4 at Cambride, 26° at Blackheath, 23° at Sheffield and Hull; the least ranges were 15°.5 at Liverpool, 16°.4 at Bradford, 17°.2 at Plymouth. The general mean was 20°.8.

The mean of the seven high day temperatures was highest at Cambridge, 66°.8, at Brighton 65°.2, at Truro 65°; and was lowest at Bolton, 60°.3, at Liverpool and Bradford 61°. The general mean was 63°.

The mean of the seven low night temperatures was highest at Truro, 52°, at Plymouth 51°.9, at Bristol 51°.6; and was lowest at Hull, 46°, at Wolverhampton 46°.2, at Bolton 46° S. The general mean was 49°.4.

The mean daily range was greatest at Cambridge, 18°.8, at Hull 16°.6, at Wolverhampton 15°.9; and was least at Liverpool, 9°.6, at Plymouth and Bradford 11°.4. The general mean was 13°.6.

The mean temperature was highest at Truro, 57°.1, at Brighton 56°.8, at Plymouth 56°.2; and was lowest at Bolton, 52°.2, at Wolverhampton 52°.8, at Hull 52°.9. The general mean was 54°.9.

*Rain.*—The largest falls were 2.84 inches at Truro, 2.26 inches at Nottingham, 2.17 inches at Bristol; the smallest falls were 0.38 inch at Leeds, 0.61 inch at Bradford, 0.74 inch at Hull. The general mean fall was 1.57 inch. Rain fell on every day in the week at Plymouth, Brighton, Bristol, Cambridge, Wolverhampton, and Bolton, and from four to six days at other stations.

SCOTLAND: *Temperature.*—During the week ending September 12, the highest temperature was 68°.2, at Dundee; at Perth the highest temperature was 61°.5. The general mean was 64°.6.

The lowest temperature in the week was 35°, at Perth; at Greenock the lowest temperature was 44°.2. The general mean was 41°.7.

The mean temperature was highest at Edinburgh, 53°.8; and lowest at Perth, 52°.1. The general mean was 53°.3.

*Rain.*—The largest fall was 3.26 inches at Greenock,

the smallest fall was 0.70 inch, at Aberdeen. The general mean fall was 1.41 inch.

JAMES GLAISHER, F.R.S.

SUMMARY OF TEMPERATURE. RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Sept. 14, 1885, issued by the Meteorological Office, 116, Victoria-street, London, S.W. :—The *weather* has been in a very changeable, unsettled condition, in all parts of the kingdom, with large quantities of rain, and occasional thunder and lightning.

Temperature has about equalled the mean in "Scotland, N.," and "England, N.E.," but has been 1° or 2° below in all other districts. The maxima, which were recorded on different days in the various districts, ranged from 63° to 66° in Scotland, between 65° and 69° in Ireland, and from 67° to 70° over England. The minima were registered either on the 11th or 12th, when the thermometer fell to 35° in "Scotland, N.," 36° in "Scotland, E.," and to between 38° and 43° in most other districts; in "England, S.W.," however, the lowest reading was 45°, in "England, S.," 46°, and in the "Channel Islands," 49°.

The *rainfall* has been more than the mean in all districts, the excess being very large in all except the extreme northern and north-eastern parts of the kingdom. During the night of the 10th—11th the fall over the greater part of England was between 1 inch and 2 inches, while in some localities it was even greater; thus, at Cullompton 2.17 inches was measured, at Tiverton 2.24 inches, at Street (Somerset) 2.50 inches, and at Taunton 3.05 inches.

*Bright sunshine* shows a decrease in most districts, the percentage of the possible amount of duration varyidg from 24 to 39 in most places, to 48 in the "Channel Islands."

*Depressions observed.*—During the whole of this period a series of somewhat extensive and deep depressions has skirted our western and north-western coasts, causing occasional strong winds or gales in all parts of the kingdom. In addition to these disturbances some smaller ones have occasionally appeared more directly over us, thus the shallow depression noticed at the close of last week as travelling eastwards over England, moved slowly in a north-easterly and north-north-easterly direction over the North Sea, while during the night of the 10th—11th a well defined and deep depression, which had formed near the Scilly Islands during the previous afternoon, travelled eastwards up the English Channel, bringing moderate to strong gales, at first from the southward, and afterwards from the northward and north-westward, at all our southern stations, and a violent northerly gale over France.

## Answers to Correspondents.

ABERIA CAFFRA : *H.* We are delighted to see the fruit you send, on which we shall report more fully on another occasion. It belongs to the order Bixaceæ, and is a native of the Cape of Good Hope. You will find it mentioned in the supplement to the second edition of the *Treasury of Botany*.

BOOKS : *J. C. W.* The publishers' names are given at p. 306. We do not know the price; such matters should be advertised.

BROCKWORTH PARK PEAR AND COVENT GARDEN ½ SIEVE : *K. M. Lingwood.* This name is a synonym of Bonne d'Ezée and Bonne d'Haies. It was found as a wilding at Ezée, in the Touraine, in 1788. The Covent Garden ½ sieve contains 3½ imperial gallons.

DOUBLE-FLOWERED DAHLIA : *Reader.* Such doubling of the flower-heads in Dahlias is not uncommon.

ERUCASTRUM INODORUM : *J. C.* We are much obliged for the specimens.

FUNGUS ON BEECH : *V. L. G.* The white appearance is not due to a fungus, but to an insect allied to the "American blight insect," which attacks the Apple. Your trees are so very badly affected that we fear you can do nothing effectual. Any washing or syringing with petroleum emulsions would have to be done on so gigantic a scale as to be practically out of the question.

FUNGUS ON CATTLEYA ROOTS : *W. Low.* Peziza coccinea, Cooke, figured in *Mycographia*, so-called because first found on cocoa-nut fibre, grows on dead vegetable substances, especially dead ends of roots. There is no suspicion of its causing injury to plants, as it occurs only on tissues already dead. *M. C. Cooke.*

JAPAN CRAB FROM TOKIO : *G. Rye.* As an ornamental tree in flower or fruit it is worth keeping. In the ripe state it might be useful for culinary purposes.

GALL ON WILLOW : *J. S.* The irregular swellings on the twigs of your Willow are the work of a gall-fly, Cecidomya salicis.

NAMES OF FRUITS : *J. H. K.* 1, Williams' Bon Chrétien; 2, Flemish Beauty; 3, Passe Colmar; 4, 6, Beurré Rance; 5, Catillac.—*James Beattie.* Apples correctly named. No. 1 is Beauty of Kent.—*Walter Coleman.* Red Astrachan.

NAMES OF PLANTS : *J. M.* Polygonum sachalinense, from the island of Sachalin.—*J. L.* 1, Rubus arcticus; 2, Panicum variegatum. Begonia appears like ricinifoliæ, but was so much damaged by being put in a letter only that we cannot give the name with certainty. Send flower and foliage.—*G. K. G.* The smaller one is Erigeron canadensis; the larger one is Helminthia echioides.—*J. Beattie.* Phillyrea angustifolia.—*H. King.* Arbutus Andrachne.—*Redwood.* Salvia Pitcheri.—*J. D. Pearson.* 1, Ligustrum lucidum; 2, Ceanothus.—*C. W. Dod.* Helianthus tuberosus.—*E. G. Loder.* Probably Zephyranthes Andersoni, but the material is too poor to decide.—*F. W. B.* Not Eryngium dichotomum, perhaps E. planum; but you sent no leaves.—*C. W. D.* Veronica salicifolia.—*Van Volxem.* Aster amellus.—*C. P.* Broad leaf Polygonum cuspidatum. The Fern-leaved Lime.—*H. W.* So far as we can tell from the leaf only, this is Passiflora alata. If you will send a flower we will tell you more precisely.—*C. D. H.* Epidendrum prismatocarpum.—*H. J. P.* 1, Abies magnifica, or nobilis, we cannot tell which from the scrap; 2, Pernettya mucronata; 4, Solidago virga aurea; 5, Polygonum cuspidatum; 6, Lupinus arboreus, perhaps — specimen wretched.

CATERPILLAR : *G. W.* The caterpillar is that of the Death's-head Moth (Acherontia atropos), which feeds on the Potato and other plants. Your specimen is a very fin one, much larger than that here represented, and of a greenish-yellow colour, with lilac spots. The



FIG. 84.—THE DEATH'S-HEAD MOTH.

caterpillar feeds also on the Jasmine, Snowberry, and Solanum Dulcamara, making its appearance principally at night; hence it is more common than many people imagine. The moth is very handsome, and on the back of its thorax is a mark in which superstitious people see a likeness to a skull, and are alarmed accordingly. (See fig. 84.) Both caterpillar and moth produce a curious grating sound. It is needless to say the insect is harmless in all stages, and its destruction of Potato-haulm at this season is of no great moment.

PELARGONIUM : *H. Tickell.* These plants are much given to sporting, hence the numerous varieties. If you wish to increase it, do so rather by cuttings than by seed.

POMPON DAHLIA : *T. S. A.* sends us three flower-heads grown together by accident.

SULPHIDE OF POTASSIUM FOR USE AGAINST MILDEW, RED-SPIDER, &c. : *F. W. Coates.* Strength, ½ oz.—1 oz. to the gallon of water. (See *Gardeners' Chronicle*, vol. xxiii., pp. 276, 352, and 378.)

"THE BOTANICAL MAGAZINE :" *W. F.* This periodical is published monthly by Messrs. Reeve & Co. It contains descriptions of new plants by Sir Joseph Hooker, with coloured plates. It is not a new publication! having been in existence since 1793. It is invaluable for botanical purposes, but its high price puts it out of the reach of most gardeners.

## CATALOGUES RECEIVED.

SUTTON & SONS,-Reading—Bulb Catalogue.
WEBB & SONS, Stourbridge—Seed Corn.
H. CANNELL & SONS, Swanley—Bulbs, &c.
CHARLES TURNER, Royal Nurseries, Slough—Lists of Bulbs, and of Roses, Fruit Trees, Coniferæ, Hardy Trees and Shrubs, &c.
JOSEPH SCHWARTZ, Route de Vienne, 7, Lyon, France—Roses, &c.
ED. PYNAERT VAN GEERT, Brussels and Ghent—General Catalogue and Price Current.
LOUIS VAN HOUTTE, Ghent—American Plants, Ghent Azaleas, Japan Azaleas, Rhododendrons, &c.
W. TAIT & CO., 119 and 120, Capel Street, Dublin—Dutch Flower Roots, &c.
W. GORDON, Lily Nurseries, Twickenham, and at Fleet, Hants—Orchids and Lilies.
J. R. THYNNE, 83, St. Vincent Street, Glasgow—Flower Roots.
JAMES YEATS. Underbank, and Royal Mills, Stockport—List of Bulbs and Flowering Roots.
H. BENNETT, Pedigree Rose Nursery, Shepperton—List of Pedigree Roses.
GIBSON & REID, 14, Lower Ormond Quay, Dublin—Bulbs and Flower Roots.
RICHARD GILBERT, Stamford—General Catalogue.

COMMUNICATIONS RECEIVED :—J. B. J. F. B.—J. H.—J. H. K.—J. S.—G. S. J.—A. D.—W. S.—W. L.—E. G.—W. G. S.—Sutton & Sons.—H. H.—Miss K. Malcolm Dunn (with thanks)—F. M. Sutcliffe, Wynstones.—H. L.—F. W. B.—T. H.—G. B.—H. M., Constantinople.—W. L.—A. Holloway.

## Enquiries.

*"He that questioneth much shall learn much."*—BACON.

LEUCADENDRON ARGENTEUM (THE SILVER-TREE OF THE CAPE).—Having succeeded in raising one plant from seed received from the Cape, I am anxious, as winter approaches, to know whether a conservatory will afford it sufficient warmth and protection during the winter [yes]; and I shall be much obliged to any of your correspondents who will report their failure or success. *Diss.*

PLANERA RICHARDI.—Can you tell me anything respecting the quality and uses of the timber of Planera Richardi? A tree nearly 2 feet in diameter was blown down here three years ago; the wood seems to have considerable strength and toughness, and some variety of colour and figure. Do you know what is its character for durability? *C. W. Strickland.* [Loudon, quoting Michaux, says that the wood is very heavy, and when dry becomes so extremely hard that it is difficult to drive nails into it with a hammer. In its native country, between the Black and Caspian Seas, it is used for the same purposes as Oak, to which it is found superior for furniture purposes. In colour it is pleasing, it is finely veined, and its texture is so compact, and its grain so fine, as to render it susceptible of the highest polish. It has also the great advantage of never being worm-eaten, however old it may be. It is remarkably durable as posts to stand either in water or in the earth. A fine tree of this species was cut down at Kew a few years ago.]

DIED.—On September 13, at Myrtle Cottage, Salisbury, Southampton, Mr. G. KNIGHT, many years superintendent of the Chelsea Hospital Gardens; aged seventy-one years.

## Markets.

*COVENT GARDEN, September 17.*

PRICES remain much the same, with business very quiet. Nuts selling freely at same quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | 3 0 | Melons, each | 0 6 | 1 6 |
| Damsons, ½-sieve | 2 3 | 3 6 | Peaches, per doz. | 2 0 | 4 0 |
| Filberts, per dozen | 0 6 | 0 9 | Pine-apples, Eng., lb. | 2 0 | 4 0 |
| Grapes, per lb | 0 6 | 2 0 | St. Michael, each | 2 6 | 5 0 |
| Kent Cobs, 100 lb | 25 0 | 27 6 | Pears, per dozen | 0 9 | 1 3 |
| Kent Filberts, 100 lb. | 25 0 | 28 0 | — per ½-sieve | 1 6 | 3 0 |
| Lemons, per case | 15 0 | 30 0 | Plums, ½ sieve | 1 6 | 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 5 0 | .. | Lettuces, Cab., doz. | 2 0 | .. |
| Aubergines, each | 0 4 | .. | Lettuces, English Cos, doz. | 1 0 | .. |
| Beans, Kng., per lb. | 0 4 | .. | Mint, green, bunch | 0 4 | .. |
| Beet, per dozen | 1 0 | .. | Mushrooms, basket | 1 0 | 1 6 |
| Brussel Sprouts, lb | 0 6 | .. | Onions, per bushel | 4 0 | .. |
| Cabbages, per dozen | 1 6 | 2 0 | — Spring, per bun. | 0 6 | .. |
| Carrots, per bunch | 0 6 | .. | Parsley, per bunch | 0 4 | .. |
| Cauliflowers, English, per dozen | 2 0 | 4 0 | Peas, per quart | 1 0 | 1 6 |
| Celery, per bundle | 1 6 | 2 6 | Radishes, per dozen | 1 0 | 2 0 |
| Cucumbers, each | 0 6 | 1 0 | Small salading, per punnet | 0 | 4 |
| Endive, per dozen | 2 0 | .. | Spinach, per bushel | 4 0 | .. |
| Garlic, per lb. | 0 6 | .. | Tomatos, per lb. | 0 6 | 0 9 |
| Herbs, per bunch | 0 2 | 0 4 | Turnips, new, bunch | 0 6 | .. |
| Horse Radish, bun. | 1 0 | 4 0 | Veget Marrs., each | 0 3 | .. |

POTATOS.—Magnum Bonums, 70s. to 100s; Regents, 70s. to 110s.; Myatt's, £7 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 15 0 | Ferns, in var., dozen | 4 0 | 18 0 |
| Arbor-vitæ (golden), per dozen | 6 0 | 18 0 | Foliage Plants, various, each | 2 0 | 10 0 |
| — (common), dozen | 6 0 | 12 0 | Fuchsias, per dozen | 2 0 | 6 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen | 15 0 | 24 0 |
| Bouvardia, dozen | 9 0 | 18 0 | — longifolium, doz. | 9 0 | 18 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Marguerite Daisy, per dozen | 8 0 | 12 0 |
| Dracæna terminalis, per dozen | 30 0 | 60 0 | Myrtles, per dozen | 6 0 | 12 0 |
| — viridis, per doz. | 12 0 | 24 0 | Palms in variety, each | 2 6 | 21 0 |
| Euonymus, in var., per dozen | 6 0 | 18 0 | Pelargoniums, scarlet, per dozen | 2 6 | 9 0 |
| Evergreens, in var., per dozen | 6 0 | 24 0 | | | |
| Ficus elastica, each | 1 6 | 7 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | |
| Asters, 12 bunches | 2 0– 6 0 | |
| Bouvardias, per bun. | 0 6– 1 0 | |
| Carnations, per 12 bunches | 2 0– 4 0 | |
| — 12 blooms | 1 0– 2 0 | |
| Eucharis, per dozen | 3 0– 6 0 | |
| Gardenias, 12 blooms | 3 0– 5 0 | |
| Lapageria, white, 12 blooms | 2 0– 3 0 | |
| — red, 12 blooms | 1 0– 2 0 | |
| Lavender, 12 bunch. | 4 0– 6 0 | |
| Lilium longiflorum, 12 blooms | 1 0– 3 0 | |
| Marguerites, 12 bun. | 3 0– 6 0 | |
| Mignonette, 12 bun. | 1 6– 3 0 | |
| Pelargoniums, per 12 trusses | 0 6– 1 0 | |
| — scariet, 12 trusses | 0 4– 0 6 | |
| Rhodanthe, 12 bun. | 6 0– 9 0 | |
| Roses (indoor), doz. | 1 0– 3 0 | |
| Stephanotis, 12 spr. | 3 0– 6 0 | |
| Tropæolum, 12 bun. | 1 0– 1 6 | |
| Tuberoses, 12 blms. | 0 6– 1 0 | |

## SEEDS.

LONDON: *Sept.* 16.—The seed market to-day was thinly attended, and but little business was transacted. There is rather less inquiry for autumn-sowing seeds. Winter Tares are unchanged. Rye keeps firm. Very low rates still prevail for Rape seed. Considerable quantities of new English white Mustard have just been marketed. New French red Clover seed is obtainable between 40*s.* and 50*s.* per hundredweight. Canary and Hemp seed move off slowly on former terms. New French white Millet for birds is now arriving. Haricot Beans and blue boiling Peas are firmly held. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday there was very little English Wheat, and no change was made in quotations, the demand being very limited. For Australian, Indian, and some descriptions of Russian, about 3*d.* to 6*d.* advance was in some cases obtained, at which prices the parcels could not be replaced, owing to the larger advance required in forward positions. It remains to be seen what will be the course of prices now that they are virtually as low as in November of last year, whilst in the place of available supplies from heavy crops there is a considerable shrinkage to look forward to. Flour was firm. Grinding Barley showed fully 3*d.*, in some instances 6*d.*, advance No change occurred in the value of Beans or Peas. Maize tended to harden in value from scarcity. For Oats the trade was quiet, but very moderate arrivals gave some support to prices,—On Wednesday very little was done to test quotations of Wheat, which were nominal. The flour trade was quiet without quotable alteration. Maize was firmer. Beans and Peas moved off slowly, at late values. The trade for Oats remained quiet, without change in prices. Average prices of corn for the week ending Sept. 12 :—Wheat, 31*s.* 1*d.*; Barley, 31*s.* 11*d.*; Oats, 19*s.* 1*d.* For the corresponding period last year :—Wheat, 34*s.*; Barley, 32*s.* 7*d.*; Oats, 19*s.* 9*d.*

## CATTLE.

At Copenhagen Fields on Monday firmer prices in the dead meat trade, and the comparatively very moderate proportion of good or prime qualities of cattle in the supplies assisted the trade for these descriptions, and 10*s.* to 20*s.* per head more was in some cases obtained, but there was no improvement in the market for the plainer kinds. Sheep sold rather more readily, without change in value. The calf trade was very dull. Quotations :—Beasts, 31*s.* 10*d.* to 41*s.* 8*d.*, and 41*s.* 8*d.* to 51*s.* 4*d.*; calves, 31*s.* to 41*s.* 8*d.*; sheep, 41*s.* to 41*s.* 6*d.*, and 41*s.* 10*d.* to 51*s.* 6*d.*; pigs, 31*s.* 10*d.* to 41*s.* 6*d.*—Thursday's trade was very quiet. Beasts sold slowly, at drooping prices. Sheep were very quiet at about Monday's rates, calves were altogether neglected, and pigs firmer.

## HAY.

Tuesday's Whitechapel Market report states that supplies were fair, with a fair trade. Quotations :—Clover, prime, 80*s.* to 110*s.*; prime second cut, 85*s.* to 107*s.*; inferior, 60*s.* to 75*s.*; new Clover, 80*s.* to 94*s.*; hay, prime, 65*s.* to 97*s.*; inferior, 36*s.* to 60*s.*; and straw, 28*s.* to 39*s.* per load.—On Thursday there was a moderate supply on sale, and the trade was dull at Tuesday's rates. Cumberland Market quotations :—Clover, best, 90*s.* to 100*s.*; inferior, 60*s.* to 80*s.*; hay, best, 80*s.* to 92*s.*; inferior, 50*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The Borough Market report states that good samples meet a fair demand at steady rates; inferior sorts neglected Quotations : — Regents, 80*s.* to 90*s.*; Magnum Bonums, 80*s.* to 90*s.*; Early Roses, 70*s.* to 80*s.*; Shaws, 70*s.* to 80*s.*; kidneys, 100*s.* to 110*s.*; and Hebrons, 100*s.* to 120*s.* per ton.—The imports into London last week consisted of 10,556 bags from Hamburg, 707 Boulogne, and 50 bags from Rotterdam.

## COALS.

The following are the prices current during the week :—Bebside West Hartley, 14*s.* 9*d.*; East Wylam, 15*s.* 6*d.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 17*s.*; Hetton Lyons, 15*s.*; Lambton, 17*s.*; Wear, 15*s.*; East Hartlepool, 16*s.*; South Hartlepool, 15*s.*; Tees, 17*s.*; Dowlais Merthyr, 16*s.* 3*d.*

**Government Stock.**—Consols closed on Monday at 100 to 100⅛ for delivery, and 100⅛ to 100⅜ for the account. Tuesday's figures were 100⅛ to 100¼ for both transactions. Wednesday's final quotations were 100 to 100¼ for delivery, and 100⅛ to 100⅜ for the account. Thursday's closing figures were 100 to 100¼ for both transactions,


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| Or in Bags, | ¼ cwt. | 12 | 0 | per Bag. |
| ,, | ½ ,, | 20 | 0 | ,, |
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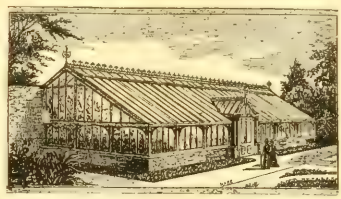
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|---|---|---|---|---|
| 24 ft. .. | 8 ft. .. | 10 ft. .. | £43 10 | |
| 30 ft. .. | 10 ft. .. | 12 ft. .. | 55 10 | ESTIMATES |
| 36 ft. .. | 12 ft. .. | 14 ft. .. | 67 10 | FOR |
| 48 ft. .. | 12 ft. .. | 14 ft. .. | 83 10 | HEATING |
| 60 ft. .. | 12 ft. .. | 14 ft. .. | 100 0 | APPARATUS |
| 72 ft. .. | 12 ft. .. | 14 ft. .. | 118 0 | ON |
| 84 ft. .. | 12 ft. .. | 14 ft. .. | 135 0 | APPLICATION. |
| 96 ft. .. | 12 ft. .. | 14 ft. .. | 151 0 | |

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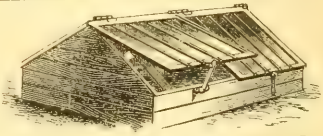
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| 12 feet long, 5 feet wide, ,, ,, ,, | 6 10 0 |

The glass is nailed and puttied in.

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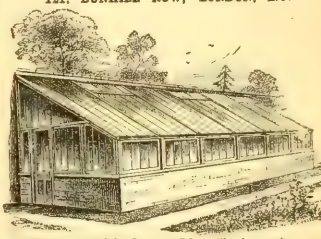
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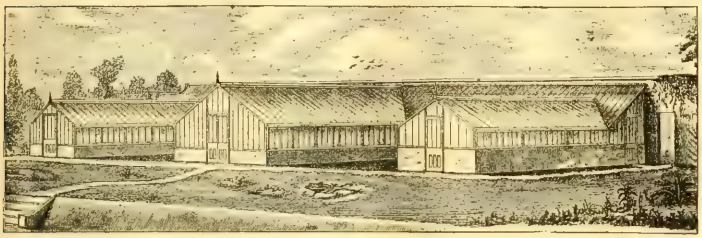
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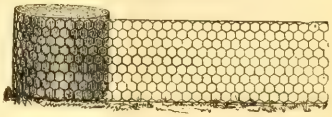
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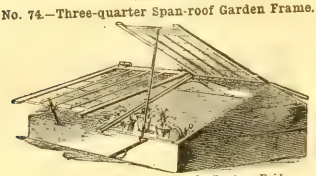
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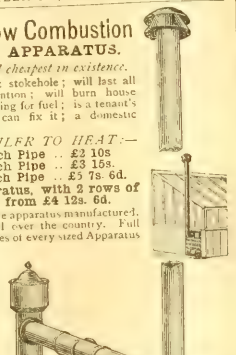
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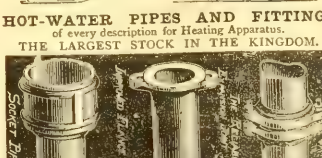
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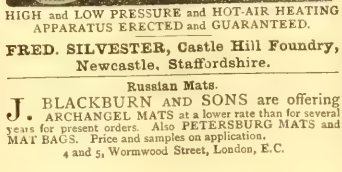
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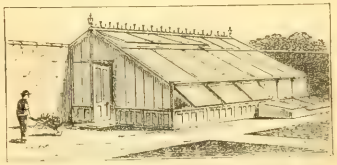
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SCOTCH GARDENERS.—JOHN DOWNIE, Seedsman, 144, Princes Street Edinburgh, has at present on his list a number of SCOTCH GARDENERS, waiting re-engagements. He will be pleased to supply full particulars to any Lady, Nobleman, or Gentleman requiring a trustworthy and competent Gardener.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

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JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, are always in a position to RECOMMEND MEN of the highest respectability and thoroughly practical at their business.—Full particulars, with names of previous employers, &c , on application.

TO LANDED PROPRIETORS, &c.—A. MCINTYRE (late of Victoria Park) is now at liberty to undertake the Formation and Planting of New Gardens and Park Grounds, and Remodelling existing Gardens. Plans prepared. 115, Listria Park, Stamford Hill, N.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

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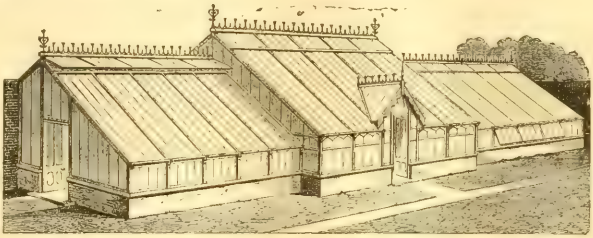
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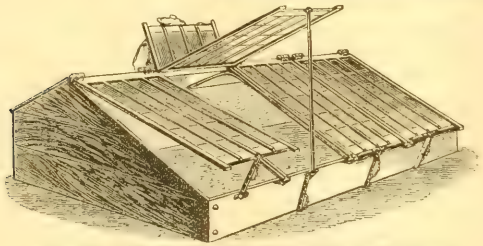
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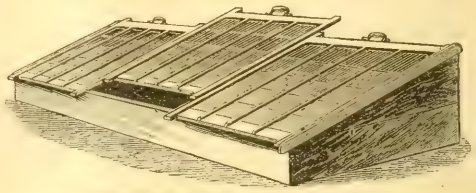


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THE

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SUBSCRIBERS TO

*THE GARDENERS' CHRONICLE who experience any difficulty in obtaining their Copies regularly, are particularly requested to communicate with the Publisher, W. RICHARDS, 41, Wellington Street, Strand, W.C.*

*NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should be made payable at DRURY LANE.*

CRYSTAL PALACE.—INTERNATIONAL POTATO SHOW and GREAT AUTUMN EXHIBITION of HARDY FRUIT, October 7 to 10. For Schedules apply to Mr. W. G. HEAD, Garden Superintendent, Crystal Palace, S.E.

GRAND INTERNATIONAL POTATO EXHIBITION will be held at the Crystal Palace, Sydenham, London, S.E., on OCTOBER 7, 8 and 9. Entries Close on September 30. For Schedules and particulars, apply to P. McKINLAY, Esq.
Headley Lodge, Croydon Road, Anerley, S.E.

APPLE and PEAR SHOW at EXETER, OCTOBER 22 and 23.
SPECIAL CLASSES for Trade and Private Growers, and Tenant Farmers. Prizes from £1 downwards in over fifty classes, all of which are open, and without entrance fees. Schedules, Rules, &c., may be obtained free on application to Mr. I. ISAAC PENGELLY, Hon. Sec.
Guildhall, Exeter.

RICHMOND (Surrey) HORTICULTURAL SOCIETY, 1885.
The CHRYSANTHEMUM SHOW will be held in the Castle Hotel Rooms on NOVEMBER 5 and 6. Special attention is directed to Class 5, in which TWENTY POUNDS is offered for forty-eight Cut Blooms, distinct, twenty-four Japanese and twenty-four Incurved. Schedules may be obtained of J. H. FORD, Hon. Sec.
22, George Street, Richmond.

NATIONAL CHRYSANTHEMUM SOCIETY.
Royal Aquarium, Westminster, S.W.
GRAND EXHIBITION, NOVEMBER 11 and 12. Schedules (free) on application.
NOTICE.—Floral Committee Meetings at the Royal Aquarium, on October 14, 28; November 11, 25; December 9; at 2.30 P.M., precisely. (Regulations see Schedule.)
WILLIAM HOLMES,
Framfield Park Nurseries, Hackney, London, E.
National Chrysanthemum Catalogue, 6d. each.

CAMELLIAS.—A choice Private Collection for Sale; fine healthy plants, from 3 to 7 feet high, in tubs.—Address GARDEN, 97, South Street, Exeter.

Lilium speciosum rubrum superbum.
LILIUM SPECIOSUM RAEZERII.
TWO MOST BEAUTIFUL LILIES from Japan, one red, the other white. Good Plants full of buds and flowers, that would make any greenhouse or conservatory gay. 2 guineas per dozen, £12 10s per 100.
WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

EVERGREEN HEDGES.—ARBOR-VITÆ, American, bushy, well rooted, and adapted for forming a dense hedge:—2 to 3 feet, per 100, 25s.; 3 to 4 feet, per 100, 40s.; 4 to 5 feet, per 100, 50s.; 5 to 6 feet, per 100, 80s.
JOHN JEFFRIES AND SON, Royal Nurseries, Cirencester.

PRIMULAS, CINERARIAS, PRIMULAS. Fine plants, ready for single pots, of the same well-coloured and large flowered strains we have distributed for fourteen years, 1s. 6d. per doz., 10s. per 100, 22s. 6d. for 150.
WM. CLIBRAN AND SON, Oil-field Nursery, Altrincham, and 12, Market Street, Manchester.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

BOUVARDIAS, in eight best kinds, including Doubles, fine bushy plants, 25s. per 100. TREE CARNATIONS, fine for early bloom, 40s. per 100. Choice named CARNATIONS and PICOTEES, strong, 40s. per 100.
W. JACKSON, Blakedown, Kidderminster.

DOUBLE WHITE ROCKET (Hesperis matronalis albo-plena).—True, strong plants of this scarce and valuable Hardy Flower can now be supplied at 9s. per dozen. Orders for 1 dozen upwards. Carriage paid. Price for large quantities on application to
FREDERICK FOREMAN, Eskbank Nursery, Dalkeith, N.B.

JOHN MOOY begs to inform his Friends that he has arrived as usual with a good selection of DUTCH FLOWER ROOTS. All Orders shall receive his prompt attention. CATALOGUES free on application.
29, Wellington Street, Strand, London, W.C.

W. W. JOHNSON AND SON, SEED GROWERS AND MERCHANTS, Boston, are now offering their Select Stocks of home-grown SWEDES in variety, at very moderate prices. Terms, stating requirements on application. Seed Warehouse, Bridge Street, Boston.

FOR SALE, a quantity of ASPIDISTRA LURIDA VARIEGATA, fine Plants, averaging four to six leaves, in 48's. CROTONS in variety—interruptum, mutabilis, Earl Derby, and undulatum—for SALE, or will EXCHANGE for DRACÆNA TERMINALIS RUBRA and COOPERI.—MANAGER, Lysouen Gardens, near St. Clear's, Carmarthenshire.

EXCHANGE or SALE, Second-hand Upright Tubular BOILER and WATER BARS, in good condition, for Masterwar FERNS and Diphetos ROSES.
T. WOOD, Rudgeman House, Eastville, Bristol.

WANTED, CUTTINGS of CALCEOLARIA AUREA FLORIBUNDA and GOLDEN GEM. Must be good. State price to
H. TITE, Hampton, Middlesex.

WANTED, large Plants of PALMS, FERNS, ALOCASIAS, ALAMANDAS, DIPLADENIAS, BOUGAINVILLEAS, DRACÆNAS, Trained Pyramid AZALEAS, and CAMELLIAS. Please state kinds, size, and price.
W. ALLEN, The Gardens, Swallowfield, Reading, Berks.

WANTED, AT ONCE, large quantities of SHRUBS:—PRIVET, 3 to 7 feet high; EUONYMUS, AUCUBAS, LAURELS, IVIES, MAYS, Red, 7 to 9 feet high; LABURNUMS, and ASH, Variegated. Prices and Samples to
WM. WILLETT, Strathray Gardens, Lancaster Road, Hampstead, N.W.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., REQUIRE a quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, Choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM. ACCOUNT SALES sent daily, and CHEQUES forwarded weekly. BANKERS and TRADE REFERENCES. BASKETS and LABELS supplied.

Floral Commission Agency
A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of choice CUT FLOWERS in any quantity. A. Hill having had a large personal experience as Salesman in Covent Garden Flower Market for many years, is thus enabled to obtain the Highest Market Prices. Account Sales sent daily. Bankers and good Trade references. All Consignments to be addressed as above. Boxes, baskets, and labels supplied.

Telegrams.
F. & A. DICKSON & SONS, The Queen's Seedsmen, Chester, have Registered "RELIANCE" (part of their Trade Mark) as their Address for Telegrams from any part of the World. Telephone Communication with all departments of their business. Address "RELIANCE, CHESTER."

Sixpenny Telegrams.
CARTER, LONDON, has been the Registered Telegram and Cable Address of James Carter & Co. for many years, and all communications addressed to Carter, London, by this means are delivered to James Carter & Co., ensuring best attention.
237 and 238, High Holborn, London, W.C.

The Sixpenny Telegrams on and after October 1
PETER LAWSON AND SON (Limited), Edinburgh, respectfully inform Correspondents that their Registered address for Telegrams from all parts is "LAWSONS, EDINBURGH."

Sixpenny Telegrams
TO COMMENCE 1ST OCTOBER.
WAITE, NASH, AND CO., WHOLESALE SEED MERCHANTS, have Registered "WAITE, LONDON," as their Address for Telegrams from any part of the World. Prompt attention will be given to all Orders forwarded by this means. 79, Southwark Street, London, S.E.

DUTCH FLOWERING BULBS.—HYACINTHS, TULIPS, CROCUS, &c. Priced Descriptive CATALOGUE post-free on application.
IRELAND AND THOMSON, Seedsmen and Nurserymen, 20, Waterloo Place, Edinburgh.

PAUL'S NURSERIES, Waltham Cross, Herts (entrance from Waltham Cross Station). — Purchasers of ROSES, FRUIT TREES, ORNAMENTAL TREES, EVERGREENS, BULBS, &c., are invited, before purchasing, to inspect the stock at the Waltham Cross Nurseries, half an hour from London, Great Eastern Railway. Priced CATALOGUES free. WM. PAUL AND SON, Waltham Cross.

GREEN HOLLIES.—The present is the most favourable time for transplanting Hollies. The Subscribers offer well-rooted stuff:—9 to 12 inches, 12s. per 100, £5 per 1000: 12 to 15 inches, 16s. per 100, £6 per 1000: 15 to 18 inches, 20s. per 100; £8 per 1000; 1½ to 2 feet, 5os. per 100.
JOHN JEFFRIES AND SON, Royal Nurseries, Cirencester.

Ornamental Plant Nursery.
JULES DE COCK, Ghent, Belgium, offers to the Trade:—AZALEAS INDICA, MOLLIS, and PONTICA; DEUTZIA, CAMELLIA, FERNS, PALMS, and SPIRÆA JAPONICA, in large quantities.
CATALOGUE free on application.

OUR GENERAL BULB LIST, No. 77, is now in the Press. Send for a copy.
NEW PLANT AND BULB COMPANY, Colchester.

MAIDENHAIR FERNS.—Good stuff, in thumbs, fit for 48's, 16s. per 100, or £5 per 1000.
J. CRISP, Wellbrook Nursery, Farnborough, Kent.

WHOLESALE BULB CATALOGUE.—The above is now ready, and may be had on application. It has been posted to all our Customers; any not having received a Copy will oblige by letting us know. Please compare our Prices before sending your Orders abroad.
WATKINS AND SIMPSON, Seed and Bulb Merchants, 13, Exeter Street, Strand, W.C.

AURICULA.—Plants of the best Winning Show Varieties to dispose of from the surplus stock of EDWARD POHLMAN, Parkinson Lane, Halifax.

J. R. ENTWISTLE is now Booking Orders for GOLDEN ELDERS, 4 feet × 4 feet, handsome plants, 30s. per 100; 2 to 3 feet, 16s. per 100, on Rail. Trade price on application.
The Nurseries, Stalybridge, near Manchester.

50,000 Ferns for Sale.
ADIANTUM CUNEATUM, in thumbs, 18s. per 100, £8 per 1000; other sorts, in thumbs, £8 per 1000; from boxes, £3 per 1000. Post-office Orders payable Church Street. Cash with order.
W. SMITH, Dockyard Station Nursery, Woolwich.

FOR SALE, a Collection of Fruiting and Succession Pines, clean, healthy Plants of the following kinds:—Smooth Cayenne, Black Jamaica, C. Rothschild, Prince Alfred, and Queen. Apply to
AUSTIN AND MCASLAN, 16, Buchanan Street, Glasgow.

ADIANTUM CUNEATUM.—Strong Plants from boxes, fit for small pots, 6s. 6d. per 100. £3 per 1000; sample of fifty free for 4s. Strong Plants in small pots, 16s. per 100. Cash with order.
G. ADCOCK, Florist, Rokbey Road, Brockley, S.E.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

STRAWBERRIES.—The New Earliest, "Pauline," First-class Certificate, Royal Horticultural Society, and all the best sorts, in small pots, or as transplanted Runners.
PAUL AND SON, The "Old" Nurseries, Cheshunt, N.

## SALES BY AUCTION.

### Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'clock precisely each day, about 800 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, in excellent quality and lotted to suit the Trade and Private Buyers.

On view mornings of Sale, and Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B. The Sale on THURSDAY NEXT will include a quantity of TERRA COTTA POTS and VASES.

### Whetstone, N.

Four minutes' walk from Totteridge Station.

IMPORTANT CLEARANCE SALE of PLANTS, LIVE and DEAD STOCK, HAY, UTENSILS and EFFECTS, by order of Messrs. W. Davis & Son, without the slightest reserve. To commence punctually at 11 o'Clock, owing to the large number of Lots.

MESSRS. PROTHEROE AND MORRIS (having sold the Freehold Estate) are favoured with instructions to SELL by AUCTION on the Premises, the New Lodge Nurseries, Whetstone, N., on TUESDAY next, September 29, at 11 o'Clock punctually, the whole of the well-grown GREENHOUSE PLANTS, consisting of 4000 Pelargoniums, 10 0 double scarlet Geraniums, 2000 Hydrangeas, 400 large white Chrysanthemums, in No. 4 pots, Princess of Teck and Elaine; 100 grand Specimen Camellias, in tubs and planted out, principally white, and producing annually an immense quantity of bloom; several smaller plants in pots; 500 Pot Vines, of the best sorts; the whole of the UTENSILS in TRADE; four young, active, and powerful Cart HORSES; four capital market VANS, five manure CARTS, water CARTS, fourteen HEIFERS, Ayrshire COW in calf, eleven Berkshire PIGS, Stack of Prime Meadow HAY fifty loads of MANURE, quantity of two and three light BOXES, STRAW, CORN-BINS, BARRELS, POTS, BASKETS, and numerous other effects applicable to a Market Gardener and Nurseryman.

May now be viewed. Catalogues may be had on the Premises, at the principal local Inns, and of the Auctioneers, Valuers, and Estate Agents, 67 and 68, Cheapside, London, E.C.

### 100 Specimen Camellias.

IMPORTANT to CUT FLOWER and MARKET GROWERS.

MESSRS. PROTHEROE AND MORRIS beg to call attention to the above in the SALE at the New Lodge Nurseries, Whetstone, on TUESDAY NEXT. The plants are in fine health, in pots and in the ground; they are principally Double Whites, and have produced annually immense quantities of blooms.

Catalogues at 67 and 68, Cheapside, E.C.

### Tuesday Next.

ORCHIDS in FLOWER and ESTABLISHED.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, September 29, at half-past 12 o'Clock precisely, a quantity of ORCHIDS in flower and in bud from various collections, among which will be found:—

Cypripedium calurum, new hybrid.
Vanda Lowii, superb specimen, 4 feet high,
Elophia guineensis, very rare,
Odontoglossum Andersonianum, true.
,, luteo-purpureum.
,, Krameri.
,, Ruckerianum
Laelia elegans, extra fine.
Oncidium lanceanum.
Cattleya labiata, true autumn variety
,, Perrini rivea.
Cœlogyne Massangeana.
Cypripedium Ashburtonia ex-imium.
Dendrobium Johannis, twenty-four plants.
Phalænopsis violacea.

Also a very fine lot of ESTABLISHED ORCHIDS, including Cypripedium vexillarium, Odontoglossum polyanthum, O. prentans, Oncidium Jonesianum, and many other valuable species; also an importation of Sophronites grandiflora, &c.

On view morning of Sale, and Catalogues had.

### Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 2, at half-past 12 o'Clock precisely, importations of the following valuable ORCHIDS, in first-class condition:—Cypripedium Stonei, C. Lowi, Calanthe vestita oculata gigantea, C. veratrifolia, Cattleya superba, C. luteola, C. Dowiana, Cœlogyne pandurata, Oncidium Marshallianum, Phalænopsis grandiflora, Sacco labium Henderson-anum, Vanda Hookeri, Zygopetalum Gautieri, and many others; also in flower Angræcum Leonis, and Odontoglossum Insleayi, fine varieties.

On view morning of Sale, and Catalogues had.

### Cypripedium treapeanum.

A most beautiful large-flowered gold-yellow Cypripedium from Mexico. A few good plants will be offered.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on FRIDAY NEXT, by order of Mr. F. Sander.

### Lower Norwood, S.E.

TENTH ANNUAL SALE of CHOICE ESTABLISHED ORCHIDS, STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. James to SELL by AUCTION, on the Premises, The Castle Nursery, Lower Norwood, S.E., near the Station, on WEDNESDAY, October 7, at 12 o'Clock precisely, a selection of about 150 lots of beautifully-grown ESTABLISHED ORCHIDS, clean healthy plants, including a very fine lot of Odontoglossums, Masdevallias, Cattleyas, Phalænopsis, Oncidiums, Cypripediums, Dendrobiums, and others; and amongst which will be found several rare and valuable species; an assortment of STOVE and GREENHOUSE PLANTS, specimen CAMELLIAS, AZALEAS and FERNS, LAPAGERIAS, STEPHANOTIS, CROTONS, DRACÆNAS, and a variety of ORNAMENTAL TREES and SHRUBS.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### Wednesday Next.—(Sale No. 6978.)

CONSIGNMENT of PLANTS from HOLLAND.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, September 30, a consignment of well grown specimen CUPRESSUS, RETINOSPORAS, THUIOPSIS, RHODODENDRONS, and other PLANTS from Holland.

On view morning of Sale, and Catalogues had.

### Orchids in Flower.

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 14, and he will be glad if Gentlemen desirous of entering Plants for this Sale will please send particulars of same as soon as possible.

### Valuable Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 15, at half-past 12 o'Clock precisely, the COLLECTION of ESTABLISHED ORCHIDS formed by the late Frederick Collins Wilson, Esq., of Waltham Cross, including two good plants of the true autumn-flowering Cattleya labiata, C. Mendelii, fine variety; Angræcum sesquipedale, C. Sicerianum, three growths; C. caudatum, and C. roseum; Vanda tricolor, V. suavis, Phalænopsis of sorts, Odontoglossums, Oncidiums, Phalænopsis, &c.

On view morning of Sale, and Catalogues had.

### Highfield Nurseries, Matlock, Derbyshire.

To Noblemen, Gentlemen, Nurserymen, and Others.
HIGHLY IMPORTANT AND ATTRACTIVE SALE OF NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. J. J. Marriott, who is giving up a portion of his ground, to SELL by AUCTION, without reserve, on MONDAY, TUESDAY, and WEDNESDAY, September 28, 29, and 30, the whole of the very Superior Stock of the above-named ground, all in the best possible condition for removal, including large quantities of ROTUNDIFOLIA, CAUCASICUM, LATIFOLIA, COLCHIC, and other LAURELS; extra strong oval-leaved PRIVET; a choice collection of Variegated and Green HOLLIES; CUPRESSUS, RETINOSPORAS, ARAUCARIAS, and ARBOR-VITÆS; choice named RHODODENDRONS, Tree PÆONIES, 12,000 Transplanted Seedling RHODODENDRONS from the finest named sorts, and 30,000 from hybrids; 3000 ROSES on their own roots, in choicest variety; a very select collection of Herbaceous PÆONIES in strong flowering plants; 40,000 transplanted LARCH, clean, stout, and well-rooted; extra good PINUS AUSTRIACA, &c.

Particulars of which are given in Catalogues, to be had one week prior to the Sale, from Mr. MARRIOTT, Lime Villa, Walsall, or the Auctioneers, Matlock Bridge.

Messrs. ELSE & SON desire to call special attention to this Sale, the stock to be offered being of unusually good quality, particularly worthy of the notice of THE TRADE as well as PRIVATE BUYERS, there being nothing old or over-grown, or spoiled by over-crowding.

### Saloon, People's Hotel, Harrogate.

MESSRS. RENTON AND RENTON will SELL by AUCTION, on TUESDAY, September 29, at half-past 12 o'Clock prompt, under instructions from Mr. Linskill, a fine and valuable Collection of STOVE PLANTS, EXOTIC FERNS, GREENHOUSE PLANTS, &c., specially selected for the Florist's Business, and embracing rare specimens of important varieties well worthy the attention of Gentlemen's Gardeners and the Trade generally.

Catalogues, free of charge, from Mr. LINSKILL, Harrogate; or the Auctioneers.—Offices, Albert Street, Harrogate.

### Waltham Cross, Herts.

(On the Great Eastern Railway. 11 miles from London.)

CATALOGUE of portion of Mr. Tudgey's valuable and well-known COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, including well-grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnocomas, Dracophyllums, Stephanotis, 500 Adiantum cuneatum, Grantas, 200 Dracænas Weddelliana in 48-inch pots, Allamandas, Clerodendrons, Francisceas, Rondeletias, specimen Palms, Anthuriums, Crotons, 300 Araucaria Cooperii in 4-inch pots, &c. Also a quantity of Hardwood Heaths and Palms, in 4-inch and 6-inch pots, and Exhibition Plant VAN in good repair.

MR. TYDEMAN will SELL the above by AUCTION, at the Exotic Nurseries, Waltham Cross, on TUESDAY, October 6, at 12 o'Clock.

May be viewed the day previous and morning of Sale, and Catalogues obtained of Mr. E. TUDGEY, Exotic Nurseries, Waltham Cross; or of Mr. J. TYDEMAN, Auctioneer, Valuer, and Estate Agent, Waltham Cross, Herts.

### Tansley Nurseries, near Matlock, Derbyshire.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, and OTHERS.

MR. GEORGE MARSDEN respectfully announces that, in consequence of the termination of the tenancy of a portion of the Nursery Land, he is again instructed by Messrs. Samuel & James Smith, to SELL by AUCTION, at the Nurseries, as above, on WEDNESDAY and THURSDAY, October 8 and 9, commencing punctually at 11 o'Clock each day, a portion of their choice and highly valuable NURSERY STOCK, consisting of about 8000 transplanted Rhododendrons, named varieties, of the choicest specimens, growth, and quality; 800,000 pont cum Rhododendrons and common hybrids; Cupressus, Ivies, and Laurels; immense quantities of Retinospora plumosa, obtusa compacta and aurea, in sizes suitable to all purposes; Cedrus Deodara and atlantica, Azaleas, Whins, Privet, &c.; 7000 Andromeda flribunda, Golden Yews, Gold, Silver, and Green Hollies; about 40,000 New Golden Elders, Berberis and Pinus austriaca, in good condition; Oak, Scotch Beech, Italian and Ontario Poplars, and other Forest Trees in great variety and quantity.

Catalogues can be had on application to Messrs. SAMUEL AND JAMES SMITH, Tansley Nurseries, Matlock; or the Auctioneer, Wirksworth.

### Mid-Surrey Nurseries,

Adjoining the Railway Station, Sutton, Surrey.

CLEARANCE SALE, the Proprietor not having room to keep the plants for the winter, consisting of 150 AZALEAS and CAMELLIAS, specimen, half specimen, and smaller plants, CHRYSANTHEMUMS, CLEMATIS, IVIES, LONICERAS, PASSIFLORAS, and other CLIMBERS, FERNS, PALMS, Foliage Plants, &c.; 600 Standard and Dwarf ROSES in pots, including fine plants of Maréchal Niel. Also well grown LARCHES, LIMES, POPLARS, EVERGREENS, ALMONDS, Scarlet THORNS, &c. Fine ASPARAGUS and SEAKALE Plants. A lot of ROCKERY and BURRS for Ferneries, and SAND for Building purposes.

MR. MORGAN is instructed to SELL the above by AUCTION, on the Premises as above, and on the Ground, West end of Grove Road, Sutton, on THURSDAY, October 8, at 1 for 2 o'Clock.

Catalogues had of the Auctioneer, Sutton, or at The Nurseries.

### Edinburgh.

Drummond Brothers having resolved to give up the Florist and Nursery branch of their business,

MR. ALEXANDER DOWELL will SELL by AUCTION, at Larkfield Nursery, Ferry Road, Edinburgh, on WEDNESDAY and THURSDAY, October 7 and 8, at 12 o'Clock each day, a very fine lot of HOLLIES, YEWS, AUCUBAS, RHODODENDRONS, WEEPING TREES &c., mostly suitable for immediate effect.

Now on view. Catalogues to be had from DRUMMOND BROTHERS, Agricultural Seedsmen, 82, George Street Edinburgh.

### To Nurserymen.

TO BE SOLD, the Old-established NURSERY BUSINESS of Mr. William Hounslow, of Ringwood, which was established in 1800, and has been successfully carried on by the family to the present time, old age being the sole reason for retiring from the same. The Nurseries are admirably adapted for growing Seedlings of all descriptions, and contain about 7 acres. The stock consists of Forest Trees, Conifers, Flowering Shrubs, and American Plants, to be taken at valuation. The Nurseries are within 100 yards of the Railway Station, thus offering a rare opportunity for an enterprising man, as the business can be greatly increased.

For further particulars, and to view, apply to F. AYLES, Auctioneer, Ringwood.

N.B.—In case the Business should not be disposed of, the ANNUAL SALE will take place EARLY IN NOVEMBER, of which due notice will be given.

### California

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

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In a prominent position, good locality. Capital opening for a beginner.

WELL ESTABLISHED NURSERY—an Acre of Ground, fine Greenhouse. Lease forty-two years. Rent only £—. No Stock.

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TO BE LET, with Immediate Possession, and at a moderate rent, the whole or a part of the HOME NURSERY late in the occupation of Mr. George Wheeler, comprising about 2½ acres, all walled-in, with detached Residence, Seed Shop, Coach-houses, Stabling, Sheds, Greenhouses, Ranges of Pits, &c. The above is a good chance for a persevering young man.

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### To Landed Proprietors, &c.

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

### WILLIAM CLAPHAM,

SHAW HEATH, STOCKPORT,

*LANDSCAPE GARDENER and ROCK ARTIST.*

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Albans, where work can be seen.

Turfs formation, Sandstone, and other local rocks made natural.

GOOD BULBS for SUPPLYING CUT FLOWERS:—
EUCHARIS SANDERII.
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The last-named, a beautiful new kind, offered for the first time. Price per dozen or hundred on application to

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"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s. BARR AND SON, King Street, Covent Garden, W.C.

### To Nurserymen, Seedsmen, and Florists.

DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C. Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

SUTTON'S BULB CATALOGUE, containing prices and full particulars of the Best Bulbs, gratis and post-free on application.

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SUTTON'S BULB CATALOGUE, containing Articles on the Culture of Anemones, Ranunculus, &c., gratis and post-free on application.

SUTTON AND SONS, Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales, Reading.



B. S. WILLIAMS'
Improved Mushroom Spawn
per bushel of 14 cakes 5s.
Per cake, 6d.; per cake, free by Parcel Post, 1s.
For Outdoor and Indoor Culture.
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Upper Holloway, London, N.

DUTCH BULBS.
*DIRECT FROM THE GROWERS.*

ANT. ROOZEN & SON'S
CHOICE FLOWER ROOTS.

OUR GUINEA PACKAGES
Of CHOICE HARDY FLOWER-ROOTS for Indoor and Spring Gardening have been much enlarged, and contain as under:

COLLECTION "F," FOR SPRING GARDENING, Containing 900 Bulbs.

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| 36 Hyacinths, distinct colours. | 400 Crocus, in 4 distinct colours |
| 50 Tulips, single early. | 50 Ranunculus, double. |
| 50 Tulips, double. | 36 Gladiolus. |
| 25 Tulips, single late. | 50 Snowdrops, sing'e. |
| 50 Narcissus, Polyanthus. | 25 Spanish Iris. |
| 30 Narcissus, incomparabilis. | 25 Triteleia uniflora. |
| 25 Narcissus, Posticus. | 25 Scilla hyacinthoides. |
| 50 Anemones, double. | 4 Lilium umbellatum. |

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| Hyacinths, 18 in 18 splendid named varieties. | Narcissus, double and single—12 in 4 named varieties. |
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| Tulips, single early— | 6 double, sweet-scented. |
| 12 in 4 fine named varieties. | 6 single, " " |
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| 6 " scarlet. | 12 Choice Ixias. |
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| 6 La Candeur, pure white. | 12 " Oxalis. |
| 6 Rex Rubrorum, fine crim- | 12 Grape Hyacinths. |
| 6 Tournesol. [son. | (H. botryoides). |
| Crocus— | 6 Eranthis Hyemalis. |
| 100 in 10 fine named varieties. | 6 Snowdrops. |
| Narcissus, Polyanthus. | 6 Iris Pavonia. |
| 12 in 4 finest named varieties. | |

HALF OF EITHER OF THE ABOVE FOR 10s. 6d.

The above Packages may be had from our Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., on receipt of Cheque or Post-office Order.

For particulars of our other Collections of Bulbs for INDOOR and SPRING GARDENING, see our complete and revised CATALOGUE for 1885, which will be sent, post-free, on application to our Agents, or ourselves direct.

ANT. ROOZEN AND SON, Nurserymen,
Overveen, near Haarlem, Holland.

To the Trade only.
E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale Catalogue (No. 3703) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1885-86, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out of this specialty. The prices of Hyacinths in general are considerably lower than before. Prices of Tulips and other Bulbs, too, are in many instances inferior to former quotations German and French editions as well as a separate English edition for America, are published.

"Irradiating the Present, Restoring the Past."
A COMPLETE and ORIGINAL "LITTLE BOOK" of DAFFODILS, in its revised form, for 1885. *Price 1s., post-free.* There are numerous original Illustrations, and the Daffodils are the cheapest Bulbs to be got, Ireland being so *genial* to their cultivation. Over 130 sorts to select from. Early planting and early opening of Bulbs should give grand results. Advantages offered by no other House in the Trade.—WM. BAYLOR HARTLAND'S Old Established Seed Warehouse, 24, Patrick Street, Cork.

The New Raspberry.
LORD BEACONSFIELD.
(A Seedling)
The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.
Strong Canes, 4s per 100; 9d per dozen.
Usual allowance to Trade, 5 per cent. discount for prompt cash. Orders are now being booked.
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BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6d. per dozen plants, 12s. per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3d. 6d. per dozen plants, 7s. 6d. per dozen clumps.
Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 1½d., free.
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TO THE TRADE ONLY.
ADIANTUM CUNEATUM, A. PACOTTI, A. DECORUM, A. STRICTUM, LOMARIA GIBBA, LASTREA ARISTATA VARIEGATA, nice Plants, in small pots ready for potting on, 20s. per 100, £9 per 1000.
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ADIANTUM CUNEATUM, fine plants, in 4½ and 5-inch pots, 40s. and 50s. per 100.
The LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, The Vineyard and Nurseries, Garston, Liverpool.

B. GILBERT, Anemone Nursery, Dyke, Bourne, Lincoln, begs to offer the following BULBS, PLANTS, &c.:—
ANEMONE, King of Scarlets, B. G.'s own production, 4s. per dozen, 25s. per 100.
HEPATICAS, Double Red, 5s. per dozen, 30s. per 100.
" Single Blue, 4s. per dozen, 25s. per 100.
VIOLETS, Marie Louise, 4s. per dozen, 25s. per 100.
" Single, Victoria, 3s. per dozen, 20s. per 100.
At the International Exhibition, held at the Alexandra Palace, B. G. was awarded a Medal for Group of Anemones.
Testimonials from all parts are constantly coming in. The following, from Mr. ROBERTS, *Gardener to* Lord Rothschild, *only recently received*:—
"Dear Sir,—I cannot speak too highly of your Anemones. They are superb both in colour and size of flower. I potted a quantity, putting five bulbs in a pot, kept them under glass. In due time they threw up as many as two dozen splendid blooms. They flowered two months sooner than the outdoor ones, and were the admiration of all who saw them.—Yours very truly
"J. ROBERTS."

Autumn Planting.
THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.
The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

FOR SALE, 500 EUCHARIS AMAZONICA, good flowering bulbs, 75s. per 100. GERANIUM CUTTINGS, "CANDIDISSIMA ALBA PLENA," the finest Double White Geranium for cutting purposes, 8s. per 100; all other leading varieties, 7s. per 100. VIOLAS, all leading varieties and colours, 16s. per 100.
W. MILES, West Brighton Nurseries, Hove

New Catalogues.
CHARLES TURNER'S New and Descriptive CATALOGUES for the season are now ready, and may be had post-free on application, viz:—
A CATALOGUE of DUTCH and other BULBS.
A CATALOGUE of ROSES, FRUIT TREES, VINES, and all kinds of HARDY TREES and SHRUBS.
A CATALOGUE of CARNATIONS, PICOTEES, and PINKS.
The Royal Nurseries, Slough.

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THE LIVERPOOL HORTICULTURAL CO. (John Cowan) Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Price and full particulars on application to the Company,
The Vineyard and Nurseries, Garston, near Liverpool.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited
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CINERARIAS and PRIMULAS.—Finest Covent Garden strain, extra strong Plants, from 60-pots, 1s. 6d per dozen, 10s. per 100, in equal quantities of each.
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GRAPE VINES, FIGS, PEACHES, &c.
Well-trained trees for walls, with fibrous roots, from Osborn's stock.
The choicest ROSES. SEAKALE for Forcing.
Inspection invited.
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GREAT SPECIALTY—FRUIT TREES, carefully trained, very strong, in full bearing.
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Strong, healthy, and well-rooted.
Sample of Plants, 3d. Price LIST free.
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CLEARANCE SALE.
FERNS, in thumbs, 10s. per 100.
Also Stock specially suited for a London Cut Flower Trade, with the Greenhouses and Hot-water Pipes.
*Inspection and offers solicited. The land required for building.*
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CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by Parcel Post, 1s.
None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
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FRUIT TREES
A large and healthy Stock of all kinds to select from.

CORDON FRUIT TREES
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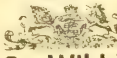
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*CATALOGUES post-free.*

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200,000 DIRECT FROM HOLLAND.
Very Cheap LIST, with interesting Pamphlet on Growing Bulbs, free on application. HYACINTHS, from 7s. 6d per 100; TULIPS, from 2s. 100; CROCUS, from 1s. 100; NARCISSUS, from 2s. 100. Liberal Discount to Large Buyers
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Splendid Seeds and Bulbs at low prices
The Covent Garden Seed Warehouse
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Autumn and Winter-flowering Plants.



## B. S. WILLIAMS

Begs to announce that in consequence of the hot summer his stock of the above is remarkably fine this year, and well set for flower. Early Orders are solicited for the following, which are now ready for delivery :—

AZALEA INDICA, in variety.
MOLLIS, seedlings and named sorts.
BOUVARDIAS, leading kinds.
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LILACS, Chas. X., and other leading sorts.
PRIMULAS SINENSIS ALBA-PLENA.
double, leading kinds.
RHODODENDRONS, of sorts.
SOLANUMS, Williams' hybrid.
STAPHYLEA COLCHICA.

For complete List and Prices, see
*ILLUSTRATED BULB CATALOGUE*,
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VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

RASPBERRY,
*BAUMFORTH'S SEEDLING*
TRANSPLANTED CANES.

## EDMUND PHILIP DIXON

Is now booking orders for above for delivery as soon as ready.

**Planting Canes** .. .. **17s. 6d. per 100.**
**Fruiting Canes** .. .. **25s.** ,,
*Price to the Trade on application.*

THE YORKSHIRE SEED ESTABLISHMENT, HULL.

## BULB GUIDES.

These most interesting and instructive Catalogues are Now Ready, and may be had gratuitously upon application.

**Part 1** consists of HYACINTHS, TULIPS, CROCUS, and a most complete LIST of MISCELLANEOUS BULBS.

**Part 2** consists exclusively of LILIES and NARCISSUS, and includes every variety worthy of cultivation all of which are fully described.

## THOMAS S. WARE,

Hale Farm Nurseries,
TOTTENHAM, LONDON.

## FLOWERING PLANTS

For **AUTUMN** and **WINTER.**

*STRONG, HEALTHY, and FULL of BLOOM.*

**Acacias**, 18s. to 30s. per dozen.
**Azalea indica**, 18s. to 60s. per dozen.
**Bouvardias**, distinct, Singles and Doubles, 15s. per dozen.
**Camellias**, 30s. to 60s. per dozen.
**Cyclamen persicum** (Smith's superb strain), full of buds, 5-inch pots, 18s. per dozen.
**Cytisus**, 12s. to 18s. per dozen.
**Epacris**, best sorts, 18s. to 30s. per dozen.
**Ericas, hyemalis, Wilmoreana, caffra, gracilis, autumnalis, &c**, 6-inch pots, 18s. to 30s. per dozen.
**Gardenias**, 18s. to 30s. per dozen.
**Lapageria alba**, 7s. 6d. to 42s. each.
**Lapageria rosea** 2s. 6d. to 5s. each.
**Libonia penrhosiana**, 12s. to 18s. per dozen.
**Pimeleas**, very fine, 3 s per dozen.
**Primulas**, best Double, named, 30s to 42s. per dozen.
**Primulas**, Double White and Purple, 18s. per dozen.
**Tree Carnations**, 5-inch pots, 24s. to 30s. per dozen.

**Orange, sinensis** (in fruit), 2s 6d each.
**Greenhouse Climbers**, in variety, 18s. to 30s per dozen.
**Grevillea robusta**, 5-inch pots, 12s. to 18s. per dozen.
**Ferns, Maidenhair, &c.**, in great variety : also

**STOVE and GREENHOUSE PLANTS.**
*DESCRIPTIVE LIST FREE.*

Selections from above may be made at dozen prices.
The plants are remarkably fine and cheap.

## RICHARD SMITH & CO.,

NURSERYMEN and SEED MERCHANTS,
WORCESTER.

## "WILSON JUNR." BLACKBERRY.

TO OUR PATRONS. Leicester, Sept. 18, 1885.

**IN A CIRCULAR** issued to the Trade on the 5th inst., we intimated that our Mr. Viccars Collyer—now in America—has been informed by the raiser of this magnificent variety (from whom our stock has been secured), *"that it has come to his knowledge that some American houses having purchased a few hundreds of his stock are sending out Wilson's Early (with a few 'Wilson Junr' mixed as Wilson Junr. (true) representing their stock as coming from him,"* and offering same at a much cheaper rate than Wilson Junr. could possibly be sold.

**IN CASE** any of these should have found their way to this country we, in duty to our patrons as well as ourselves, issue this preliminary notice.

**TO TEST THESE** so-called Wilson Junr. (true) Mr. Collyer has purchased a few represented as such at a much cheaper rate than he has paid for the raiser's stock, so that if there should be any who are willing to run the risk (or would like to compare) they can have them at the reduced price as paid, and as quoted below. These we are calling stock No. 2.

**IN EVERY CASE** unless, of course, instructed to the contrary, we shall execute all orders from the raiser's own stock—viz., No. 1

The stocks to all intending purchasers will therefore be offered as follows :—

**STOCK NO. 1.** This constitutes what we *know* to be the true stock, and which was secured upon the very ground of the raiser. Our patrons may therefore purchase *these* without any risk whatever. Price, 1s. 3d. each, 12s. per dozen, £3 3s. per 100. Special price per 1000

**STOCK NO. 2.** This is the stock bought elsewhere at a lower price and *represented* to be Wilson Junr. (true), but which, of course, after the raiser's warning, we certainly do not recommend : these are kindly offered at the lower price now asked—viz., 1s each, 10s. per dozen, 75s per 100.

**PLANTS WILL BE READY** about end of October, but we would solicit your order immediately if possible, and thereby ensure early delivery and first-class canes.

**WE SHALL BE PLEASED** to furnish, gratis and post-free, upon application, a large illustration (taken from a photograph) of this magnificent fruit

Owing to our central position and special tariff arrangements, we are enabled to forward all orders carriage paid to any part of the United Kingdom. Assuring you that all orders entrusted to us shall command our very best care and prompt attention,—We remain, Yours obediently,

## VICCARS COLLYER & CO.,

**Central Hall, Leicester**

(where all Letters are to be addressed) ;
and CENTRAL NURSERIES, GLENFIELD, near LEICESTER.

*A. W. CREWS, Manager.*

The Grand New Narcissus.
"SIR WATKIN."
2s. each, 21s. per dozen, 160s. per 100.
The largest and finest known. First-class Certificate Royal Horticultural Society.
Descriptive CATALOGUE post-free. Plant at once.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

CLAPTON NURSERY, LONDON, E.
Bush Hill Park Nursery, Enfield, N.

At the above-named Nurseries are cultivated, in unusually large quantities, Azaleas, Bouvardias, Camellias, Climbing Plants, Cyclamen, Epacris, Ericas, Ferns, Ficus, Flowering and Decorative Plants in variety ; Fruit Trees, Gardenias, Genistas, Grape Vines, Greenhouse Plants in variety ; Palms, Pelargoniums, Rhododendrons, Roses, Shrubs, Stove Plants in variety, &c.
ORCHIDS A SPECIALTY.—The stock at the Clapton Nursery is of such magnitude that without seeing it, it is not easy to form an adequate conception of its unprecedented extent.
The Glass Structures cover an area of **246,000** feet superficial.

HUGH LOW & CO.
cordially invite Gentlemen interested in Horticulture to inspect the Nurseries.

## STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 1½s per 12 ; ditto in large pots, 2½s. per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

## CHOICE IMPORTED DUTCH BULBS.

**JARMAN'S No. 6 COLLECTION**
contains 1000 selected and assorted Bulbs, for Indoor and Out-of-door combined. Price 21s. cash. Package and Carriage Free. Others at 6s. 6d. to £4 4s.

**ROSES**, 9s. per dozen. A big stock and fine Plants.

*Send for large Descriptive LIST of Bulbs, Roses, Plants, Seeds, &c., to*

## E. J. JARMAN,

The People's Seedsman,
CHARD SOMERSETSHIRE.

## DANIELS' CHOICE FLOWER-ROOTS

WE offer an immense assortment of Choice Flower Roots, including all the finest and best varieties of HYACINTHS, TULIPS, NARCISSI, LILIES, GLADIOLI, CROCUS, IRISES, ANEMONES, &c, all at the most moderate prices.

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IN COLLECTIONS—CARRIAGE FREE.

FOR OUTDOOR DECORATION.

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FOR GREENHOUSE OR CONSERVATORY.

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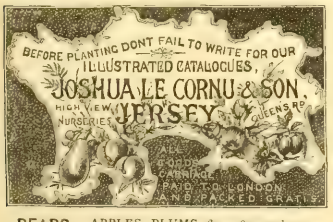
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THE

# Gardeners' Chronicle.

*SATURDAY, SEPTEMBER 26, 1885.*

## MONTSERRAT.

IF mortals were allowed to make their own heaven in their own way, Montserrat would be mine. Pardon, courteous reader, this egoistical sentence; it shall be the only one. The present Viceroy of Ireland, who visited this fairy dwelling when it was left to crumble into ruin by "Vathek" Beckford, says, in the record of his travels, that the view of forest scenery to be obtained from the library window transcends the power of the imagination. The ridge of Our Lady of Montserrat was also the the vantage point from which Byron wrote his well-known description of Cintra, beginning, "Lo Cintra's glorious Eden intervenes." The property, before having the extreme good fortune to be purchased by Mr. Francis Cook, of St. Paul's Churchyard, belonged to the noble and chivalrous Portuguese family of De Castro. Romance is introduced into the history of their ownership from the three frustrated efforts which were made in the wane of last century by the Governor of Goa to reach his hereditary property. Governors of provinces have, ever since the days of ancient Rome, been too often under suspicion rather than above it. But this De Castro, like his celebrated ancestor, Don John, was *sans reproche*. He thought to return home to Montserrat, there to finish his course. But the Lord of sea and land willed otherwise. A lease of the property for twenty years was taken by a rich Brazilian diamond merchant, named De Visme. It was not the wish of the Lisbon Court that both the man and his money should leave their fair realm. He built a house on the site of the present one, taking down the chapel of Our Lady of Montserrat, and rebuilding it hard by, on the side of the serra. Beckford, travelling in Portugal, was so struck with admiration, when he saw the matchless position of the house and its grand scenic environment, that he took on the lease from the Brazilian merchant. He planned and altered in his usual infinite style, and left an undying monument of his sojourn in the waterfall which he constructed out of a mountain stream. Disgusted when he found the absent owner steadfast in his refusal to sell, be the offer never so tempting, he thrust from his mind all future interest in the place, and returned to England and built Fonthill. The date of Byron's visit was 1810, and the date of the purchase of the property by Mr. Cook 1855.

Mr. Cook, who has travelled far and wide, unhesitatingly declares that his present home is the only place that ever tempted him to follow the pursuit of gardening out of England. He saw from the outset what the delight of it would be in such a temperature, how wide a scope for variety in vegetation he would have at his feet, and what the possibilities were, in such a position, to a landscape gardener who was a child of Nature, not of art. In De Visme's tenure, when the prospect, from whatever then took the place of the south portico, had for a foreground Orange quintas or gardens, such as may be seen occupying the land that trends downward from the

neighbouring villa of the Duke of Cadabal, there was no doubt much that was beautiful; but to see the same foreground now, one would say that it could only have been beautiful on the principle of *bene qui latet, bene vivit.* There can be few, if any, places that have had the same thought bestowed upon them as Montserrat. Its owner resides here in November (one of the best months to visit Portugal), the greater part of April and June, and the whole of May. During this period he gives his whole mind up to his estate. It seems perfect, but in his eyes there is often some little detail or arrangement that is faulty or which might be improved, however flawless and harmonious it may seem to others. Such and such a tree has outgrown the limits that can be given it, or something in its rear has developed unthought of beauties. Though that tree may have been very dear in the past, yet it must go. In fact, to the amateur, who is worthy of the name, there is no end to the improvements he may learn from the contemplation of his garden. Fresh sensations accompany each day, all momentary, may be; but not a week passes without Nature affording something to be written away in the mind's diary. Again, Mr. Cook is always adding to his stock of plants; at first he planted at a venture, now he knows pretty well what the winds and his other enemies will allow him to grow. Palms and Cycads are mingled with the singular vegetation of Mexico. Tree Ferns elbow Camellias, Ipomœas and Bougainvilleas cover entire walls, and Tacsonias overpower tall trees with their rank luxuriance. If the expression may be allowed for the nonce, the valley between the *palacio* and the dense wooded slopes of the serra may well be called by English tongues a vast open-air greenhouse.

Vegetation in Portugal seems to increase in dimensions almost with tropical celerity. Mr. Crawford, in his *Portugal, Old and New*, effectually disposes of the oft-repeated statement that this staunch little kingdom is behind the rest of Europe. He shows how the people are animated with as fine a sense of patriotism, and uprightness in their social relations, as other nations. And to-day the people are under as equable a government, both for the individual and the state, as any other European nation. It is as well, perhaps, that they do not see the need of hurry and break-neck competition. Their land will produce the same crops year after year without steam cultivators; and although their carts, ploughs, and *eiras* (threshing floors) are as simple in construction as those of Roman colonists, there is no agricultural depression. Doubtless with their advantages they ought to be a wealthier nation; but wealth is not happiness. That they are behind the age in botanical pursuits can admit of no question, and it is only recently, owing in great measure to what Mr. Cook, whom the King has made a *visconde*, has done at Montserrat, and men like Comte Fricalho, that thinking men have awoke from their supineness. Eucalypti planted twenty years ago have now matured into imposing trees. Incredible as it may seem, a Cupressus macrocarpa, eleven years planted, has developed at the Villa Pombal (near Montserrat) a girth of 9 feet.

These two examples will explain how Mr. Cook has been able to form in thirty years a garden which anybody ignorant of the rapidity of vegetable growth in this climate would put down as the work of two lifetimes. The climate of South Portugal, given irrigation, is as favourable (or even more so) for the growth of what rare John Parkinson would call "outlandish" flowers, shrubs, and trees as any in Europe. Considering their intercourse with Brazil and India, it is curious that the Portuguese have not made a better use of their opportunities. What can be expected from a people so heedless of sanitary arrangements?—some one will say.

The matter of irrigation is all-important. The lawn is the greatest feature of the English flower garden, and of the grounds surrounding the house. The lawn at Montserrat is said to be the only one in South Portugal, and goes far to form the unique grandeur of the place. It is only maintained by constant irrigation. An excellent system has been devised and carried out. Reservoirs are formed in two or three places on the side of the serra, so as to be fed by the mountain watercourses. The water is conducted thence into the gardens by artificial channels, the tops of the walls being invariably utilised for the purpose. A secondary system of tanks and reservoirs is then formed, from which the shallow courses, so constructed that the water may overflow and trickle over the lawn, are supplied. The stream, which is made to descend by a series of falls through the Valley of the Tree Ferns, and then to flow past the bases of the lawns, is also supplied from an *assez grand reservoir* near the Collares high road. The necessity of irrigation both for the above purpose and for the Orange and Lemon quintas can well be seen by ascending the ramparts of the Moorish castle above quaint and picturesque Cintra. This frowning keep, which, if not so strong as the fortress at Santarem, would yet require a lion-hearted leader like Alfonso Henrique to capture, commands the country northward to Torres Vedras and the Escurial at Mafra (Portugal's Escurial). Even in the early days of May the land seems parched by the torrid glare of the sun.

The view that accompanies this notice (fig. 87, p. 401) is taken on the south side of the *palacio*, from near the brook which hurtles along at the foot of the steep lawn. The ground rises just as sharply on the other side—grass at first, then Cork woods, with a thick undergrowth, locally termed *mata*; afterwards Pine woods, which grow thinner towards the summit of the serra, some 1500 feet above the sea-level. An infinite number of paths and tracks are cut through the *mata*. Very pleasant it is to wander among the lavish profusion of Nature. The Cork trees are lichened and covered with Ferns—each tree from its peculiar ramification a picturesque object. The undergrowth is composed of Arbutus, Laurustinus, the flowers of which here are without any pink flush; Broom—Golden Shower the natives call it; Butcher's Broom, Scrub Oak, Ivy, Periwinkle, Solomon's Seal, and Bracken. Magnificent views over the grounds, or down the vale of the river Varzea to the sea can be obtained at the openings. Its tangled, devious ways are the best offset possible to the orderly *paradisus in sole* below.

> "Our Mata much we love, sith Nature here
> Luxuriant reigneth empress, rules of art
> Waving from her dominions dear
> With smiling gesture."

The ridge on which the *palacio* is standing is formed by the serra thrusting out a huge above-ground root, trending westward on its northern flank, and separated from it by a deep ravine. The rich black mould washed down from the heights and accumulated at the foot, often to a depth of 10 feet, makes this sheltered *cañon* luxuriantly fertile. A path cut off from the grounds by an arch-enwove balustrade of exquisite design surrounds the *palacio*. By following this path an idea is obtained of the extent of the place. The time of my description is the spring, when the May sunshine fondles the May leaves.

From an anticipatory remark the reader will know that the immediate ground on the south is a stretch of greensward deepening to a sinuous brook, and that the opposing acclivity is prolonged to the saw-like peaks of the serra. As seen from our standpoint there are three peaks. Two are massive uprisings of ashen-grey rock, broken up by dark-shadow rifts and projecting points. The third is mound-like, and covered with brown, sage-green and yellowing grasses, varied by bouldery groups of scattered rock. To the right Pine woods venture to the summit, and seem to touch the sky. This is a fair-weather picture, when every object is bathed in sunny radiance. On the morrow, maybe, the whole scene will be changed, and the swirling smoke of cloudland will be drifting rapidly, angry from opposition, along the brow. Turning half-face to the right, the spectator sees the azure glimmer of the restless sea beyond the sandy lowland of Collares, where soon the vineyards will rival the verdurous tints of the protecting Pine woods. Across the valley is a Sweet Chestnut wood protruding its tender leafage from ruddy buds. Such is the background. Slightly to the left, at close quarters, is an aspiring Thuia Lobbii, over 80 feet high—probably the best in Europe. Behind is the dark foliage of a wide-spreading Eugenia latifolia, 30 feet high, and an almost equally tall Metrosideros robusta. The Eugenia is 11 feet in girth at the height of a foot, and is furnished with six large arms and with roots protruding from the branches somewhat like a Banyan.

Immediately in front the lawn slopes down to a group of giant Araucarias (the dimensions of which will be given hereafter), each a model of symmetry—excelsa the antithesis of Bidwilli, in shade of green; above them is a peculiarly graceful Deodar, and beyond, a group of Eucalypts covered with white inflorescence. By the brookside is another Araucaria brasiliensis, with a Mühlenbeckia complexa hiding its straggly growth. Suitable plants, among them Callas, Bamboos, the Papyrus, and Strelitzias, garnish the waterside. To the right a large Cupressus macrocarpa, 17 feet 6 inches in girth at 2 feet up the trunk, spreads out like an ancient Oak—the lower tier of branches are cut away so as to show the willowy foliage of a tall Eucalyptus viminifolia and the ever varying tints of the valley, in April gay by reason of the light purple of the Judas trees, and the scarlet, mauve, and pink of the Rhododendrons.

On the west side of the terrace the limit of the grounds is circumscribed by tall Pinus insignis and Eucalypti, to which there is an easy fall of the lawn. North-eastward the eye is allowed an unrestricted prospect, and follows the meanderings of the river Varzea to Apple Bay, where it delivers Earth's tribute to Oceanus. Although 4 miles off the altitude is such that few of the ever-variant features of the sea are lost. When the Lusitanian sun is high in heaven the arrowy effulgence merges into a violet haze at the junction with the opalescent tints of the ether. The river's course lies through quintas, "teeming with their fruitage golden," and vineyards. The near reaches are lined with Loquats and Oleanders. A varie gated Pittosporum Tobira comes close up to the balustrade with offerings of fair fragrant white flowers. A little farther off, placed so as not to obstruct the view, two graceful and pendulous Cedars of Goa relieve any monotony the lawn might have had on this side in a charming way.

Northward the declivity is abrupt, but still mantled with tree growth, in which everywhere the emerald leafage of the deciduous trees relieves the more sable plumage of the Pines, Corks, and Eucalypti. At the foot of the steep are some Orange and Olive groves, and then the campo rolls away to the famous lines of Torres Vedras, which form the horizon. Scattered over the plain at frequent intervals are the whitewashed houses of the peasantry. Still keeping his ground, but looking eastward, why is the onlooker so entranced? Simply because here he has some of the most perfect woodland and mountain scenery combined that can be seen in Europe. The side of the serra is broken up by deep fissures, and everywhere large masses and pinnacles of lichened rock, with all their pearly-grey tones and silvery tints, peer from among the Corks, Pines, and Goas. This is

only one aspect. To describe the whole adequately, from the tree-embowered villas nestling at the foot, to the airily climbing peaks of the summit, would be impossible. Some idea of the beauty can be formed if the riven nature of the serra's flank, which a slight bend to the northward makes visible, and the great variety of the trees, be considered. Who has not wandered through a Cintra Cork wood has missed one of the fairest boons of Nature.

> "And time-worn Cork tree everywhere
> Wreathes his twisted branches there
> High and hoary.
> Ancient benefactor pure,
> How he nurseth, pleased, secure,
> That living feathery garniture
> Of saucy Ferns that climb his head.
> Fairy sprung, they deck him o'er
> With such wealth of beauty's store,
> That, quite forgot his lengthy reign,
> He smiles in joyous youth again."

The Pena, whilom an old convent, now a regal residence, crowns with its cupolas one of the loftiest points of the serra, the terminal ridge of which is occupied by the ruined Moorish castle. Five or six villas, with their quintas, seem to form steps on the way to it; no wonder Cintra is a popular place wherein to spend the *villegiatura*.

On the east side is the main entrance, which is approached by a broad carriage-drive overarched with trees. From the south-east corner of the terrace there is the best view of Beckford's Falls; from the highest fall to the foot of the glen would be a distance of 500 feet. From the *palacio* only the upper series are to be seen. The stream comes out from below two Stone Pines placed among the Cork woods. The water with one bound leaps from a plane of rock into a little tarn, out of which it hurries down a steep rock-hindered course to make another venturous plunge. The crystal rain is seen through the foliage of waving Tree Ferns; a bed of high shrubs and the trees planted to shield the Ferns from the sun, hide the lower fall. It is the fairest scene of this fairyland: anything grander in landscape gardening, either in idea or execution, has not been accomplished. Although the original idea was Beckford's, it was the exquisite taste, loving care, and true sense of beauty of Mr. Cook that has brought about the present incomparable result. *C. A. M. Carmichael.*

(*To be continued.*)

# New Garden Plants.

## CYRTANTHUS HYBRIDA, *N. E. Br n. hyb.*

From Sir Trevor Lawrence I have just received an interesting hybrid raised from seed of Cyrtanthus (Gastronema) sanguineus var. flammeus, fertilised by the pollen of Vallota purpurea. In habit the plant very much resembles Vallota purpurea, the leaves, however, are rather narrower and slightly more acute. The umbels are several-flowered (6-flowered in the plant seen), the flowers are like those of Vallota except that the perianth-tube is bent forward and rather abruptly dilated in the throat, instead of being erect and funnel-shaped, and the segments are rather narrower, but are not revolute, as in the seed-producing parent. The stamens are short, not exserted beyond the tube, and the upper ones curved downwards, exactly as in Cyrtanthus sanguineus. There are two varieties of colour in the batch of seedlings, in one the flowers are bright rosy-carmine, in the other bright light orange-scarlet, nearly the same as that of the seed-producing parent. The seeds were sown in November, 1883, so that the plant quickly arrives at flowering maturity. It is not a better plant from an ornamental point of view than Vallota purpurea, but the variation in colour will make it useful to mingle with that plant for an effective contrast. All the seedlings, I am informed, have not flowered yet, so it is just possible that another colour variation may appear among them.

I think this plant can scarcely be claimed as an example of a hybrid between two distinct genera, but rather as proving a view that I have held for some time, viz., that Cyrtanthus and Vallota are not really distinct genera, but merely different types of form belonging to the same genus, just as one finds in many other genera, as, for example, in Rhododendron, Lilium, Erica, Gentiana, Pelargonium, &c. *N. E. Brown, Kew.*

## LEPTACTINA TETRALOBA, *N. E. Br., n. sp.*

Leptactina is a small genus of Rubiaceæ, the species being natives of Tropical Africa, the present plant being the first that has been introduced into European gardens. It was sent to Kew by Mr. Hannington from Kwa Chiropa, Usagara Mountains, East Tropical Africa.

As grown at Kew it forms a neat little bushy shrub, with leaves 2½ to 7 inches long, ¾ to 1⅜ inch broad, oblanceolate, cuneately narrowed from about the middle to the acutish base, apex somewhat acute, light shining green, minutely pellucid dotted, glabrous, with the margins and the edges of the ½ to ¾ inch long petioles ciliate with short hairs directed forwards, the midrib and veins of the younger leaves also have similar hairs. Stipules erect, ovate acute, carinate, green, glabrous. Flower solitary, sessile, terminal. Calyx lobes erect, linear oblong acute, ½ inch long, 1 line broad, green, gum-exuding towards the base, with very minute apiculate papillæ (scarcely hairs) on their stout midrib. Corolla white, hypocrateriform, covered outside with minute apiculate papillæ, inside hairy in the tube, glabrous on the lobes; tube 1⅜ inch long, slender, slightly dilated above, and with four small protuberances near the top, corresponding to the places where the anthers are inserted; lobes four, oblong obtuse, ⅜ inch long at their base, and alternating with them are four filiform processes, 1 line long (coronal appendages). Anthers included, linear, 5 lines long, peltately attached in the throat of the corolla by exceedingly short filaments, which support them at one-third below their apex. Style thickened and hairy in the upper part; stigma two-lobed.

This species is closely allied to L. heinsioides, Hiern, but seems to be clearly distinguished by its solitary flowers, and four-lobed corolla; the filiform coronal appendages also do not appear to be present in L. heinsioides, but the solitary specimen of that species at Kew is very fragmentary, and has but one flower, which I do not like to dissect, but no trace of them can be seen in this flower where the sinuses are exposed to view. The plant appears likely to prove quite as ornamental as a Gardenia. *N. E. Brown.*

## ZYGOPETALUM KLABOCHII, *n. sp., Rchb. f. MS.* 1880.

A fine Kefersteinia, with larger whitish-ochre coloured sepals and petals. Lip pure white, neatly denticulate, fringed, blunt at the top, reflexed in the middle, full of purple spots, which are also scattered on base of the petals, on the side sepals, and on the base of the column, though not constantly. The callus is rather narrow, ligulate, bidentate, sometimes with two obscure angles on each side, one behind the other. Column wider at the top. The plant is of New Grenadan origin, or, if you like better, from the United States of Columbia, and most evidently first gathered, or, at least, sent by Mr. Edward Klaboch. I have known it since 1880, and now I have a fine specimen at hand from Mr. C. Dorman, The Firs, Lawrie Park, sent by Mr. F. Sander. It stands near Zygopetalum forcipatum and laminatum. *H. G. Rchb. f.*

Chamærops humilis in the Jardin des Plantes.—In the Jardin des Plantes at Paris there exists in a large orangery a pair of remarkable specimens of the dwarf Fan Palm (Chamærops humilis). Both are male plants, and have stems of about 30 feet in height. The labels bear the legend, "Given to Louis XIV. by Charles III., Margrave of Baden-Dourlach." Neither seems to have suffered at all during the siege in the late Franco-German war, when a goodly number of rare and interesting plants were lost.

* *Zygopetalum Klabochii*, n. sp. Folia lanceis angustis (c. 5 poll. longis, ½ lin. latis; multoro; sepalis tepalisque 1 gulato oblongis obtuse acutis, labello cuneato oblongo retuso marginibus antrorsum denticulatis, callo in basi ligulato bidentato lateribus nunc unicum dentem; columna sursum ampliata. Sepala, tepala, columna albo flavida. Tepala sepala parva nunc purpurea pauci guttata. Columnæ basis nunc etiam purpureo pettata. Labellum candidum, et supra callum, et præterea bene purpure punctatum. *H. G. Rchb. f.*

# The Orchid House.

In the culture of Orchids it is necessary to "take time by the forelock." Delay is in all cases to be avoided. Sometimes it is disastrous to the future well-being of the plants. We have now begun to clean the glass, and as the plants have to be removed from the stages to do this effectually, they are carefully looked over and cleaned at the same time. The best managed collections in the country cannot be kept free from thrips when these troublesome insects are in great numbers outside the house. The same remark applies to green-fly; during the month of July they were very numerous, and covered the clothes and tickled the faces of passengers in the highway.

In such circumstances it is the watchful nervous cultivator that succeeds. He watches the first appearance of insects on his plants, and immediately destroys them. In all cases fumigation is best; but some Orchids cannot stand so much tobacco-smoke as the aphis and thrips can. Cattleyas can be fumigated when Odontoglossum vexillarium and some other easily injured Orchids have been removed from the house. Angræcums, and the hothouse Cypripediums, may be fumigated, but the Odontoglossum Roezlii will not stand it. On one occasion I spent for twelve months trying to kill red thrips on Angræcum sesquipedale by dipping the plants, and failed to clear them from the pest; but it has now been done by fumigating with tobacco-smoke.

These general observations apply to all the divisions. Referring particularly to the East India temperature. In that division the Phalænopsids are now in full growth, and throwing up their flower-spikes. Some of them are in flower, such as P. violacea, a distinct and beautiful species. P. Esmeralda is also beautiful now; the flowers are not large, but rich in colour. P. Sanderiana is also in flower now, and is one of the best of the recently introduced species. The distinct rosy-tinted flowers are quite charming; some have quite a rosy-red or rosy-crimson tint. The most successful cultivators of Phalænopsis and allied species of Orchids use thick shading, and are careful not to allow the plants to get too much sun.

If the plants of Odontoglossum Roezlii were not potted in July or August they should be done now. I have always grown these in the cool end of the warmest house, near the glass, and they require more sunshine than the Moth Orchids. Under those conditions we have grown plants from small bits in thumb-pots until they have attained the dimensions of large specimens, with a hundred or more flower open at one time.

No warm house should be without the singular looking Angræcums, especially A. sesquipedale. This fine species is very accommodating in its disposition, and will grow and flower well either in a light or shady part of the house. They are now pushing out their roots freely, and must be encouraged by the roots being kept moist, the surface sphagnum to be in a healthy growing state. The smaller-growing Angræcums, such as A. citratum, and that pretty little species A. hyaloides (the whole plant, with half-a-dozen spikes on it, of this last-named species may be enclosed in a snuff-box, and the flowers are of the purest white) should be suspended in baskets close to the roof-glass. The flower-spikes will soon be showing, and hanging the plants up near the glass keeps them out of the reach of slugs.

A word in passing about spot in Orchids, although it is a long time since I last saw it. It may be prevented altogether by judicious airing, and careful management of the saturation state of the atmosphere. It is usual during the summer months to keep the paths constantly wet, but now they are sprinkled twice a day only: in the morning, and the afternoon—about 4 o'clock is a good time.

The Cattleya-house requires much the same treatment as the warmest house in respect to atmospheric moisture. A large proportion of the pseudobulbs of the Cattleyas have completed their growth, but a large proportion have not done so; it is therefore necessary to keep the house rather warmer than it would be necessary to do if they had all completed their growths. Those just pushing should be placed near the glass, and in the lightest and warmest part of the house. So ought also the Lælia purpurata and L. elegans; at this time they require a much warmer atmosphere than Cattleyas; 65° at night is more suit-

able to their requirements than 60°. Many species of Aerides which succeed best in this house are yet growing freely, and must receive no check to their growth. Keep the sphagnum in a healthy growing state, and all will be quite well with them. Of these are A. Fieldingii, A. crispum, and the allied species, A. Lindleyana and A. Warneri. Some of these, such as A. Lindleyana, are amongst the most magnificent species of this fine genus, and they succeed quite well in an airy part of the Cattleya-house. If anything is likely to get them into bad health it is the system of keeping them in a close moist atmosphere and a high temperature. We have now removed the Odontoglossums that require a warmer atmosphere in winter from the cool-house into this one. They are O. vexillarium, O. cirrhosum, O. Phalænopsis, and a few Oncidiums, such as O. incurvum and O. ornithorhynchum, the Masdevallias Chimæra and M. Tovarensis. Some of the above will succeed in a cool-house temperature, but they certainly do much better in the intermediate-house. It depends, of course, what the temperatures are; our house is kept about 55° in winter, but in cold weather the minimum is frequently 50°, sometimes lower. The cool-house is 45°, falling in cold weather to 40°. The Vandas in this house, such as V. suavis and V. tricolor, require the same treatment as the Aërides; and the lovely V. cœrulea is now pushing its flower-spikes very freely in a light airy place. *J. Douglas.*

## THE EARLY HISTORY OF THE TURBAN RANUNCULUS.

THE following account, furnished by Mr. G. Nicholson, Kew, is extracted from the English translation (published in 1718), of Tournefort's travels, entitled *A Voyage into the Levant, performed by command of the late French King*, will no doubt interest many readers. We have not attempted to alter in any way the quaint diction or spelling of the translator, John Ozell:—

"There are many other fine sorts of Orchis at Constantinople, but can't be propagated in Gardens, they delighting in nothing but air of the fields. 'Tis not so with the Ranunculusses, which are perpetually multiplying, and acquiring new beauties from the hands of the curious. For some years past, the Turks have been careful to cultivate these sorts of flowers. Cara Mustapha, he who miscarry'd before Vienna, is said to have brought Ranunculusses first in fashion. This Visier, to amuse his master, Mahomet IV., who extremely loved hunting, privacy, and solitude, insensibly inspired him with a fancy for flowers, and understanding that the Ranunculusses were what he was most pleased with, he wrote to all the Bashaws throughout the empire, to send him roots and seeds of the finest sorts they could lay hand on. The Bashaws of Candia, Cyprus, Rhodes, Aleppo, Damascus, outdid all the others in making their court to him. From thence came those admirable species of Ranunculusses which are to be seen in the fine Gardens of Constantinople and Paris. The seeds which were sent to the Visier, and those propagated by private men, produced vast varieties. The embassadors prided themselves in sending them to their respective masters: in Europe they were rectify'd by culture. M. Malaval contributed not a little thereto at Marseilles; he furnished France with 'em, and France all foreign countries. Except Pinks and July-flowers, we have no fine flowers but what originally came from the Levant. A Virtuoso of Paris, one M. Bachelier, brought from thence in 1615, the first Indian Chestnut tree and double Anemonies. The Tuberoses, the Hyacinths, Narcissus, Flower-de-lysses, came from the same country; but have been rectify'd in our gardens. There are cantons in France very proper for the multiplication of certain flowers. They raise in Normandy double Jonquils, and very beautiful Anemonies; the climate of Toulouse is extremely agreeable to these sorts of flowers. Now I am upon the topick of Anemonies, there goes a story of a certain lawyer, to whom M. Bachelier had refus'd to communicate the seed of these fine Anemonies; which when he could obtain neither for friendship nor money, nor by way of truck, a fancy took him to go and visit M. Bachelier, with three or four of his friends who were in the plot. He order'd his lacquey, who bore the train of his gown, to let it drop on some pots that were in such an alley: in these pots were the Anemonies he wanted, and their seed was ready to fall. They walked a good while, and talked about the times: as soon as they were come to the very spot of ground a merry gentleman of the company began a story which engaged the whole attention of M. Bachelier; and at the same time the lacquey, who was no fool, let fall his master's train: the Anemony-seeds, having a downy coat, stuck to the gown, which the boy soon gathered up again, and the company went forward. The Virtuoso took leave of M. Bachelier, and went his way home, where he carefully pick'd off the seeds which had stuck to his robes; he sow'd 'em the same day, and they produced very beautiful flowers.

"The garden of the French Palace at Constantinople is at present well kept; it has a terrace, from whence may be discover'd the plains of Asia, but there's no need to stretch the view so far: the embassador causes to be cultivated within his own walls the finest Orange trees, Ranunculusses, Anemonies, and all such flowers as are beautiful and agreeable in their seasons."

## TREES AND SHRUBS AT MESSRS. LEE & SONS' ARBORETUM, ISLEWORTH.

THE fine collections of hardy ornamental trees and shrubs from these nurseries that have been exhibited of late years at our horticultural displays must have suggested to admirers of such that the collections from which they were sent must be something out of the common way, and the idea is not an illusory one, as a recent inspection at their home quarters has amply verified.

We were prepared, of course, to see many fine things, but were totally unprepared to see so much that was remarkable. To stand at the entrance to the arboretum and gaze down the long avenue planted on either side with such rich, varied, and beautiful tree growth is a sight once seen not easily to be effaced from the memory; the glowing autumn tints, too, which many of the examples are now putting on add a new charm to an already bright picture.

It would appear to be a matter for regret that the subjects to be found in a place of this description are not more generally made use of by planners and planters of gardens and parks.

In a hasty look round notes were made of a few of the choicest subjects, but to give even a tithe of noteworthy plants would be more than the space permits, and might also weary the reader. We will therefore be content to single out the following from the many—beginning with:—

Ulmus Roseelsii, a grand and noble tree for park or lawn, foliage of a bright golden hue, very effective; U. campestris latifolia variegata, a species of the English Elm, very conspicuous for its variegated foliage and fine habit; U. viminalis variegata, of a pretty pendulous habit of growth, silvery variegated foliage; U. montana var., a species of the Wych Elm, deeply margined with white, very pretty and effective; U. (Planera) Keki, a very spiny dentated leaf, considered one of the best foliaged amongst the Elms—pendulous habit of growth; U. plumosa, leaves curling plume-like round the wood, giving it a very distinctive appearance—habit of growth erect.

Betula purpurea, purple-leaved Birch, very ornamental; Tilia americana glabra, a species of Lime, with very bold dentate foliage; Cornus fœmina, a very pretty bushy plant, centre of leaf olive-green margined with silver-white; in the early spring the plant is covered with small yellow blooms. Populus canadensis aureus, the golden Canadian Poplar; when planted out in an exposed situation this tree has a grand appearance. P. Bolleana, Silver Poplar, somewhat new, leaves very deeply cut, of dark olive-green; an acquisition amongst this class of trees. Cratægus filicifolia (new), Fern-leaved Thorn, leaves of a dark olive-green: very conspicuous. Rhus glabra laciniata, one of the most beautiful of hardy plants, with elegantly cut leaves; very free blooming. Sambucus laciniata variegata, cut-leaved Elder, throwing up long spikes of silvery variegated foliage; a very handsome and showy variety. Corylus Avellana aureus, a new golden-leaved Filbert; C. Avellana purpurea, purple-leaved Filbert, bearing large clusters of purple-coloured Filberts, which are sweet and edible, the bush is very prolific; a useful and ornamental subject. Acer platanoides globosus, a variety of the Norway Maple, and when "worked" as a standard it is very handsome; A. colchicum rubrum, young growths of a very deep red tint, rendering it effective; A. Pseudo-Platanus Webbiana, raised by Messrs. Lee; large leaves, very prettily variegated, having more white than is generally the case with the other varieties; footstalk of leaf yellowish tint, differing in this respect from others, which are mostly of a reddish tint: a noble-looking Maple, of very vigorous growth. A. striatum, commonly called the Snake-barked Maple, in allusion to the peculiar striping of the bark; of very curious appearance, and a handsome tree of moderate height. A. platanoides laciniata (the "Eagle's Claw"), Norway Maple, very curious and interesting; A. Pseudo-Platanus elegantissimo, large leaves, very prettily variegated with gold and green—most effective; a seedling raised by Messrs. Lee Euonymus europæus latifolius, bearing fine broad leaves; the plant just now is covered with its numerous dull rose-coloured seed-vessels, giving it a very pretty and distinct appearance. E. e. purpureus, foliage of a dark purple, almost turning to a deep red in autumn; very pretty as a half-standard. Cotoneaster affinis, the deciduous Cotoneaster, now covered with clusters of coral-coloured berries, rendering it very effective; Prunus economica, very effective; centre of leaf green, margined with gold. Morus papyrifera, or Paper Mulberry; deeply cut heart-shaped leaves, ribs of which are tinted with pink; fruit round, rough, small, greenish. M. hispanicus, bears fine broad leaves, and is of free, robust growth.

A large collection of the different kinds of Malus is grown; we noted especially M. Toringo pendula, of very pendulous habit, and in the early spring is covered with pink and white flowers, and bearing a Crab much smaller than a Pea; it is, in fact, the smallest of Crabs. Pyrus chinensis, the Chinese Sand Pear, has fruit resembling in appearance a large, round, rough ball of worsted; it first fruited about twenty years ago (it has not done so since), and the fruit may now be seen at the Royal Gardens, Kew. Juglans regia pendula (Weeping Walnut), magnificent when worked, as here, on a stem about 12 feet high; it has a noble appearence. This particular specimen is probably one of the finest in existence, and although this has been a very dry season the tree has made shoots 6 feet in length. Castanea vesca heterophylla dissecta, a Spanish Chestnut having variously shaped leaves; on the plant we noted five distinct forms of foliage, the young growths having long, drooping, narrow, tail-like leaves of about a foot in length, giving it a distinct and grotesque appearance: a showy plant in any position. Catalpa syringæfolia aurea, in exposed situations is a grand tree; the more intense the heat the deeper colour do the golden leaves assume. Cornus mascula aurea elegantissima, one of the prettiest of the Dogwoods; centre of leaf olive-green, variegated with gold, the points being tipped with magenta. Acer pendula nova, an acquisition amongst Maples—plant of beautifully spreading habit; Caragana Chamlagu, the Siberian Pea tree, bearing a Pea-like flower tinted with pink and white, and retaining its glossy glaucous foliage until late in the autumn; Cerasus Padus elegans, Bird Cherry: pretty leaves, green margined with silver, very ornamental tree. Pyrus sorbus vestita: upper surface of leaves dark olive-green, under-surface being of a beautiful silvery-white; wood of glaucous appearance, makes a pretty plant as a standard. Sambucus nigra var. aurea, Golden Elder: a most effective plant; Robinia Bessoniana, a fine hardy tree—most effective for avenues and promenades.

Of the brave old Oak, a numerous and most interesting variety is grown. We can but give names of only a few of them. Quercus cerris elegantissima, a variety of the variegated Turkey Oak, much more deeply variegated than the old variety; Q. filicifolia, the true Fern-leaved Oak, foliage very dense and handsome; Q. coccinea borealis, foliage of a deep ruby tint—this is distinct; Q. albo marmorata, the young growth silvery variegated, the young shoots striped with red, which has a pretty effect; Q. imbricaria, very handsome, of robust growth—long lanceolate leaves; Q. phellos, very pretty, long narrow or Willow-like leaves, tints in autumn deep red; Q. robur purpurascens, purple leaved, rapid and vigorous grower—a first-rate variety for the forester; Q. pannonica, also a rapid grower, very erect habit, leaves fine olive-green; Q. Ilex laurifolia, an evergreen Oak of pretty appearance and pendulous habit; Q. nobilis, or Black Jack of America, the autumn tint being of a transparent red, and very beautiful; Q. Diamio is one of the largest leaved varieties of Oak we have. The plant, when in a vigorous state, produces leaves averaging from 16 to 18 inches in length, and 12 to 14 inches in diameter—rough habit; Q. Tauzin splendens, leaves of a very dark green, glaucous on the under-surface—very much

like a Turkey Oak in appearance, but of much more rapid growth: a very handsome variety of Q. pyrenaica, the foliage dying off in beautiful tints. Q. Mirbecki, of rather slow growth, has leaves broad, very dark green—a magnificent kind; Q. austriaca sempervirens, of dwarfish habit, very thick growth, semi-evergreen—very handsome; Q. robur argenteus nana, an English Oak of dwarf habit—very prettily variegated; Q. diversifolia, an evergreen variety, habit and growth of tree very thick; Q. robur concordia, beautiful golden leaves—handsome.

It would be unfair to close these rambling notes without a well-merited word of praise to Mr. John Webb, Messrs. Lee's able manager. The pleasure of our visit was appreciably enhanced by his company, and the communicative spirit which he showed.

Adjacent to the arboretum Messrs. Lee have a nursery devoted to the cultivation of Coniferæ, Roses, Clematis, Camellias, Ivies, creepers, small evergreens, greenhouse plants, Vines, Heaths, &c., on which we may have something to say anon. *J. B.*

## PICEA MORINDA.*

This is a hardy, rapidly growing Spruce, growing in Bhotan and the Eastern Himalayas, at altitudes ranging from 7000—11,600 feet above the sea. Major Madden says it has many native names, all denominating a "prickly Fir," and he says the Babylonian confusion of the vernacular may reconcile mortals to the unity, however hard, or sometimes barbarous and pedantic, of the botanist. There is, unfortunately, a similar lack of unity in the botanical names, as any one may see who cares to look into the synonymy and literature of the species. The botanists, however, have this advantage, that there is order and method in their synonymy, which represents difference of opinion, not of fact; and for the unravelling of which there is a ready clue which is wanting in the vernacular appellations. The cones are at first erect, but rapidly become pendulous (fig. 85). It is curious that Wallich and Forbes, *Pinetum Woburnense*, both figure the cone as growing erect when mature. This, however, is a mistake arising from the artist having seen only the detached cones. On the tree and in a mature state they are pendulous, as in all the true Spruces. The botanical history is now well known, and may be gleaned from any of the text-books. In gardens and plantations the growth is very rapid. The very beautiful tender green shoots, as well remarked by Major Madden, as they elongate, carry before them like an extinguisher the brown transparent scales of the leaf-buds. The twigs are used as litter, but the timber is soft and not durable. It forms excellent hedges, as few plants bear the shears better. On the other hand, when left to itself it forms a graceful pyramidal tree, with pendulous branches. The largest we have seen is in the garden of an old farmhouse in the neighbourhood of Witley Court, Worcestershire. The buds are elongate, light brown. The lateral buds at the end of the leader shoot expand before the terminal bud, and in growth the young shoots are strongly curved in a downward direction, apparently from more rapid growth on the upper as contrasted with the lower surface, from "epinasty," according to the modern terminology.

The tree in this country seems always ready to grow on the least provocation; hence the young shoots are apt to be nipped by frost, which does not seem to do permanent harm, and for hedge purposes is rather beneficial, as new growth is stimulated to take the place of the old. It was introduced into Scotland in 1818, the name Smithiana referring to Lord Hopetoun's gardener, who was the first to raise the plant from seed. Mr. Fowler reported in our columns in 1872 that one of the trees planted at Hopetoun was then 60 feet in height, and measured 7 feet round the bole at 4 feet from the ground. Mr. Fowler also notes that at Castle Kennedy this Himalayan Spruce grows much faster than the common one. The cone from which our figure was taken was sent to us from Penrhyn by Mr. A. D. Webster. *M. T. M.*

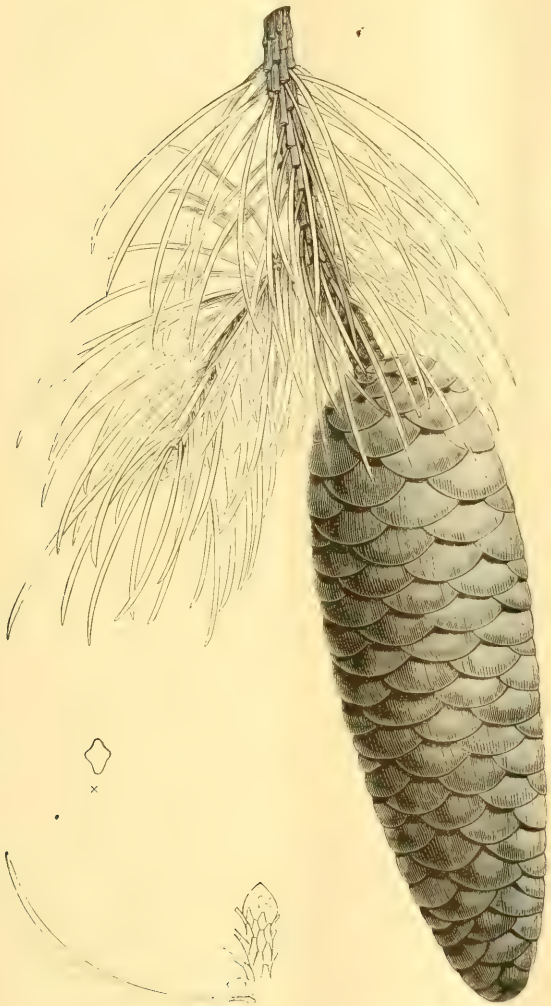


Fig. 85.—Cone and bud of Picea morinda.

* Picea Morinda, Link.; Abies Morinda, et A. Smithiana, Link.; Pinus Smithiana, Lambert ex Palatore, DC. *Prod.*, xvi., ii., p. 416 (1868); Picea Smithiana, Boissier, *Flor. Orient.* v., p. 700 (1884).

## THE JEPHSON GARDENS, LEAMINGTON.

These gardens are nicely situated, adjoining the river Leam, which flows on the southern side for their entire length. Being in the town the inhabitants have easy access to them, and numbers of visitors find their way to this fashionable resort. The extent is some 14 or 15 acres. The most has been made of the ground available in the laying out, so as to secure as much room for promenading as possible—a matter of importance where large numbers of people congregate. A broad central walk runs the whole length, with others at intervals, where required, diverging from it, and leading to that which surrounds the whole garden near the boundary.

Trees of most kinds thrive well, both deciduous and evergreen; neither is this to be wondered at when the rich fertile nature of the soil in this part of the country is taken into account, the advantage of which was more than usually apparent during the present dry summer, when the lawns were green and pleasant to look upon at a time when the greater portion of the country was so burnt up that grass and stubble presented little difference in colour. From the entrance to a point some distance within the grounds evergreen Oaks stand right and left of the central walk, planted at sufficient distance apart to prevent their ever encroaching upon each other. They are beautiful trees, densely clothed with foliage, and feathered down to the green turf out of which they spring. These Oaks, with most of the other trees in the gardens, have been planted about forty years, and in common with the others have made good progress. Amongst the trees that are thriving well may be named the Lebanon Deodora and Mount Atlas Cedars, Taxodium sempervirens, Pinus excelsa, P. Strobus, P. austriaca, and others of the coniferous family. Deciduous trees do equally well; the clean healthy appearance they have is sufficiently indicative of their condition. Dispersed about the grounds is a good collection of Thorns. Evergreen and deciduous shrubs, of which there is a good selection, alike make good progress.

To the right of the main walk leading from the entrance is an ornamental piece of water, which is

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well placed, and forms an interesting feature; a considerable portion of its surface is occupied by aquatic plants of various kinds.

On the opposite side of the main walk there is a flower garden made by the Curator, Mr. Longford, a few years ago. It consists of a moderate number of beds in the grass. As opposed to the intricate style so oftener met with, the design has the merit of simplicity, and is still further commendable for not being too large for the situation, whilst yet big enough to give the requisite amount of colour, which the frequenters of gardens of this description are likely to continue to hold in estimation. It was very well planted, partly in the carpet style, and the remainder with an assemblage of the usual continuous summer-flowering plants, in which soft colours were most prevalent. To the left of the entrance, just within the iron railing that separates the gardens from the main road, there are also two or three good-sized beds in the grass between the clumps of shrubs; these were planted as carpet beds, and as seen from the road, as well as from within, give agreeable bits of colour that brighten up the dark hues of the trees and shrubs around. These beds show at a glance the difference that exists between the use of enough colour to give life to the surroundings and the misuse of colour where introduced in wrong places or used in excess of what is required. The disfavour in which modern flower gardening is now held is due simply to the fact of those engaged in it not knowing the requisite amount of it that should be used; or, in other words, to the introduction of colour to positions where it was inadmissible, or to the use of too much. It is the misuse of summer bedding, rather than its use, that has brought it into disfavour.

The borders, which in some parts of the grounds are backed with shrubs, were gay with Violas, Pansies, and other flowers, which, combined with herbaceous plants and annuals, keep up a display.

There is a good collection of Roses, which soil and climate alike favour. The walks are dry, smooth, and pleasant to walk on, whilst the closely mown grass is of the dense character that is only met with where the land is of the best description; and the general aspect of the gardens is highly creditable to Mr. Longford. *T. B.*

## GARDEN PALMS.

(*Continued from p. 292.*)

DIPLOTHEMIUM, *Martius*.—Only four species belong to this genus according to the *Genera Plantarum*, five according to Drude in Martius' *Flora of Brazil*. Three of them are cultivated at Kew, where one, viz., D. glaucescens, is represented by very handsome specimens, which in point of beauty are second to none of the cultivated Palms. The largest of these has arching leaves 15 feet in length by 4 feet in width, the segments being 2 feet long and 2 inches wide, olive-green above, silvery on the under side. When quite small this species is an attractive Palm, owing to the broad feather-like form of its foliage, which assumes a graceful habit at an early age. The petiole is very short, as the pinnæ extend down the rachis of the leaf almost to its base; the lower part of the rachis is channelled, the upper part keeled; the midrib of the pinnæ stout and prominent above. D. glaucescens forms a stem 12—15 feet high, whilst the other species are stemless. D. maritimum has leaves 7 feet long, the segments rather narrow and glaucous on the under-side. The fruit is as large as a Cherry, the covering fleshy when fresh, drying to a soft scale-like fibre, in which the smooth pale brown round seeds are enclosed; they are very hard and marked with three shallow furrows running from the base towards the apex. Seedling leaves simple, assuming a pinnate character when the plants are about a year old. The species thrive best when treated as tropical plants. D. littorale is figured in the *Bot. Mag.*, t. 4861, but it is not now known to be in cultivation.

*D. campestre*, Mart.—Brazil.

*D. caudescens*, Mart. (Ceroxylon niveum, Hort.).—Brazil.

*D. maritimum*, Mart.—Brazil.

DRYMOPHLŒUS, *Zippel*.

This genus is made to include plants with cuneate or truncate leaf-segments, as well as those with linear, pointed ones, and is, therefore, exceptional among Palm genera. In gardens the two types of foliage are represented by D. Rumphii, which has a thin erect stem, short leaves, with rather soft thick petioles, and leaf-segments broadened out like a fish's tail, with the apex jagged, a very broad one terminating the rachis, and the whole leaf is covered with a floury substance; and D. singaporensis, which may be compared to a Cocos or Euterpe, as the leaves are graceful, arching, with segments not much wider than in Cocos Weddelliana. This species deserves to occupy a favoured position among garden Palms, as it is a quick grower, healthy in appearance, and particularly ornamental when young. There are twelve species described, all of them being unarmed, with erect, thin, annulated stems. The fruit varies in size, is ovoid or oblong, the pericarp thick and fibrous, enclosing the dark brown striated seeds, which are usually egg-shaped (D. ceramensis), and half an inch to an inch long (D. singaporensis). Seedling plants not seen.

*D. ceramensis*, Miq.—Ceram.

*D. oliæformis*, Mart. (Ptychosperma Rumphii, Bl.).—Moluccas.

*D. Rumphii*, Hort., Lind.—Moluccas.

*D. singaporensis*, Hook. f. (Ptychosperma singaporensis, Hort.).—Singapore.

DYPSIS, *Noronha*.

This genus is closely related to the Chamædoreas, and resembles in its leaf characters and habit some of the graceful leaved species of that genus. The cultivated kinds of Dypsis are very similar to each other, being erect, thin stemmed, the stem bright green, smooth and annulated, and the leaves are long, pinnate, the segments arranged in fascicles of six or eight, each 18 inches long, bright green. The clasping sheath-like base of the petiole is very prominently angled, and as the leaves appear to be arranged in three rows along the stem, that portion enclosed in the leaf-sheaths is distinctly triangular. The same character appears in Hyophorbe Verschaffeltii. In the fasciculate arrangement of its leaf segments, and the curious triangular or tristichous character of its leaves, the genus Dypsis is distinguished from all other pinnate-leaved Palms. In addition to this form of leaf there is also in this genus a form the blade of which is entire with a sinus at the apex as in Stevensonia and Verschaffeltia, but it is not represented in the species cultivated. There is a plant at Kew of D. madagascariensis 15 feet high, measuring to the top of the leaves which are over 10 feet long, very graceful, and not unlike the leaves of Cocos plumosa. The seeds are peg-top-shaped, half an inch long, and covered with a coat of brown fibre; internally they are milk-white. Seedling leaves split; the plants do not assume their graceful plumose characters till about five years old.

*D. Hildebrandtii*, Hort. Van Houtte.—Madagascar.

*D. madagascariensis*, Hort. (Areca madagascariensis, Lodd.).—Madagascar.

*D. pinnatifrons*, Mart. (Areca gracilis, Thou.).—Madagascar.

ELAIS.

The three or four species included in this genus have no particular attractiveness in their foliage, and the two species in gardens are so difficult to keep respectable, that if it were not for their interest as oil-yielding Palms, they would probably be discarded. There are two sections in the genus, viz., Euelaiis, the species of which have erect or decumbent trunks, serrated petioles, and stiff leaf-segments, and Barcella, which has no stem and flaccid leaf-segments. E. guineensis when young forms a dense rosette of pinnate leaves, which are stout at the base, the lowermost pinnæ reduced to long spines, which extend almost to the bottom of the petiole, the upper ones opposite, about a foot long, terminating in a long filament. When developed this species has a stem 20—30 feet high. Young plants of E. melanococca do not materially differ from the former. They are both moisture-loving plants, thriving best when kept uniformly wet at the roots, and in a hot, steamy atmosphere. E. guineensis may perhaps take rank second only to the Cocoa-nut Palm as a valuable economic plant, as from its yellowish fruits, about as large as Walnuts, is obtained the important produced "Palm oil," of which upwards of 800,000 cwt. were imported into England in 1882. The oil is expressed from the fleshy covering of the seed. Good Palm oil is of a bright orange colour, about the consistence of butter, and when fresh has an agreeable smell. It is used for making soap and candles, also for greasing the wheels of waggons, &c. This species is cultivated in various parts of South America, and of course very largely in Africa, about Liberia.

*E. guineensis*, Jacquin ("Oil Palm"). — West Tropical Africa.

*E. melanococca*, Gaertner.—Central America.

ERYTHEA, *Sereno Watson*.

Two species of Californian Palms are included here, both very like the Coperniceas, having fan-shaped leaves borne in heads on stout annulated trunks, the leaf-stalks spiny or merely roughened along the edges. The blade is divided half way down into numerous segments, which droop and give the Palm a graceful Thrinax-like appearance. They have only recently been introduced into English gardens. Fruits Cherry-like, with a yellowish fleshy pericarp, which is sweet to the taste, and which encloses a dark brown somewhat compressed seed. Seedling leaves stiff, simple.

*E. armata*, S. Watson (Brahea edulis, Wendl.; and B. Roezlii, Hort.; B. glauca, Hort.).—Guadaloupe Islands (Coast of California).

## PROLIFERATION IN FERNS.

(*Continued from p. 371.*)

FERNS fall roughly into two natural divisions, terrestrial and epiphytal. These divisions are marked by several characteristic features. They contrast, as a rule, in habit of growth, texture, and circumscription of the fronds, and duration of the individual life. Broadly, the characters may be thus tabulated:—Terrestrial: Rootstock generally upright, with the fronds clustered at the top; these more or less herbaceous in texture and perishable, and compoundly or decompoundly cut; duration of life variable, but limited and relatively short. Epiphytal: Rootstock generally creeping, with the fronds placed along its axis; these more or less coriaceous, chartaceous or membranous in texture, and durable, and generally entire or pinnatiform; duration of life relatively long. There are very numerous absolute exceptions to the rule, and others in which these features are more or less modified in each division, but taken broadly they characterise the two sections very clearly.

In the New World the epiphytal is composed chiefly of the majority of the species of Hymenophylleæ, Polypodieæ, Vittarieæ (included in Grammitidia in *Synopsis Filicum*), and Acrosticheæ, with a few from one or two other tribes. The difference in the duration of life in the two divisions is due partly to the habit of growth in the respective rootstocks, and partly to constitutional character. The erect state, being generally unable to produce new roots after it clears the moist influence of the surface of the ground, exhausts itself in a period varying from a few months in the most herbaceous, to few, several or many years in the most arborescent; the creeping state, on the other hand, lying constantly prone along its whole length to the surface on which it is growing, roots as it elongates, new feeders keeping pace with the growth, and thus the life is renewed from day to day. In this form of growth, while the conditions of its environment remain favourable, duration seems to exert no adverse influence, and there is no evidence of a gradually diminishing energy, which age invariably manifests in the course of time in the other type. The constitution is tough, too, and slow to suffer under unfavourable influences, such, for instance, as disturbance of the plants, while in the erect form of growth it is tender, and suffers from disturbance immediately, and any adverse condition prolonged is irretrievably fatal. But this greater vitality of the creeping over the upright habit of growth is common to all the species in which it occurs, both terrestrial and epiphytal. The broad differences which I have enumerated that mark these primary divisions are due, I have no doubt, largely, if not altogether, to the conditions of their respective situations of growth. The epiphytal species, growing aloft on the exposed branches of trees, usually without soil of any kind, or with only what little *débris* from decay of bark, moss, or foliage may adhere to the roots, the repent form of rootstock affords the firmest and most secure hold; and as they are exposed without root protection in seasons of drought, under this influence have acquired a constitution that will resist successfully the ordeal. Some species of Vit-

tariæ which have not acquired this toughness of fibre, and in which the rootstock is short and fleshy, have provided a substitute, which serves both for adhering to the surface and supplying moisture in the form of a sponge-like mass of hairs which clothe the roots. The matted mass clings tightly, and the moisture absorbed during rain is retained for a considerable time. Again, with regard to the durable texture of the fronds: were they herbaceous, as in the terrestrial species, they would wither beyond recovery under prolonged drought; whereas now they are hardly affected—the leathery ones perhaps slightly shrivelling, and the elastico-membranous curling, both fully expanding again on the return of rain. Then as to their size and shape: were they large and freely divided, they would get much battered and damaged by wind, and constant risk would arise of the rootstock becoming dislodged by their sway and weight; hence they are usually small, and at most never exceed a moderate size, and are generally entire, or simply pinnatiform. The Hymenophyllæ are in part an exception to the rule, the majority being multifidly divided, but these are protected by their generally diminutive size and communal habit of growth. The Fern species in which the fronds are broad, and present a good leverage to wind, develope, like plants which are subject to immersion and the drag of river currents, a vast mass of tightly adhering roots, which completely clasp the branch on which they are growing. These facts, which favourably affect the duration of individual life among the epiphytal species, I have detailed, as they are probably a countervailing advantage to the general absence of proliferation which marks this division, and the perhaps generally less spore production than obtains in the terrestrial division. With regard to the duration of individual life, it appears to be a rule that, where it is brief by nature, or liable to be so from tender character, or precarious situation of growth, abundant fecundity accompanies it. Ceratopteris and the annual Gymnogrammas are instances among plants whose duration is by nature short; and Cystopteris fragilis and other plants which grow in the beds of rivers, and are liable to be washen away in floods, of those which by accident are so; the latter are, however, further protected by the faculty they have acquired of adhering tightly to a bare surface, so that, though the fronds are washed away, the rootstock frequently remains to sprout again when the water subsides.

Generally, I think it may be said that the fecundity of the epiphytal species is somewhat less than that of the terrestrial. The Acrostichias with their amorphous sori might appear an exception to such a rule, but even here the rule obtains; for in this tribe the fertile fronds are only produced in seasons, in many cases only once a year. More spores are probably lost, too, in the epiphytes through reaching unsuitable situations for their growth than among their terrestrial analogues. But, assuming the condition equally favourable in each case, I think it probable that in a wild state the spores of each are equally free in germinating. Gardeners, however, have not found this the case in cultivation; but may not their failure be very likely due to the greater difficulty of producing under an artificial state the conditions required by the epiphytal species, with perhaps at the same time an inherent want of adaptation to conditions defective in any of the normal qualities?—a feature which seems to be more rigidly characteristic of this division than of the other. That it is difficult to produce the conditions in cultivation of the wild state may be witnessed by an attempt to grow the epiphytal plants as they grow wild, so far as these conditions could be imitated by the cultivator. They are (1) a bare branch or trunk of a tree, and (2) alternating periods of moisture and drought. Any such attempt would fail absolutely from the first; yet it is on the bare branches of trees, subject at one season to weeks or months of cloud and rain, and at another to periods as long of sun and drought, that the spores of the majority of epiphytal species germinate and the plants spend their life. Of course there is something else—some ever-pervading impalpable atmospheric element, complex no doubt in character, which is imperfectly recognised by the observer, but which is among the chief essentials of success. With regard to wasted spores, Nature is ever bountiful of the elements of life, and her purpose is served if one in thousands succeeds. In both the divisions multitudes of spores perish after germination, through the conditions not being such as is required for the permanent and adult life.

In regard to the survival and permanence of specific types, the chief or only advantage which the epiphytal division possesses over the terrestrial is in the greater tenacity and duration of the individual life. The cases of proliferation which it presents are rare, especially of frond proliferation, and are chiefly confined to the species which may be described of intermediate character, that grow mostly on rocks or about the base of trees, and on prostrate decaying logs. The only form which I have witnessed in the strictly epiphytal species is root-proliferation, and this is rare. This, however, it is interesting to note is the only form that probably could be of any service in this division. The difference in the situations of growth would make all the forms of frond proliferation, as a means of reproduction, nearly entirely futile Their fronds generally spread out on being clear of the surface on which the rootstock is growing; so that buds, were they produced on them, would reach no surface in which to become established while connected with the plant; and were they to acquire roots and then drop, in the way I have described as accomplished by some of the terrestrial species, they would fall to the ground, where, in the majority of instances, they must necessarily perish—such a situation being the antithesis of what they require. Even among those scandent species which begin their life on the ground, but only attain perfection by ascending trees, in which it might succeed, I have met no instance. Many of the epiphytal species drop their fronds by disarticulation, which would also disadvantageously affect the success of most forms of frond-proliferation. Disarticulation is not confined to the epiphytal division, but in either division I have observed no case of frond-proliferation coexistent with it. Some Tree Ferns, in which the growth is periodic, curiously illustrate it by dropping all their fronds during the season of wet, the trunks standing as bare poles till the next tier of leaves is thrown out. This habit would be as fatal to any of the ordinary forms of bud-proliferation as the perishing of the fronds with the approach of winter, which is usual in the terrestrial division in a cold climate. With regard to this periodical growth, in some species of Tree Ferns I have on two or three or more occasions witnessed a remarkable instance of intelligence on the part of birds. It is known, of course, that in some of the tribe (Cyatheæ) the growth is continuous all through the year, while in others it is intermittent. The former throw up their fronds one after the other; the latter, at least when they first start into growth, several simultaneously, or nearly so. Prior to this growth the incipient fronds are tightly coiled, forming a rim to the top of the trunk, which, surrounded by the petioles of the preceding tier of fronds, is like the centre of a shuttlecock. Recognising the period of dormancy and its duration in this species, birds sometimes build their nests at the top of the trunk on the rudimentary fronds, supported by the leaves of the surrounding developed fronds. Here they hatch and rear their young before the growth starts. Were it to begin before the brood had fled the consequence would be more disastrous to the little family than an earthquake, for the nest is first lifted by the uncoiling fronds, and then as rapidly, they more and more diverge, is turned over. The birds must also be able to distinguish the species of intermittent from those of unintermittent growth, for I have never observed an attempt to build on any of the latter. This seems to me a case of true discrimination and intelligent appreciation of facts in Nature in birds.

But to return to our subject. I have mentioned that the only form of proliferation found in Tree Ferns is a generally very casual budding of the stem, which results in furcation, or, where it is habitual, in fascicles of stems. The new divisions generally throw out aërial roots at the base, by which, if the part falls off, it may become established. If taken off with the roots developed, such young stems readily grow, like cuttings. Several species of Tree Fern throw out aërial roots on their stems under the influence of moisture, often several feet upwards from the ground. Perhaps all do to some extent, but under the same conditions it is manifested very unequally by different species. These root-fibres are very dense generally, and greatly increase the diameter of the stem in those cases in which it is most developed. I have come across examples so stout, tapering upwards from the ground, that I could not clasp the stem in my arms. When wounded on the stem some species also readily emit roots, and but rarely buds. This facility in rooting might be taken advantage of by cultivators, who, instead of destroying Tree Ferns which become too tall for their houses, might, by erecting a box filled with soil on the stem at any desired point, shorten the stem to that extent. When the box becomes filled with the roots the stem could be cut just beneath it, and the plant lowered to the ground and planted again. I have done this with wild Ferns, leaving the matter entirely to Nature till the time for severance arrived, and thus obtained a large, wide-spreading plant in full fruit, with a stem so short as not to be clear of the surface of the ground.

Turning from Tree Ferns to those of the order which exhibit the other extreme of stature—the Hymenophyllæ—I know of but one instance in this tribe, and that a case of frond-proliferation—which occurs in a polymorphous terrestrial species, and which I shall have to refer to again. Possibly root-proliferation occurs in the tribe, but I have not observed it.

(*To be continued.*)

## "HORTI FLORIDI," 1614–1617.

Mr. F. W. Burbidge, in his interesting notes on the "Garden of Flowers" in the *Gardeners' Chronicle* of September 12, p. 346, has mentioned my name, soliciting me to give some information about the old garden books which were published from 1614 to 1617 as *Horti Floridi* at Arnheim and Utrecht in the North Netherlands. I am happy to be able to do so, as I am fortunate enough to possess in my library different copies of these very curious and rare works.

These books are interesting from a horticultural point of view, as they are examples of the oldest garden books we possess. The original engravings are good, and, as already mentioned by Mr. Burbidge, have been frequently reproduced in subsequent works, so, among others, in the different German "Florilegium"; for example, in Merian's *Florilegium renovatum et auctum*, published in 1641 at Frankfurt-on-the-Main.

The books are rarities, as a complete copy of one of the editions never seems to be met with, some plate or another being always missing, and the copies described are nearly all different in some way.

As Crispin de Pas and his family were well known engravers of the time, the books have their interest in the history of Art, especially as from the younger De Pas, the principal engraver of the work, but few engravings are known.

There are three different editions known of this *Hortus Floridus*—a Dutch one, which is, perhaps, the original one, a Latin one, which is that best known and mentioned in bibliographic literature; and an English one—that mentioned in the former number of the *Gardeners' Chronicle*. Other copies are mentioned, one with a French and others with a German title; these, however, contain no text, but only plates.

The bibliographical books are incomplete or incorrect in their details as to these *Horti*. In J. T. Seguier's *Bibliotheca Botanica* (Hague, 1740), the date of one of the editions is erroneously given as 1607 instead of 1617, and an Amsterdam edition of 1651 in folio, another of 1684 in quarto, and an Arnheim edition of 1615 in folio, are all mentioned, but all which I suppose to be very doubtful.

Albert von Haller (*Bibliotheca Botanicæ*, 1771), copies Seguier. The English edition is mentioned in both these works next to the Latin one.

In Pritzel's *Thesaurus Literaturæ Botanicæ* (Lipsiæ, 1851) both editions are mentioned, sub. No. 7796, with reference to Seguier and Haller. In the second edition of Pritzel—edited by Dr. Carolus Jessen (Lipsiæ, 1872), finished in 1877—the Latin edition is mentioned, as in the first edition unaltered (sub. No. 6972), and the English edition is omitted; and sub. No. 6973 it gives, under a separate title, the last part of the former book, viz.:—

"Consocietate lilia agri quomodo crescunt, non laborant neque nent attamen dico vobis ne Salomonem quidem in universa gloria sua sic amictum fuisse de unum ex his Matth., 6 cap. Formulis Crispiani Passæi et Joannis Welldnellii."

These books have frequently given occasion to bibliographical theories, among others in the *Bibliographica Adversaria*, published in Dutch by Martinus Nihoff, at the Hague, where, in vol. ii., No. 6 (1875), Ph. T. J. Arnold gives a monograph of the book. His study, however, is far from complete,

and several columns of the *Gardeners' Chronicle* would be necessary to describe all the variations in the copies found in various places.

The title of the Dutch edition begins as follows :—

"Den Blom-hof in hovdende de rare oft ongemeene blommen die op den tegenwoodigven tijdt bij De Liefhufers in estimate quehouden werde," &c.

This edition was printed at Utrecht for Crispin van de Pas, anno 1614. At the second page (back of title) a list is given of some florists from whose gardens the flowers published in the work have been drawn and engraved. This list contains fifteen names from Utrecht, five from Amsterdam, five from Haarlem, and two from Leiden. The title of my Latin edition is as follows :—

"PASSÆUS CRISPINUS.—*Hortus Floridus* in quo rariorum a minus vulgarium florum icones ad vivum veramque forma maccuratissime delineatæ et secundum quatuor anni tempora divisæ exibentur, incredibile labore ac diligentia Crispini Passæi junioris delineatæ ac suum in ordinem redactæ.' Arnihemii, apud Janssonium, 1614 (—17), 4, oblong, 184 foll. et tab."

The book was published in parts. There are some copies made to imitate this. Later, the plates were aranged in the bound copies in different ways. The book is divided into two equal parts of which the first contains the flowers of spring, summer, autumn, and winter. The spring division was published in 1814 ; the summer, only with a Latin text, at Arnheim in 1817 ; the autumn, with Latin text, at Arnheim in 1816 ; and winter, with Latin text, without indication of place or year of publication ; in a second copy in my library Utrecht is given as the printing place of this part.

The second general part of the work is entitled "Altera pars horti floridi," &c., and has a second title, the verse of Matthew cited above.

All these editions are excessively rare, and are likely to become so more and more. As a proof how much they are valued it may be mentioned that in one of the last lists of the well-known bookseller, Mr. Bernard Quaritch, London (rough list, lxxii.), September, 1885, p. 655, another totally complete copy of the Latin edition is priced at £10.

The English edition seems to be the scarcest of all. I bought my copy in 1868 from the antiquarian stores of Mr. Frederick Muller at Amsterdam, at a high price. The copy was advertised as exceedingly rare. I have never met with another English copy since, till I found that of Mr. William Baylor Hartland, mentioned in his little *Book of Daffodils* (Cork, 1885), where, at the inside of the cover, a piece of poetry from Thomas Wood, out of this book, is printed.

My English copy has no separate titles for the four parts of the year, nor a principal title for the second part of the book. At Mr. Burbidge's request I give here the full title of the book, written in the same way as it is printed :—

*A GARDEN OF FLOWERS,*

Wherein Very

Lively is contained a trve

and perfect discription
of al the flowers contained
in these fovre following bookes.

As also the perfect trve Man-

ner of colovringe the same
with theire naturall colovres, beinge
all in theire seasons the most rarest and
excellentest flowers, that the world affordeth : ministeringe
both plea-
sure and delight to the spectator, and most espetially
to the well affected practisioner.

All which to the great charges,

and almost incredible labour and paine, the diligent Authore by foure yeares experience, hath very Laboriously compiled, and most excellently perfor-
med, both in theire perfect Lineaments in representing them
in their coper-plates :
as also after a most exquisite manner and methode in
teachinge the practi-
soner the painte them even to the life.

Faithfully and trvely translated ovt of the Netherland-

dish originall into English for the comon benefite of those that vnderstand no other langua-
ges, and also for the benefite of others newly printed both
in the Latine and
French tongues all at the charges of the Author.

Printed at Utretcht, By *Salomon de Roy*, for *Crispian de Passe*. 1615.

On the other side of this title is printed an acrostic upon Crispian van de Passe, junior, from Thomas Wood, which is as follows :—

*THE BOOKE TO HIS READERS.*

C OME hither you that much desire,
R are flowers of dyvers Landes :
I represent the same to you,
S et downe vnto youre handes.
P resentinge them vnto your vew,
I n perfect shape, and faire :
A nd also teach to coloure them,
N ot missinge of a haire.
V sing such couloures as requires,
A master workemans will
N ot swarvinge thence in any case,
D eclaringe there his skill.
E ach flower his proper lineament,
P resentes from top to toe ;
A nd shewes both Roote, budd, blade and Stalke,
S o as each one doth growe.
S paringe no paines, nor charge I have,
E ach seasons flower to passe :
I n winter, Somer, Springe and fall.
V ntil this compleate was.
N ow vse this same for thy delight,
I nioy it as thou wilt :
O f blotts and blurrs most carefully
R efraine, or else t'is spilt. THOMAS WOOD.

FINIS.

Although neither of the four different copies I possess is quite complete, I can form out of them at least one complete copy ; this ought to consist of the following plates :—Spring, 1—54 ; summer, 1—20 ; autumn, 1—25, with two supplementary plates ; winter, 1—12. Second part, figures 1—120, on sixty-one plates. To give further particulars would necessitate too much time and space.

As before said, the family of De Pas were well-known engravers. Crispin de Pas, the father, was born in Zeelande, and was a very productive engraver. Eight hundred and sixty-one works are known from him, partly after Geldoopuis, Goltsius, F. R. Pourbus, Maubeuge, Martijn de Vos, Paul Morels, and others. He was assisted by his relatives, namely, by Crispin de Pas, jun. ; Simon Guilhaume, Crispina, Barbara and Magdalene de Pas. The plates of the *Hortus Floridus* are principally from the hand of Crispin de Pas, jun. ; however, he had collaborators among his family, at least plate 32 of the spring, L. Tulipa, alba cum rubr. flam. et funebut, is signed Willem Pas f. (Simon Guilhaume). By a closer examination of the work, which at present time does not permit me to make, some more particulars might be given ; nevertheless what is said above I suppose will satisfy the esteemed inquirer. *J. H. Krelage, Haarlem, Sept.* 14.

## CALANTHES.

IT would be difficult to find a more useful class of plants than the three Calanthes I shall here mention, as they bloom during the most gloomy part of our winter, their colours are distinct and bright, and their flower-spikes are tall, arching very gracefully, and the plants have a charming effect when dotted about amongst other plants. They continue to bloom for three, and even four months, and no plants are so easy to cultivate where a little heat is at command. These qualities should place them in the front rank of winter-blooming plants, while any one may grow them without incurring the expense of building Orchid-houses ; although those who have such structures may grow them to a higher state of perfection. Few Orchid growers would consider their collection complete if it did not include the Calanthes.

Those which I refer to are C. Veitchii, the red-flowering fine variety, from the eminent firm at Chelsea ; the next is C. nivalis, a pure white variety, and a favourite with every one ; the third is C. vestita, white with a ruby eye — in fact, there are two forms of this, one of which has a yellowish eye : both are pretty. The cultural details are very simple and easy of accomplishment if only heat is at command. But like all other plants they have their preferences. The plants like plenty of water when growing vigorously, good open compost in which to grow, a light position near the glass where the light may assist the foliage to expand and develope, a little bottom-heat in their earlier stages of growth, and a gradual ripening-off process which ends in a state of perfect rest.

By the time they have done flowering the roots will have fulfilled their duty, the foliage will have died away, when water should be entirely withheld until the bulbs recommence growth, when they should be shaken out of the pots and started afresh, commencing with the earliest indication of growth at the base of the bulbs, in March or April. As these grow and become strong they will push out new roots ; before this takes place the plants should be turned out of their pots and have the old soil quite removed. All the roots should be cut away (for these will be dead), the old bulbs should be removed from the new, for nothing will be gained by retaining these old bulbs, so, for the present, they may be laid aside. The potting process must be so well known that I need not enter fully into that. Sufficient to say that the pots should be clean and dry, well, but not heavily crocked. The compost should be half decayed fibry turf, broken into pieces, good peat, also broken up — about equal parts ; some sphagnum cut up rather short ; some crocks and charcoal broken up small, and then mixed altogether with the hand. Fill the pot nearly to the rim, take one or more bulbs and carefully place them on the compost, then pack them well round without injuring the young growths, shake some sharp sand over the surface, and the potting is done.

A little sand may be shaken in with the compost, while the pots are being filled, if the peat and loam should be of a heavy close nature. A few pieces of dry cow-dung may also be added if the other ingredients are poor ; but soft unctuous manure must not be added on any account. The potting business being finished, the plants may be set in any warm and somewhat dark place for a fortnight—by that time young roots will be pushing their way into the dry sweet compost, which will now require to be well watered. This must be done through a rose in a careful manner, so that neither bulbs nor compost shall be displaced. Very little more water will be required for some time. A wet, sour soil is one of the things the plants dislike, and must, therefore, be avoided.

But the question will now arise, Where are the plants to be put for their season's growth? I must answer by giving my own practice. I used to put them in an ordinary hotbed where the temperature was kept up by means of dung linings ; but this was a very troublesome affair, and risky as well, as makeshifts often are. Nevertheless I kept the plants there till the bulbs began to swell. I then removed them to a shelf in the stove, where they finished up their growth and flowered. But the best place I have found is in a small Cucumber house, one end of which we use for propagating purposes in early spring. The house is a lean-to, having a bed along one side, with pipes under it, a path through the centre, and shelves on the other side. The pots are set on the bed, and remain there till the bulbs are well formed and the bloom-spikes appear ; then they are removed to the shelves for a few weeks, and when the flowers appear they are taken to the cool side of the stove, where they remain till flowers and foliage die away, unless any are required for the conservatory, which is sometimes the case ; but this structure being for the most part filled with Chrysanthemums, is kept a little too cold for the Calanthes. The plants dislike strong sun, especially in their earlier stages of growth, and therefore must be thinly shaded. They dislike cold water, either at the roots or over the foliage ; therefore all the water used for them should be about the same temperature as the atmosphere of the house. They dislike a dry atmosphere, sudden changes, cold draughts, dirt on the foliage, rough handling, and a low temperature all the while they are growing. A range of from 60° to 80° for day and night, sunshine or clouds, will answer at that season ; 50° to 60° will do for the flowering season, and 50° to 55° for resting. Under these conditions, and with ordinary care, they will grow very freely, producing fine spikes of bloom. I have just measured a bulb of C. Veitchii, and find it 12 inches high and 8 inches in circumference. C. nivalis is as large, and most of them are pushing two spikes of bloom from each bulb. By the time they have finished up I dare say the strongest bulbs will be 15 inches high. I consider this very satisfactory, and expect to see fine blooms by-and-bye.

Now a word about the old bulbs, which may be laid aside. If an increase of stock be required, and these are breaking, they may be potted up just like the others, only in smaller pots or more of them in a pot,

and some useful plants may be thus obtained, which will probably bloom the next autumn, and will certainly do so the following. But if a sufficient stock be already potted up and growing, or if these old bulbs are not breaking or likely to do so then throw them away. About the time the spikes are pushing well up and showing their flower-buds the foliage begins to fade, get spotted and die away, which is rather unfortunate, so far as the look is concerned.

But the skill of the cultivator must be brought to bear here, and while every care should be taken to retain the foliage in all its beauty as long as possible, yet we must not try to subvert Nature in this case, but rather assist and improve her, if we can. Shortly after the plants have been potted and are set in their growing quarters take some old ripe fronds of Maidenhair or other Ferns and lay them on the pots to remain there for a week or more, and by-and-bye the result will appear, for by the time the foliage begins to die off, there will be some beautiful young Ferns peeping up amongst it.

But a word of caution must be given, for as the Calanthes are the things to be cultivated, they must have the first consideration; so too many Ferns must not be allowed to grow, neither must water be given merely to keep the Ferns growing when it is not required by the Orchids. The Ferns, however, will be very pretty for a time, and as the drying off process goes on, and water is withheld, they may be cut away to do duty with cut flowers. When the plants have done flowering they should be kept quite dry and stored away till potting time comes round again. *N. Blandford.*



Fig. 86.—Regular peloria of foxglove. (see p. 400.)

## TUBEROUS BEGONIAS AT SWANLEY.

A knowledge of what has already been accomplished by hybridising would naturally induce caution in placing a limit to the possible in the raising of new varieties; still those who were most sanguine would scarcely have credited that the present race of tuberous Begonias, in their all but endless forms and shades of colour, could have sprung from the few, comparatively insignificant, species that the hybridisers had to work from; yet year by year the raisers have gone on bringing out new varieties that are so far in advance in the habit of the plants, the quantity of their flowers, and the brilliancy of their colours, that the produce of each succeeding season shows a marked improvement on those before existent. Those who are fond of varieties that bear gigantic flowers can scarcely fail to be satisfied with some of the new sorts of last year and the present; yet it is more for the improved shape of the flowers, substance in the petals, brilliancy and purity of the colours, that most growers will prize the new varieties.

Some of this year's seedlings at Swanley, of single varieties, whilst being perfect in shape and the flowers large enough to satisfy reasonable ideas, are a decided advance in the brilliancy of their colour, which in the case of several of the reds and crimsons vies with the intense shade present in a few of the highest coloured Roses. In yellows and whites, purity of colour combined with form alike stand out ahead of those that have hitherto been accepted as the best sorts. The sturdy, short-jointed habit of growth in the plants, with their flowers borne erect above the foliage, is such as to leave nothing to be desired in this direction. The Swanley seedlings occupy a number of the long span-roofed houses, which collectively present a sheet of bloom through the summer such as is equalled by few other plants. Amongst quantities of new kinds of the present and last season's raising, which I recently had an opportunity of seeing, the following are the most remarkable:—

*Crimson Circle.*—Bright crimson, veined with intense scarlet. The flowers are as circular as a well-developed Christmas Rose, and about the same size.

*Rosy Circle.*—Another broad-petalled circular flower; colour intense rose.

*Queen of Roses.*—A bold, full-sized flower; colour deep rose, shaded with magenta; habit unusually robust and short-jointed.

*Magenta.*—Flowers full-sized, deep magenta in colour.

*Floribunda.*—Medium-sized flowers, vivid scarlet in colour, and produced in such quantities as to nearly hide the foliage.

*Cannell's Favourite.*—Flowers medium in size, colour bright crimson, the petals overlapping each other so as to scarcely show where they meet.

*Earl of Bessborough.*—Medium-sized flowers, ground colour lemon, outer edge of petals red, centre pale violet; a very distinct and beautiful variety, and a profuse bloomer.

*Salmonea.*—A full-sized flower, beautiful in form; the colour is a peculiar shade of salmon. One of the freest bloomers.

*Rose Perfection.*—This sort bears an abundance of large finely-formed flowers, bright rose in colour.

*Crimson King.*—Flowers of unusual substance in the petals, which in most cases come in fives, one more than the usual number. The colour is deep crimson, with magenta centre.

*Mrs. Nash.*—Rosy-crimson; a fine and very distinct-looking sort.

*Pink Perfection.*—A finely formed flower; bright pink in colour.

*Mrs. Lipthorp.*—Another finely formed flower; colour bright crimson, shaded with magenta.

*Indian Chief.*—The flowers of this variety are of remarkable substance, standing when cut, considerably longer than any sort I have met with. Colour indian-yellow, of a more decided shade than I have before seen.

*Violet Gem.*—A grand flower, all aglow with violet colour, such as is present in the centre of some of the large bloomed kinds of Cactus.

*Countess of Bessborough.*—Flowers circular, of medium size; clear bright yellow in colour.

*Crimson Perfection.*—A beautiful circular flower, brilliant crimson in colour; the flowers are borne quite erect. One of the finest amongst the collection.

*Queen of Yellows.*—A pure yellow, deep in shade; excellent form and good habit.

*Mr. H. G. Murray-Stuart.*—A flower of immense size, with very broad petals; colour bright pink.

*Glowworm.*—A full-sized, beautifully formed flower; colour bright ruby-crimson. There is nothing amongst the brightest of the zonal Pelargoniums that surpasses this Begonia for brilliancy of colour.

*King of Begonias.*—Flowers of large size, unexceptionable in shape; colour reddish-crimson.

*Wonderful.*—A fine sort, alike for the size, substance, and form of the flowers, which are bright red in colour.

*Rosea magnifica.*—A fine flower every way; colour bright rose.

*Perfection.*—Another fine shaped flower, bright glossy red in colour.

*King of the Crimsons.*—A large bold flower; deep crimson, distinctly shaded with maroon.

*Rosy Morn.*—This is one of the brightest flowers of its colour, rosy-purple, and of good shape.

*Pink Perfection.*—One of the best habited sorts that has appeared, and a very free flowerer; colour soft pink.

*Atchalus.*—An immense flower, with very broad petals; colour bright red.

*Leviathan.*—An enormous flower, over 6 inches in diameter; colour salmon-rose.

*Charles Fellows.*—A scarlet flowered variety, with stout, thick, broad petals, each of which often measure 2¾ inches across.

*Magog.*—Dark crimson in colour, flowers almost circular, petals of great size, more than 3 inches wide.

### Double Varieties.

Double-flowered Begonias, like double flowers of other things, find many admirers, one of their chief merits being in their greater endurance. Yet with Begonias, except when the flowers are required for cutting, this is not of so much consequence as in the case of plants that do not give a succession of bloom, as every bit of growth they make produces flowers which keep on opening so as to take the place of those that drop in a way that keeps up an uninterrupted succession from the time the plants begin to bloom until there is not enough warmth and light in the greenhouse to enable them to continue flowering.

As those who have any acquaintance with Begonias do not require to be told, there are two distinct forms which the plants assume when they appear in double form. In one, which might be called the Pæony-formed division, the flowers have confused centres like those of a double Pæony; in the other, that may be termed the Rose-petalled section, the petals are even and imbricated, like those of a well-shaped Rose. By most people the latter—although not so large as the former—will be voted the most attractive. Double varieties do not so far seem to appear so frequently with the raisers in this country as on the Continent. Amongst the best doubles grown at Swanley may be named:—

*Mons. de Venue.*—A glossy crimson, large in size, and a free bloomer.

*Louis de Goussaincourt.*—A very large sort, with bright pink flowers.

*Madame Castaignez.*—A distinct and effective sort, with large flowers; bright pink in colour.

*Ruhm von Erfurt.*—A medium sized variety, with rich orange-scarlet flowers of beautiful form; a free-bloomer, and of good habit of growth.

*Virginalis.*—One of the best of the double white varieties.

*Blanche Ducal.*—A beautiful flower; colour creamy-white tinted with blush.

*Madame Alfred Wesle.*—A charming sort, buff, with purple shaded centre.

*M. Legouve.*—Buff, tinted with blush.

*Grandville.*—Outer petals silvery-white, centre salmon, edged with pink—a free erect flowering sort.

*Madame F. Gall.*—One of the largest flowered varieties—a free bloomer; colour pale salmon, with orange centre.

*Madame Cenevre.*—A dwarf compact growing variety, with salmon-shaded rosy flowers.

*M. Truffaut.*—A large variety, with flowers that are a combination of salmon, suffused with red and orange.

*John Fox.*—A distinct looking variety that produces its well shaped flowers freely; the colour is not easy to describe, but may be set down as a bright shade of salmon, suffused with pale blush.

*Madame Arnoult.*—One of the best sorts, with finely shaped flowers—habit dwarf, a free bloomer; colour blush-pink, deepest at the outer edge of the petals.

*Gabrielle Legros.*—A large-sized variety, with imbricated flowers, which are produced freely; colour creamy-white, changing to pale yellow.

Quantities of tuberous-rooted Begonias are planted out in the open ground, some in beds consisting of a single variety, and others mixed; this is done with a view to prove the best kinds for bedding to meet the different requirements of those who want beds all of a colour, and of those who prefer mixtures of such sorts as are best suited for outdoor cultivation, and which it may be well to state are those that bear comparatively small flowers. Amongst the sorts for a bed of one colour are :—

*Alba floribunda.*—The best white, very free, and a compact grower, doing well in the open air.

*Worthiana.*—Pale red, a dwarf compact grower, that flowers profusely from the beginning to the end of the season.

*Louis Bouchet.*—A small flowered, double red variety, about 10 inches high. A bed of this sort, from cuttings struck this year, was a complete mass of bloom.

*Yellow Bedder.*—A pure yellow, with a profuse flowering disposition. This plant has the peculiar habit of keeping or throwing up blooming growth from the bottom to an extent that all but covers the leaves with flowers.

Mr. Cannell is now trying what can be done in the way of crossing B. Martiana grandiflora with some others of the family. This is a comparatively little known plant, and is one of the most distinct and pretty of all the kinds known to cultivators. It has a branching, erect habit, and in the character of its growth is nearer that of B. fuchsioides than any other with which I am acquainted.

DAHLIAS.—Amongst other things well managed at Swanley are Dahlias, of which about 2 acres are grown. Soil and situation, combined with the treatment they get, appear to just suit them; the plants are unusually dwarf in growth, yet very strong, being kept well thinned out. When I saw them just after they had felt the effects of the recent rains they were bearing quantities of large finely-formed flowers. A large batch of seedlings of the Juarezi type were just beginning to open their flowers. Of single varieties all the kinds worth cultivating are grown.

CHRYSANTHEMUMS are now receiving an extra amount of attention, several long span-roofed houses are being built to accommodate them when in bloom. Three thousand are grown in large pots, and a much greater number in small ones, so as to be in a condition to send away as required all on through the summer and autumn, during which season quantities are despatched to America, Australia, and New Zealand. When sent to places at long distances, the tops are reduced to about half their length, and the leaves removed, leaving a good length of bare stem, in which state they are found to bear the journey without suffering much. Tuberous Begonias and Chrysanthemums are the plants most in demand now in America and the distant colonies. *T. B.*

PROFESSOR ASA GRAY, of Cambridge, Mass., U.S., has lately been reminded by a congratulatory letter from the oldest natural history society of Germany—the Imperial Academia Leopoldino-Carolina Naturæ Curiosorium—that he was elected a member of it fifty years ago.

# Orchid Notes and Gleanings.

STENOGLOTTIS FIMBRIATA.

IN spite of the smallness of the flowers of some Orchids the whole aspect of the plant, together with the inflorescence, often carries an indisputable and convincing charm with it that captivates the beholder, whether an Orchid lover or otherwise. The plant under notice is the only known species of its kind, it is terrestrial in habit, and hails from South Africa, where so many species of like character abound. It is, moreover, a comparatively recent introduction, and whether it becomes popular and gets disseminated or not, its merits entitle it to such distinction. The leaves are lanceolate or oblong, collected in a radical rosette, spreading on the ground, deep glaucous green, and heavily spotted with black or purplish-black blotches. The delicately coloured rosy-pink flowers are arranged in a somewhat secund manner on a leafless bracteated stem. The labellum is spotted with purple, and deeply divided into three narrow segments, and is apparently the only thing suggesting the specific name. There is a figure of the plant in the *Botanical Magazine*, t. 5872, and a flowering specimen in the Orchid-house at Kew at the present time.

ZYGOPETALUM WENDLANDI.

The species of the section to which this belongs are generally seen in gardens under the name of Warscewizella. The scape is short, ascending, and 1-flowered. The flower is of medium size, and, like the most of its congeners of the same group, presents a rare and delicate beauty that readily captivates the fancy of the beholder. The sepals and petals are white, and so is the greater part of the labellum which is erect and turned up at the edges in a semi-tubular fashion. There is a violet blotch in the throat and three longitudinal darker lines along the middle, while a delicate reddish-purple band surrounds the margin, ultimately fading to pink. The plant is abundantly furnished with leathery, shining, deep green leaves, even in the flowering season, and the long lasting properties of the flowers are amply demonstrated by a plant in the cool division of the Orchid-house at Kew, where it has been flowering since the first week in August at least. *J. F.*

EPIDENDRUM PRISMATOCARPUM.

This species, when well grown, is distinct and beautiful. The plant alluded to by Mr. Crawshay I saw exhibited at the flower show at Sevenoaks, where it was awarded a 1st prize. It was a very good variety, but not the best form. The best variety I have ever seen was the one exhibited by Mr. Philbrick, Q.C., at the Regent's Park exhibition in June, 1884. The common forms are not very striking, and do not produce more than eighteen or twenty flowers on a spike. Mr. Williams in the *Orchid Grower's Manual*, says it produces about fourteen flowers on a spike. The species is easily grown, and as it flowers in July, and remains in bloom a month, it should be grown in every collection. A small plant will grow into a good specimen in a few years. It should be grown in the Cattleya-house, in pots, and in the usual Cattleya compost. When making their growth, water freely, and when at rest give just enough water to keep the bulbs from shrivelling.

E. VITELLINUM MAJUS.

This has now become so cheap that anybody may obtain it, and it is also one of the plants that can easily be grown. It is presumably a cool-house species, but my experience with it does not suggest the cool-house as the best for it, although it will grow there. I find the leaves become spotted after a time owing to the cool moist atmosphere in autumn when the growths are being matured. It has to be potted in peat and sphagnum the same as Cattleyas, but must by no means be over-potted. The best varieties produce large branched spikes and most brilliant coloured flowers. As usually seen at exhibitions, a dozen or more plants of small size and most bumble spikes are crammed, or rather wedged closely together into a good sized pot, which gives one no idea of what the plant is when well grown.

E. VITELLINUM

succeeds it in our Cattleya-house. This is now in flower, and although they are similar in form and colour, the character of the two plants is very different. The majus form, makes its growths and sheaths in the summer, while those of the previous year are developing their flower-spikes. This normal form is very different, it also makes its growth in the summer, and the flower-spikes are produced from these growths at once—indeed, the flower-spikes come with the growths. In E majus the growths remain dormant a year before the spikes are developed. We have it now very beautifully in bloom. The spikes are 20 inches long, and have twenty-two flowers on each.

E. NEMORALE MAJUS

is another species of great merit, producing its long handsome spikes of flowers in July. There is no more elegant species in the genus than this. The finest plant I ever saw of it was exhibited in a group of Orchids from the collection of Sir T. Lawrence, Bart., at the Botanic Gardens, Regent's Park, when the late Mr. Joseph Spyers had charge of it. It was furnished with with about a dozen spikes of its beautiful rosy-lilac flowers. The spikes were about 4 feet in length. It is seldom in flower before July, but in that month it is one of the very best exhibition plants; it is so easily carried to the exhibition, and when there it is not easily matched. I grow it in the Cattleya-house, and it requires exactly the same treatment as the others I have named.

E. BICORNUTUM.

Were I to select another species of Epidendrum to add to the above it would be this delicately beautiful species. It produces a dozen flowers on a spike, pure white, with the exception of a slight spotting on the centre of the lip. This species is rather difficult to manage, although one would not think so from the sturdy appearance of the plant. It will flower once or twice, but after that begin to lose its vigour. Mr. Williams states in the *Orchid Manual* that it succeeds well on a block of wood without moss of any kind, and had so flowered six or seven years in succession. It ought to be grown in the warmest house, and will succeed for a few years potted in peat and sphagnum.

RENANTHERA COCCINEA.

Mr. T. Banks does not say how his plant of R. coccinea was potted. It seems to succeed best when the plant is encouraged to cling to a Birch tree with the bark on. The well-known specimen in the conservatory at Chatsworth, when I saw it some years ago, was trained to a Birch stem as thick as a man's leg, and about 15 feet high or more. There is now a handsome example in the Cattleya-house in Messrs. Veitch's nursery at Chelsea, with three flower-spikes. A stout Birch stem, about 6 feet long, has been inserted in a large pot filled with broken potsherds. The roots of the Renanthera are amongst the drainage, and the plant is clasping firmly the Birch tree, and enjoying its position. Those in the possession of newly-imported plants would do well to take a lesson from the Chatsworth plant, and the one I have alluded to in Messrs. Veitch's nursery. In the large Cattleya-house in this nursery, Lælia elegans alba is beautifully in flower, and a charming variety of the species it is. The shy-flowering Cattleya speciosissima is also in flower; so also is C. Gaskelliana, proving itself to be one of the most persistent of the genus, as different specimens have been in flower here for nearly three months. C. Eldorado is also very beautiful at this season, and so distinct, by its orange throat, and the perfume of the garden varieties of Narcissus tazetta, which it emits most powerfully in the morning. *J. Douglas.*

# Florists' Flowers.

THE AURICULA.

I HAVE not alluded to any of the hardy florists flowers since the end of July, but the time has now come in which it will be necessary to prepare the whole of them for the winter. The Auriculas are now in the height of their autumn growth, and are almost as vigorous as they were in April. In a moderate sized collection not all of the plants will be growing vigorously; some few choice specimens, mostly old kinds, such as Complete, Colonel Taylor, Freedom, Miss Arkley, &c., may have a languid inactive growth about them, which may make their owner uneasy. Probably the plants are suffering from decay of the main stem; the disease or decay

attacks the stem underground either at the side of the stem or at the end of it. In either case the only way to save the life of the plants is to shake them carefully out of the soil, and with a sharp knife cut away all decay from it. Such plants will not make vigorous flowering specimens next season, but they will in time give out offsets, which may grow with great vigour if the old plant does not. Plants potted now must be very carefully watered. Do not give any for a week at least. Remove all flower trusses as soon as they can be pinched out with the finger and thumb. It is quite necessary that the plants should be cleared from greenfly; the pest will now be found in the centre of the plant, or clustering round the offsets under the outer leaves. If there is any of the mealy or woolly aphis clustering round the neck of the plants it ought to be destroyed by brushing it out with a stiff brush. A lamp is necessary at night to look around the frames for caterpillars, maggots, and slugs. If all these troublesome pests are destroyed now, it may save many a tiresome search when the weather is rough. The small offsets that have till now been kept in a shady place, may be removed to an open one.

### Carnations and Picotees.

The last week in September, or the first in October, is the best time to take off the layers from the parent plants and to repot them. I have tried potting soil with and without manure, but I fancy they do much better with a barrowload of good decayed stable-manure mixed with it, and as much leaf-mould and sand. Carefully remove the layers, and pot one in a small 60 pot or two in a large one. Pot the plants rather firmly, place them in a cold frame afterwards, and do not give any water for twenty-four hours after they are potted. Now is the best time to order plants, either to form a collection, or to add to one. They can be sent home at this season packed in paper with a little damp moss about the roots: fifty pairs of plants can easily be packed in a box of moderate size. The plants should be potted as soon as they are received: they will not do better anywhere at this season than they will in a cold frame. As soon as the plants are fairly established, which will be in a week or ten days, air must be freely admitted—the lights to be removed altogther in fine weather. The plants will be well established before severe weather sets in; if they are not established early in the winter, they will not flower very strongly the following season. Those who neglect to purchase their plants at this time will require to have them sent home after November in the small pots in which they are established. This makes the carriage and packing more expensive. If there are insects on the plants they may be destroyed by dipping them in soft-soapy water.

Tree or perpetual flowering Carnations that may up to this time have been left out-of-doors should now be taken into the greenhouse in order to develope their flowers more perfectly than they would out-of-doors. The plants intended to flower after Christmas and onwards during the spring months must now be repotted. Our plants are in 5-inch pots; from these they may be potted into 7 or 8-inch. We have besides some large plants that have been in a corner of the greenhouse for more than twelve months, and almost any day flowers may be cut from them. The plants have not been potted since last year; but they may be seen to now with the others, and as they are forming fresh growths they will flower during the ensuing winter. Like the summer-flowering varieties they suffer from the attacks of greenfly, but in both cases a fumigating with tobacco-smoke will destroy them, or dipping as advised above. *J. Douglas.*

## Plants and their Culture.

### STOVE CLIMBERS.

Such of these as may have ceased to yield many flowers should be thinned out where their growth has been luxuriant (we are here alluding more particularly to those that are trained up rafters and wires), the wood will thereby have a better chance of becoming well ripened, and the plants that are grown beneath them will have the advantage of as great an amount of light as the season affords. Any Stephanotis, for instance, that has been flowering and growing freely during the early spring and summer months, will have an amount of growth which can be advantageously removed; if done now it will tend to strengthen the early flower trusses which are obtained from the wood of the previous year's growth, but not from that of the current season. Where an early growth has been made these trusses will already be in a forward stage, and a plant in this stage ought to be kept drier at the root during the next three months, when by reversing the treatment and giving a slightly increased temperature an early crop of bloom may be obtained. The shoots of Allamandas that have not by this time set for bloom may also be thinned out. Dipladenia boliviensis will continue to flower for a considerable time yet, but it must have as much room as can be afforded it on the roof, and at the same time not be overrun by other climbers; Ipomœa Horsfalliæ is well worthy of every attention, it should be trained rather more thinly than other climbers because of its dense habit of growth. Its brilliant flowers will tend to lighten up the stove during the dull season.

All the climbers should have a thorough overhauling and cleansing of any insect pests prior to the stove being rearranged for the winter. Insects are bad enough anywhere, but when allowed free course on the suspended climbers in such a way that their excreta is permitted to fall on the plants beneath them, this nuisance becomes even greater. Climbers in pots and on trellises, when they cease to produce bloom should also be brought into closer compass. If they can be accorded a warm, dry pit, in lieu of the stove proper, so much the better for the appearance of the latter, for when water is withheld and yellow leaves in quantity appear, the look of the house is not improved thereby. The first opportunity should be embraced of having the glass (both interior and exterior) well cleansed, and the painted woodwork washed, so that everything may be sweet and clean before the plants are stored in their winter quarters. *J. Hudson, Gunnersbury House, Acton, W.*

## Fruits Under Glass.

### VINES AND BORDERS.

The making of Vine borders and the removal of existing ones are matters of importance in connection with the cultivation of Grapes under glass which at all times should receive particular attention when found necessary. In the formation of a border for Vines, in the first place, it is usually necessary to concrete the bottom of the border in order to prevent the roots going downwards. This material should be at the least 3 or 4 inches thick, and extend to a breadth of from 12 to 15 feet in front of the house; drains should be formed on its surface with ordinary 3-inch pipes, in order to carry off the excess of water that will at times accumulate. The concrete should then be covered as far as the border will be then made, with 15 inches of rubble, and on this a layer of closely fitted fresh turf sods with the grassy side placed downwards should be arranged. The composition of the soil for the border will vary according to the nature of the ingredients of which it is composed, in any case a good compost can be formed with about two-thirds of the top spit from a rich pasture with a fair proportion of bones or bone-dust, brick rubble, burnt earth, road scrapings, and animal manure added.

These things should be prepared beforehand and be well incorporated together by turning over the heap several times after which it should be put into a heap, and protected from the rain. Of late years, the making of a Vine-border is not considered to be such an undertaking as it was formerly, when we were instructed to consider the work we had completed, was to last fifteen or twenty years. Scarcely any one now-a-days contemplates such a thing; but, notwithstanding, there are Vines occasionally to be met with which have existed for that length of time, but the roots of these are not solely to be found within the limit of the border that was originally made for them; and the fact of their flourishing year after year, and producing full crops of fine Grapes, goes to prove that the roots have extended into the surrounding soil, and in which they find those elements of nourishment which are indispensable to their well-being.

Such Vines should be encouraged by good mulchings of manure being placed above where the roots are known to exist, and by any other means possible, and in no case should the roots be interfered with so long as the Vine continues in vigorous health. In the case of our Vines, as soon as any indication of want of vigour, showing itself in lack of finish, is observable, I go to the roots as being the true source of the evil, and I find by partially lifting them a means of again increasing their activity, and restoring vitality, and therefore recommend the practice, and likewise that of restricting them to a limited and not over-large area of border, 12 or 15 feet being ample as to width. Now is the time to give attention in this way to ill-conditioned Vines, or those in an unsatisfactory state, by opening a trench at the front of the border and carefully taking away the old soil from the roots, and after rectifying any defects in the drainage, proceed, as in the case of a new border, with the sod at the bottom, and after examining and cutting back some of the roots, bring the rest up to within a foot of the surface of the new material, water them and press them in firmly by hand, fill up the border, and protect it by-and-bye with a covering of manure about 9 inches thick. When this is done the future results can be looked forward to with confidence. *G. T. Miles, Wycombe Abbey.*

## The Hardy Fruit Garden.

### PREPARATIONS FOR PLANTING.

Walls in kitchen gardens should be inspected, and every available space should be marked out and prepared for planting next month. Young trees can be bought cheaply, and may be trained in any form thought desirable, and they get acclimatised to the position much better than when purchased from the nursery in a larger state. In planting trees, to be ready for removing to more permanent quarters when wanted, it is a good plan to plant on a prepared surface, which may be done as follows:—Take out the ground, say 18 inches deep, and fill up the bottom with 4 or 5 inches of any rubble at hand, such as small stones, brickbats, or cinder ashes; have this beaten down firm, and on the top place four or five common slates; these will keep the roots from going down. Then add about 15 inches of soil, which should be prepared beforehand, and should consist of road-scrapings, turfy loam, and burnt ashes. When planting, spread the roots evenly over the surface of the soil and cover them lightly, but firmly. When all is finished, place a good dressing of rotten manure on the surface. Trees planted in this manner early in the autumn seldom require any water during the following summer, and as a rule do well. The fresh soil and firm planting encourage fibrous roots, which can be easily lifted when the trees are required to fill up more permanent spaces on the walls. Last December we removed a large number of trees which had been thus prepared two and three years ago, and have not lost one, and many of them have borne a good crop of fruit this season; they consisted of Peaches, Apricots, Nectarines, Plums, and Cherries. Every means should be adopted to get the wood on wall trees thoroughly ripened; all useless growth should at once be removed, and any shoots required to fill up spaces should be nailed to the walls.

### Small Fruits.

Strawberry beds should have all runners cut off, and newly formed beds should now have a heavy dressing of rotten manure placed on the surface of the beds, to remain all the winter.

Raspberry canes should be thinned out, and all the old wood be removed, to allow of the thorough exposure of the future bearing canes to sun and air.

### The Gathering and Storing of Fruit

will still require much care and attention. The riper the fruit is before being gathered, the better the quality will be, and as a rule it will keep longer than when gathered in a half ripened state. I have often been asked the reason why Apples and Pears were keeping so badly, when the only reason was that they had been gathered in an unripe state. I know that many are tempted to gather Apples and Pears when unripe for fear of a high wind blowing them to the ground and rendering the best and finest fruits useless. Where there is any danger of this the trees might be gone over, so as to remove the very ripest and largest only. *J. Smith, Mentmore, Bucks.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| MONDAY, | Sept 28 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Sale of Dutch Bulbs, at Stevens' Rooms.<br>Select Flowering and Established Orchids, at Protheroe & Morris' Rooms. |
| TUESDAY, | Sept 29 | Clearance Sale of Plants, Live and Dead Stock, at the New Eccles Nurseries, Winchester, by Protheroe & Morris. |
| WEDNESDAY, | Sept 30 | Sale of Dutch Bulbs, at Stevens' Rooms. |
| THURSDAY, | Oct 1 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Oct 2 | Sale of Imported Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Oct 3 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE exact period of time that it would take to convert a Foxglove into a Campanula may be left to Mr. GRANT-ALLEN to determine. Far be it from us to deny the abstract possibility of the occurrence. Nature is so plastic, and so slight a shake of the kaleidoscope would be necessary, relatively speaking, that it would be very unscientific to deny the possibility. The very earliest, the first embryonic stages, are alike in the Campanula and in the Digitalis. Growth goes on on the same lines for a time, and then comes a change—one goes one way, one another, the divergence becoming wider and wider as the time goes on, till at length in the fully formed flowers there are differences so great that no one who had not the imagination of a poet with a sublime disregard of facts, or of a very advanced revolutionist more fond of speculation than of research, would dream of assuming a common origin, or point of departure for organisms so widely different.

But imagination, to be of any value, must have a rocky, substantial foundation of material fact, otherwise it degenerates into superstition or idle speculation, both of which are inimical to science and progress. For instance, if any one looking at the figure (fig. 86, p. 397), obligingly drawn for us by "E. V. B.," should imagine that a Foxglove had suddenly been converted into a Campanula, the imagination would be at fault, because, however close the superficial resemblance might be, the slightest examination of the details would suffice to show the fallacy. Even in the sketch, where detail was not studied, there is no indication of the inferior ovary which all Campanulas have, and we doubt not the interior arrangements of the flower (which we had no opportunity of seeing) were widely different from those of a Campanula.

But it may be said, this is a "sport," or more technically a reversion to the form of that ancestral progenitor from which both Campanulas and Foxgloves have descended. We respectfully submit that it is nothing of the kind. It has no more of the Campanula lineage in it than has Big Ben of Westminster; it is hardly more closely related to a Campanula (except in the fact that both Foxglove and Campanula are plants) than the finger of a glove or a thimble is allied to a Digitalis. This is mere assertion, it may be said. Well, we cannot put the specimen itself into the hands of the reader; we cannot give him or her dissecting needle and magnifying glass, and so we cannot help being didactic and dogmatic, and asserting roundly, but without fear of contradiction, that this Foxglove has none but a purely superficial resemblance to a Campanula. Failing the means of proving our assertion, we are obliged to fall back on former experience. Many and many a similar flower have we seen, and cut up, but they all proved Foxgloves, and not Campanulas. In fact, the state of things represented in fig. 86 is, in all but one particular, not uncommon in Foxgloves—that one particular is the pendulous direction of the flowers. An ordinary Foxglove does hang down, the upper side of the flower-tube is shorter than the lower, giving the flowers the appearance of having been sliced away; and the disposition of the stamens and the arrangement of the spots on the flower all have reference to the visits of insects and the mechanism they set in action to ensure the production of seed. The malformed cup-shaped flowers which are so common are usually erect and more or less reniform and regular in their construction. The present flower, regular in outline, or nearly so, hangs down, and thus increases the resemblance to the Campanula. Generally speaking, the erect, cup-shaped flower of the Foxglove results from the blending, at a very early stage of development, of several flowers into one. The presence apparently of seven lobes to the corolla in the figure may be an indication of a similar composite origin, but on the whole we believe the Foxglove in question to be really what it appears to be—a "regular" Foxglove, comparable to the regular Gloxinias, now so common, but which, unlike this Foxglove, have erect flowers.

An ordinary Foxglove is, of course, irregular, some of its component parts grow faster than others, or, what comes to the same thing, some stop growing while others pursue their course. The result is an oblique or irregular form of flower. Now let us suppose that the corolla lobes, instead of having grown thus irregularly, grew equally, none taking the precedence of another, but all growing uniformly: in such case we should have such a flower as that represented. This Campanula-like Foxglove, then, is merely a Foxglove in which, from what cause we know not, uniformity of growth has prevailed. It is, in the language of botany, a case of "peloria." Now peloria is of two main forms. In the one an habitually irregular flower like a Linaria becomes regular by the increase of its irregular portions. Instead of one spur it has five—that is irregular peloria. But suppose no spurs at all are formed, then, we should have an habitually irregular flower becoming regular by the non-development of its irregular elements. For us this constitutes regular peloria, and the Foxglove before us, so far as we can judge from the figures only, enters into this category. It is a Foxglove in which elements, habitually irregular, have developed uniformly and evenly. We submit that this is a much simpler and intrinsically probable an explanation than that according to which this is a Foxglove on the way to becoming a Campanula, or a Foxglove suddenly manifesting the characteristics of a suppositious Campanula ancestor.

It is a very curious psychological fact, that persons with only a very slight or with no acquaintance with scientific facts and theories, frame the most astounding hypotheses, and seem deliberately to prefer and to adopt not what is the most probable and the simplest, but what is the least probable and the most complex explanation. The scientific imagination of a NEWTON, a GALILEO, a FARRADAY, a DARWIN, simplifies everything it deals with—crystallises the most obscure and complex phenomena into the clearest and most fecund of theories.

Of so opposite a character are the results of the mental processes of those who do not know how to use their imagination, that we could fain wish that nobody but a born poet or a born man of science might henceforth be permitted to indulge in speculation!

—— DR. H. W. REICHARDT, Professor at the High School, Vienna, and Director of the Royal Herbarium, died recently quite suddenly, at Modling, near Vienna.

—— MR. CHAMBERLAIN IN SCOTLAND.—As is pretty generally known amongst his friends, Mr. CHAMBERLAIN is an ardent lover of Orchids, and at Highbury, near Birmingham, possesses a fine collection of these flowers. During his recent visit to the North it was therefore but natural that he should be the guest of another well-known Orchid amateur, Dr. PATERSON, of Bridge of Allan, whose collection is of world-wide fame. The right hon. gentleman passed one night at Fernfield, the Doctor's residence.

—— CYCLAMEN BLOOM DOUBLED.—From Mr. THOMAS WARE has come a curious instance of doubling, there being two distinct ovaries, which were united at their base. The doubling in the petals was not quite complete.

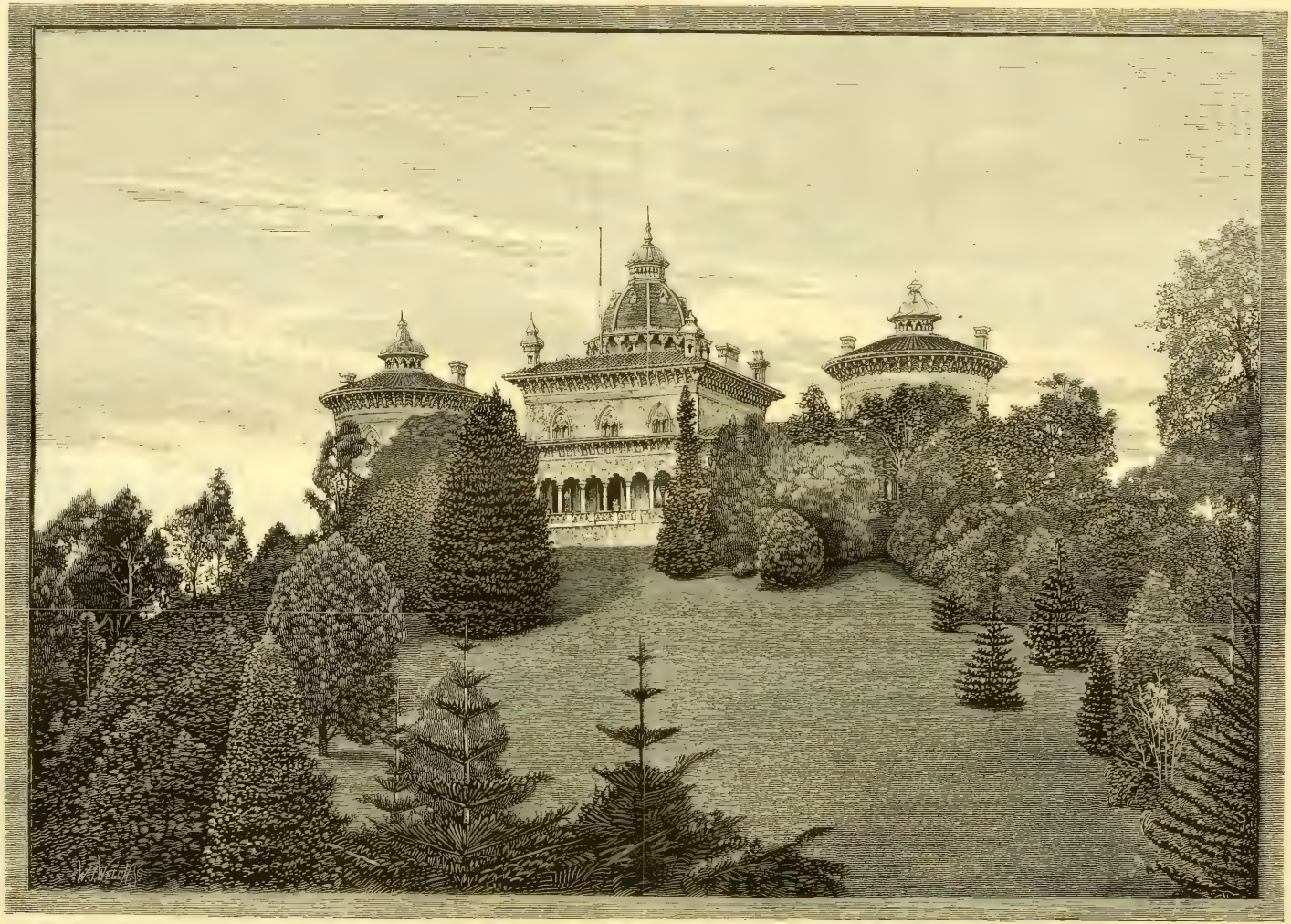
—— SCIRPUS HOLOSCHŒNUS VAR. ZEBRINUS.—We do not call to mind having seen this elsewhere than in the Jardin des Plantes at Paris. It is a compact tufted plant, with slender stems as thick as a crow-quill, alternately banded in a transverse direction with white and green, after the fashion of Eulalia zebrina among grasses, and of Scirpus Tabernæmontani var. zebrina (Juncus zebrinus of gardens) amongst Scirpi. For general gardening purposes it is far superior to the last named plant, as it will thrive in a dry border, where that would not exist. The green-leaved type only exists in a wild state in the British Islands on the sandy sea-coasts of North Devon and in the Channel Islands.

—— "CAT" PLANTS.—Most of our readers—at any rate those who reside in villa gardens near large towns—know to their sorrow what an extraordinary attraction a fine bed of, say, Nemophila insignis is to the harmless (?) necessary cat. A considerable number of plants possess similar properties; among them are Actinidia Kolomikta (a Japanese climber, which frequently requires protection in many places until large enough to withstand the assaults of these creatures), and Teucrium marum, an interesting European herb, which we lately saw growing in the Brussels Botanic Garden beneath a stoutly-made iron cage-like trellis. On enquiry we found that, in order to keep this species alive, it was necessary to keep the cats at bay; when the plant is grown without some such protection it soon succumbs to their attacks.

—— FOSTER'S SEEDLING AND TOKAY GRAPES AT SOUTH KENSINGTON FRUIT SHOW.—The statement made by our reporter in regard to these Grapes at p. 341 is perfectly correct. They were disqualified, not being Foster's Seedling. The judges at the Exhibition on the 8th inst. were subsequently permitted to award them an extra 1st prize on account of their very handsome appearance; but that did not remove the disqualification—so that a complaining correspondent's "facts" are not quite correct. No disinterested person who had the opportunity of examining them and tasting them in comparison with Foster's Seedling and the White Tokay could fail to trace the resemblance to the latter. Our correspondent when he states that the "white veins running longitudinally under the skin" are noticeable peculiarities of Foster's Seedling, "but never in White Tokay," simply makes a mistake, the reverse of it being actually the case, White Tokay being much veined, and Foster's not so. Mr. ALLAN'S examples were much veined, so were the White Tokays exhibited, and so likewise are the examples of White Tokay sent to us by Mr. WALLIS, of Keele Hall, which are truly named, and identical with those exhibited last week. We have examined the leaves sent to us by our correspondent and by Mr. WALLIS, and can trace but little distinction, excepting that Mr. WALLIS' are much larger. The leaves of Foster's Seedling are similarly lobed and serrated.

—— BULB CATALOGUE OF MESSRS. SUTTON & SONS, READING.—In this year's bulb list of the above-named firm are some deviations from the general practice of the trade introduced, in giving useful concise cultural directions for the cultivation of Hyacinths and other Dutch bulbs, and on Begonias, Lilies, Cyclamen, Gladiolus, Anemones, Ranunculus. Illustrations of Hyacinths arranged in a bed, and of Narcissi are given, neither of which are particularly noticeable for grace of arrangement, and might have been better.

—— AUTUMN FLOWERS.—Mr. T. WARE sends us some handsome examples in Lilium Kraitzi, a pure white flower, with chocolate-coloured stamens, the flowering habit being semi-pendulous; L. speciosum album vernum is also white, the reverse of the petals being tinged with green at the base, and the stamens



The Gardeners' Chronicle,] FIG. 87.—PALACIO MONTSERRAT. (SEE P. 390) [September 26, 1885.

are yellow; L. speciosum rubrum Melpomene is a distinct variety, with bright purplish-rose coloured petals, narrowly margined with white. Leucojum autumnale, with white bells hanging by pink peduncles, is a pretty thing for the rockery or for pots; L. roseum longifolium is still more delicate in habit, the total height from the bulb not exceeding 4 inches; the colour is pale rose. Colchicum arenarium, C. parvulum, and C. montanum, otherwise Merendera bulbocodium, are exceedingly pretty varieties of the Meadow Saffron, of differing degrees of height and colour.

—— HOP SHOOTS.—The following communication from E. BELLEROCHE, which is worthy of special notice, has been kindly forwarded to us by Messrs. HOOPER & Co. of Covent Garden: –

"The Hop harvest does not seem to be a good one, and therefore the time seems to me appropriate to call the attention of English farmers to the extra profit which they can obtain from Hop shoots in the spring. This dainty vegetable fetches a long price in Belgium, and there is no reason why it should not here. If properly cooked, the English palate would not be long in appreciating its exquisite flavour, and the faculty would soon recommend it to patients of delicate digestion. It is more pleasant by far than Hop tea, however tonic the latter may be. At present these Hop shoots are thrown away in Kent, &c. Next month and November is the time to earth-up the plant, and in March and April the blanched shoots are cut and sent to market. English Hop farmers might either import Belgian labourers, or pay a visit to the Hop districts of Belgium, and gather information on the spot. I hold myself at their disposal, and shall be glad if I can contribute to the cultivation of this new vegetable.

—— BELGIAN HORTICULTURAL SOCIETY.—At the monthly meeting of the above, held at Ghent on September 14, the following awards were made:—Certificates of Merit: M. A. van Geert, for Cypripedium sp. nova; M. Ed. Pynaert van Geert, for Tradescantia albo vittata; MM. Desbois & Co., for Dracæna australis fol. var.; M. Jules Heye Leysen, for Cypripedium Petri, C. Tonsum, C. ænanthum superbum, C. albo purpureum, C. tessellatum parphyreum, C. selligerum majus; MM. Vervaet & Co., for Odontoglossum fachetum; MM. Dervaes, Brothers, Wetteren, for Rhus cotinus pendula; MM. Desbois & Co., for Pavonia intermedia and for Abutilon chrysostephanus; M. A. van Geert, for Gymnotheca Raddiana crenata, and for Piper ornatum and Arenga Kisarinei; M. L. van Houtte, for double-flowered tuberous Begonias.

—— PALMS FOR INDOOR DECORATION.—In the South of France a very large business is now done with Palms cultivated in the open air. Amongst those of which the greatest number is grown is Phœnix tenuis, which under such treatment forms beautiful sturdy stuff. The plants are lifted, the soil shaken from the roots, packed in bundles, and sent to Paris, where they are at once very firmly potted in comparatively small pots; these are then plunged in a hotbed inside a house which is kept shaded and moist, the plants being frequently syringed and carefully attended to for water. In a few weeks new roots are formed, air and light are more freely admitted, and the whole are gradually hardened off. Scarcely a leaf suffers, and by such treatment infinitely better plants are obtained at a much cheaper rate than if grown on in pots from the seed. Raphis, Livistonias, and many other greenhouse Palms are treated in the same way.

—— SWEET TEA OF SSU-CH'UAN.—In a report of a journey through Central Ssu-ch'uan in June and July last Mr. ALEXANDER HOSIE mentions the discovery by Mr. BABER of a peculiar kind of Tea, in the following words:—"If my memory is not at fault he [Mr. BABER] was regaled by a priest on Mount O mei with Tea possessing both the flavour of milk and sugar. It may have been in the very temple on the mountain-side in which I am now writing that Mr. BABER was agreeably surprised. At any rate, I am sipping an infusion which is, without doubt, sweet, and which is declared by the priest to be brewed from a naturally prepared Tea leaf. It is a large dark brown leaf, and is very sweet when chewed. The people at the bottom of the mountain, whom I first questioned regarding this Tea, asserted that the leaves were sweet because they were first steeped in molasses; but the balance of evidence, as I have since found from extensive inquiry, is against any such artificial preparation. The tree is said to grow in only one gorge in the mountain, whence the leaves are brought for sale." We are indebted to Mr. HOSIE for a sample of this Tea, which consists of the entire leaf rolled up loosely into little balls, and almost black in colour. Upon chewing a portion of a leaf it is found to be decidedly sweet, with a strong suspicion of liquorice rather than molasses, as stated by Mr. HOSIE. Upon soaking the leaves and flattening them out they were found to be those of Viburnum dilatatum, Thunberg. To prove that the leaves of this plant possessed no natural sweetness we obtained a few leaves from a growing plant and dried them, and found that neither in their fresh, and still less in their dried state, have they any marked flavour. Moreover, the leaves of the Mount O-mei Tea are transparent, as if they had been steeped in some solution, while those which I gathered and dried are opaque, and yet retain their green colour. It seems certain, then, that this singular Tea owes its sweetness to some foreign substance, as stated by "the people at the bottom of the mountain," and that substance may be molasses, but is, in all probability, liquorice.

—— SOLANUM TRILOBATUM.—In the vast genus Solanum we should naturally expect to find a great amount of variation, and so we do—a fact that becomes more palpably evident every day as we note the various purposes to which the different species are put. This can be illustrated in a small way by comparing together such species as S. tuberosum, S. jasminoides, and S. macrophyllum. The species under notice was originally introduced as early as 1759, and has slender prickly stems, attaining a length of 10 to 14 feet. They lack the slender gracefulness of S. jasminoides, and, moreover, can hardly be said to climb in the proper sense, but in a state of Nature must scramble up amongst other vegetation by the aid of their strong hooked prickles. The leaves are three to five lobed, with prickly petioles, and the large flowers, produced in terminal racemes, are deep violet, fading with age, and furnished with prominent yellow anthers. A figure of the species was given in BURMANN'S *Flora Malabarica*, 57, t. 22, f. 2, and a recently introduced plant is flowering in the Water-Lily house at Kew.

—— MEDINILLA ERYTHROPHYLLA.—While by no means new, the merits of this species deserve to obtain for it a more extended distribution than it at present enjoys in gardens. It is an East Indian species, with fair sized rosy-purple flowers produced in closely arranged cymes on the old wood, and less seldom in the axils of the old leaves. This confirmed and constant habit allows the plant to be closely pruned each year without risk of sacrificing the bloom, a means by which also the plant can be kept bushy and within reasonable limits. For the decoration of the stove it is far superior to many others grown. The leaves medium-sized, oblong-elliptic, and three-nerved, the middle one of which is red. Like other species of Medinilla, and indeed most members of the same family, the petals are liable to drop early, an evil that is in some measure compensated by the successional development of fresh flowers. A compact and convenient sized specimen has been flowering for some time in the Palm-house at Kew. A figure of it may be referred to in *Paxton's Magazine*, ix., 79, ic.

—— THE ESSEX FIELD CLUB will hold its sixth annual cryptogamic and botanical meeting in Epping Forest on Friday and Saturday, October 2 and 3. On the Saturday afternoon and evening there will be an exhibition of fungi and other plants, fresh and preserved, with micro-objects, &c., and papers will be read by Dr. Wharton and Mr. Worthington Smith. The following botanists, among many others, are expected to be present, and will act as "referees" in various departments of plant lore:—Professor Boulger, Dr. Braithwaite, Dr. M. C. Cooke, Rev. J. M. Crombie, Rev Canon Du Port, Messrs. J. L. English, Henry Groves, F. J. Hanbury, E. M. Holmes, David Houston, A. V. Jennings, Arthur Lister, F. Oxley, W. W. Reeves, Worthington G. Smith, C. A. Wright, Dr. Spurrell, Dr. H. T. Wharton, &c. Those wishing to attend should communicate with the Hon. Secretary, Mr. W. Cole, Buckhurst Hill, Essex, who will forward programmes giving full particulars.

—— GARDENING APPOINTMENT.—H. HAWKES, for over three years Gardener to the Royal Bath Hotel, Bournemouth, as Head Gardener to R. LE DOUX, Esq., East Moulsey.



## TERRESTRIAL ORCHIDS OF SOUTH AFRICA.

(*Continued from p. 342.*)

BY an oversight the following fine species was omitted in its proper place under the genus Disa.

*D. affinis*, N. E. Brown (*Monadenia rufescens*, Lindl.).—Leaves broadly lanceolate to elliptic, passing into stem-sheaths. Flower-spike 3—6 inches long, many flowered, flowers ½ inch in diameter, "sulphur-yellow." Dorsal sepal oblong obtuse, concave, with a slender spur 8—9 lines long, hanging down behind or beside the ovary; lateral sepals oblong obtuse; petals abruptly elbowed in the middle, the part above the elbow oblong emarginate; labellum elliptic-oblong. This plant was mistaken by Lindley for D. rufescens, Sw. It grows in stony places and clefts of rocks on Table Mountain and elsewhere at 1400—2500 feet elevation, and flowers in October and November.

### NOTES ON CULTIVATION.

Having now given brief characters of the chief of those species which appear to me worth cultivating (although by no means all of them, as there are many others and several of them undescribed that are quite as handsome as some of those I have enumerated), I will proceed to give what information I possess that I think may in any way assist the cultivator in the management of them.

It may be said with perfect truth that South Africa is one of the most remarkable regions in the world, containing the largest of birds, several of the largest among animals, and a flora that is perhaps more varied, and more rich in species, area for area, than any other region, and yet without the vegetation making so prominent a feature in the scenery as it does in some countries with a far poorer flora! The climate, too, with which we are chiefly concerned, varies very much in different parts in temperature and rainfall, hence the necessity for the gardener to know something about the climate of the place from which the plant he fails to succeed with comes, and the conditions in which it grows naturally. This should always be his aim where he fails to cultivate a plant he is really anxious to succeed with, for there can be little doubt that the great cause of failure in most instances is the result of ignorance on the part of the cultivator of the natural conditions under which the plant grows. I have heard gardeners boast that they can grow plants better than they exist in Nature, and this is quite true with regard to a few plants, but they are very few indeed compared to the whole. Another expression not very rarely heard is, "If they won't grow we'll make them grow." Granting that the one who says this really has the requisite knowledge to "make them grow," he probably forgets that there was a time when that knowledge had not been obtained by any one, and that failure was the rule with the plants in question, the real knowledge having been gained by study of the natural surroundings of the plants. We have only to compare the success in the cultivation of epiphytical Orchids today with the success of fifty years ago to perceive the truth of this.

Now the climate of South Africa is so different in different parts that there can be little doubt it will be found that some of the terrestrial Orchids will require quite a different treatment to what others do, as the climate of one part is not suited to the requirements of some species from other parts. As an illustration of this I may mention that Sir Henry Barkly told me that of the large collection of Stapelias he had got together at Cape Town from various parts of South Africa, several would not thrive, and died, in spite of all he could do under outdoor cultivation. If such is the case with some species in what may be said to be their own country, what must we expect when they are subjected to the artificial conditions of cultivation, unless their natural surroundings are imitated as nearly as it is possible to do? Many South African plants readily withstand the vicissitudes of our English climate, some with (Pelargonium), others without (Kniphofia) protection during winter; but some will not do so, and among them appear to be the terrestrial Orchids, at any rate there has not been much success with them hitherto. When intro-

duced they often thrive and flower well the first year, and then die, but I do not see why they should not be as successfully cultivated as some other Orchids are now which fifty years ago cultivators were quite as unsuccessful with, and the key to success will be found in the study and judicious imitation of their natural conditions of growth.

I am not competent to give an account of the variations in climate, but will briefly point out that, roughly speaking, South Africa is divided by two gigantic steps, as it were, into three regions of different elevations; there is the lower coast region, which in the south-western part, where many of the species I have enumerated grow, enjoys a temperature of between 70° and 95° Fahr. during the summer season—say, from the middle of November to the middle of February (for it should always be remembered that the seasons there are exactly the opposite of ours here in England), and during winter the thermometer does not often fall below 50° Fahr., except on the mountain tops, where it sometimes freezes. The rainy season in the south and south-western part of this coast region takes place during winter, from about the middle of May to the middle of September; but in some years beginning in April, and in others lasting through October; at the end of the rainy season it gradually becomes dryer, and becomes very dry between November and April, when there are only occasional showers. In the south-eastern and eastern part of it summer is the rainy season. Next after ascending the mountain chain called in different parts Zwartebergen, Zuurbergen, &c., we come upon a region elevated 1800 to 2500 feet above the sea-level, which, taken as a whole, is perhaps warmer than the coast region, and part of it, called the Karoo, forms the hottest part of Cape Colony; the rainy season for the whole of this region is in summer. Lastly, ascending another great chain of mountains called the Nieuwveld, Stormbergen, Drakensberg, &c., the interior region has an elevation of 4000 to 5000 feet above the sea; and being nearer the equator the sun's rays are more nearly vertical, consequently in summer the days are very hot, but the great elevation considerably modifies the temperature in winter, especially on the higher elevations, such as on the Sneeuwberg, and the High Veld on the Drakensberg, where the nights in winter are cold and frosty, sometimes the thermometer falls 6° or 8° below freezing point, and snow occasionally falls to the depth of several inches, but does not last long except in a few places, as during the day it becomes hot, the thermometer often showing a very wide range in the course of twenty-four hours, since from freezing point, or even below, in the early morning, it will sometimes rise to 60° or 70°, or even more, by midday, descending again to freezing point at night. The rainy season of this region is in summer.

In the cultivation of these Orchids the first point to attend to is the soil. Under the description of each species I have given the character of the soil whenever known to me, and from an examination of the soil clinging to the roots and tubers of the dried specimens, and from collectors' notes, it appears in most cases they grow in a soil consisting of about three parts out of four of sharp white sand, and about one part of rich black vegetable loam; some of those which grow in swamps would perhaps require a little peat mixed with the above, whilst some few grow in a stiff clay soil, which after the rainy season is over becomes baked hard by the sun to an almost brick-like consistence.

Next as to watering the plants: this will probably be found to be the most important point in the treatment of them. First should be ascertained, if possible, the region and elevation of the plant's natural habitat, and the temperature and water regulated accordingly; and if the plant inhabits a region of summer rains, it should not be watered until that period comes; or if of winter rains, not until that season occurs, always remembering that the South African summer occurs during our winter, and the winter during our summer, it is quite true that many plants from the southern hemisphere will flower with us under cultivation at a different time of the year to what they do in Nature; but I suspect if this forcing is, in some cases at least, injurious to the plants, and causes the loss of some that would grow well enough, perhaps, if their natural requirements were attended to; and I think that the less attempt there is made to force these southern terrestrial Orchids the more likely will success attend the efforts of the cultivator, though some may perhaps stand it with indifference. It will be noted that the time of flowering is from August to February or March, their routine of life being that after flowering they die down and remain dormant. In the south and south-western coast region their period of rest will be during the dry end of summer and autumn seasons, say January to May; in the inland regions it will be during the winter season, from about May to September, when the rainy season begins. During the rains they make their growth, and some of them flower, but others do not flower until after the rains are over, and their foliage at the time of flowering will often show signs of withering or dying off, so that this must not always be looked upon as a sign of unhealthiness.

Years ago many Cape Orchids were introduced, but according to accounts given by Lindley (who certainly knew as much or more about Orchids as any of those who have dealt with them since), they soon died out. In the *Botanical Register*, under t. 1653, Lindley writes of Bartholina pectinata:—"We presume that this, like all the Cape Orchidaceous plants, is incapable of being cultivated permanently by any means hitherto discovered; for the roots, although when first imported they flower, afterwards disappear. They should be planted in sandy loam, and kept in as light a greenhouse as possible, for it is probable that the reason of their disappearing is the want of light during their growing season in this country." I do not believe this is the reason, but think it more probable that the life of some terrestrial Orchids is of short duration, lasting only a few years (Sir Joseph Hooker holds the same opinion upon this point); this will in some measure account for the scarcity of certain species during some years, and abundance during others. If this surmise be correct, it stands to reason that we cannot expect the self-same plant to live under cultivation for a longer period than it does in Nature. But something might be done to keep them in cultivation by raising them from seed.

Under the description of Satyrium pustulatum (S. erectum, Sw.), in the *Botanical Register*, vol. xxvi, t. 18, Lindley writes as follows, the paragraph included in brackets being a quotation from a communication from Sir John Herschel, published in the *Proceedings of the Horticultural Society*, vol. i., p. 56:—

"[I have never found this in the sandy flats about the Cape, my roots were all taken from clay, baked by the sun nearly to the consistence of a brick, at 'De Koch's,' a place about 40 miles east of Cape Town, in the district of Hottentots Holland. They were then in flower, rather past their maximum. Nevertheless they grew well enough in the peaty sand of which my garden consisted (this was at the Cape), and to admiration in a fine black sand enriched with vegetable matter, from the shrubby hills in the neighbourhood. Plenty of water and moderate temperature while leafing, diminished supply of wet and increased heat as the flower rises, and total dryness with heat when all is withered, seem to be the conditions."]

"Practically the cultivation of Cape Orchidaceæ has always been found extremely difficult in this country. The best method of cultivating the present species is to plant it out in a pit with a south aspect, fully exposed to the sun's rays at all seasons of the year. The pit must be well drained, and the soil should consist of peat well mixed with sand and leaf-mould. A great deal of harm may be done by injudicious watering. When it is not growing it should be kept perfectly dry. As soon as it begins to push through the soil a little water may be given, not amongst the leaves, for this will probably injure them, but round the tubers; this may be gradually increased as the plant grows until the flower-stem makes its appearance, when the water must be discontinued. Heat and light are now the agents which will perfect the flower, and ripen the tubers for the following year. When propagation is attempted it must be done when the tubers are ripe, and the plant in a state of inaction. Those who have no pits to grow this plant in may be equally successful by cultivating it in pots, if the above suggestions are attended to."

Mr. Bolus, writing to me upon the cultivation of the Cape peninsula species, gives the following as his opinion as to their management:—"I believe they should be gradually dried off after flowering, and then kept in pots, laid on their sides, until about April (our time), when they should be repotted and the watering most carefully attended to, that is, the plants should never be allowed to become dry nor to be sodden for want of drainage, but the water increased from the middle of April until the end of July, when it should slacken off until October."

Taking the different character of the seasons in different parts of South Africa into consideration, I think it probable that the following mode of treatment will be found likely to give good results. Those species which come from the south and south-western coast region should be planted in suitable soil, with thorough drainage, and about May placed out in the open air in a sunny place, but protected at first from any very cold weather (for that season of the year), and especially from heavy rains. The watering must be very carefully attended to; at first, before the bulbs have fairly started into growth, the soil should only be kept just damp, not wet. As growth takes place and increases the water should be increased, and if the weather is not too sunny the plants may freely be exposed to rain, but if the season should be a hot, dry one, it would be better to shade the plants a little from the sun, and to take care not to water over the foliage, although in Nature some of them, for example Disa maculata, D. rosea, D. longicornis and D. Richardiana, grow in places that are constantly dripping with moisture during the winter and spring months—May to September. When the flower-stem appears and has made a little growth, the water should be gradually decreased, and when in flower the plants should be exposed to the sun as much as possible. After flowering they should be dried off rapidly and placed in a hot dry greenhouse, the pots kept exposed to the sun and kept at a dry temperature of 70° to 90° Fahr. all the winter, during which time the soil may occasionally be damped just sufficient to prevent it remaining dust-dry for too long a time. About the end of February they may be transferred to a cooler house, and as the spring advances should be more and more exposed to the influences of the weather, since it must be remembered that our spring for temperature is nearly on a par with the late autumn and winter at the Cape, and our summer rather hotter than their spring; so that by graduating the temperature and water in the way indicated, the plants will be placed under conditions somewhat like those they have in Nature.

Those species which come from the interior regions should, I think, on the contrary, be placed in a dry, hot greenhouse about the beginning of September, and the watering carefully commenced, when the plants show signs of vegetative activity, increasing the supply as growth proceeds, as in the former case, and diminishing it when the flowers appear, and drying off rapidly as the plant begins to wither. As the winter passes away and the temperature outside gets warmer, the plants should be gradually placed in a cooler and cooler temperature, and in spring and summer the plants may be placed out in the open air in a sunny place, but should probably be protected a little from the fierce sunheat sometimes experienced in our summers, and should be kept *dry* until the time comes for placing them in a greenhouse again.

Concerning open-air treatment it may be worth while quoting what Lindley has published in the *Botanical Register*, 1838, Miscellaneous Notices, p. 83, under Satyrium papillosum (S. erectum, Sw.); he writes:—"It is particularly deserving of notice that the first of these species (S. candidum) was planted in the open ground in May last, and it was under such circumstances that the fine specimens I examined were produced. Upon this subject Sir John Herschel has favoured me with the following note:—"The specimen of S. candidum was flowered in a box of bog earth, openly exposed, except in heavy rains when it has been taken in, and in cold nights has been protected by mats. But there are also several specimens of the S. candidum now flowering in an open bed under a south wall with no protection whatever. Of these, however, the spikes are not yet so fully developed. Some specimens of that very fine Satyrium, the 'carneum,' have also flowered (though very pale in colour) in garden pots of bog earth, exposed as in the case of S. candidum; some have come to very handsome heads, though far inferior to what they do with very little care in South Africa, where specimens have been obtained with 120 or more flowers on a spike. The Satyrium papillosum was brought over in a box of Cape soil in a growing state, and though generally exposed in London, has been occasionally brought indoors in cold nights, and, since the flower-stalks have become fully developed, has been entirely kept in the house and sometimes placed near a fire. Satyrium chrysostachyum [S. coriifolium], a fine orange-flowered kind, similarly imported, has grown well, and gone through

its course, but without throwing up a single flower-stalk. It is now dormant, but the new tubers are satisfactorily formed, and promise well for next year."

Those species which are natives of Natal will probably require a little moister atmosphere, and a more equable temperature.

As to repotting, I fancy it will be found that the less the bulbs are disturbed the better; they do not get repotted in Nature, and unless the soil is really unfit for them to grow in, I think they are best left alone. Gardeners as a rule dislike to see grass or weeds growing with their plants but in some cases there may be some benefit in the association when not overcrowded; tubers and bulbs under natural conditions usually grow amongst grass, moss, &c., and often thrive and grow to much greater perfection under those conditions than they do under cultivation. I think it probable that the roots of grasses, &c., growing round tubers and bulbs help to keep the latter in a proper state of moisture, preventing them from getting sodden by carrying off superabundant moisture, and when at rest preventing the bulbs from becoming too dry, for however dry the earth may appear, a small amount of moisture is always rising by capillary attraction towards the surface, and in hot, dry climates becomes vaporised before reaching the surface. Some of this moisture is absorbed by the roots of plants, and although perhaps quite insufficient to keep the aërial part of the plant in activity, yet prevents its death by keeping alive the underground portion of the plant. Of course a certain amount of this moisture or vapour will be absorbed by bulbs or tubers, but I cannot help thinking that a network of root-fibres around them helps to keep them cooler and moister than they would be without them when exposed in a dry, sandy soil to the burning sun-heat. *N. E. Brown, Kew.*

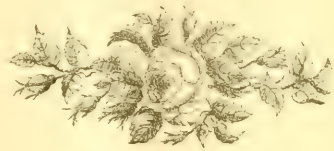
## OLD WARDEN PARK, BEDFORDSHIRE.

THIS, the handsome residence of Joseph Shuttleworth, Esq., is situated in a sheltered part of the country, ½ mile from the station of Southill (Midland branch). It is surrounded by magnificent pleasure grounds, which are kept in fine order, as is also the village of Old Warden, and the churchyard, by a staff of men under the direction of Mr. G. Allis, the respected head gardener. A word or two anent the village and church referred to would, perhaps, not be out of place, as both are objects of great interest. The village, which is one of the cleanest, neatest, and most picturesque I have seen, lies in a hollow, or rather on the side of one, and is sheltered by thick Pine woods planted on the rising ground, the beneficial effects of which may be seen in the cottagers' gardens, where fine fruit trees and vegetables were luxuriating; these gardens again are, in most cases, sheltered by some capital specimens of hedges, composed of different varieties of Hollies, Privet, and Aucuba. A length of prim variegated Holly hedge, with rough pyramids at intervals, is a sight in itself, and when covered with its crop of berries would be well worth a short journey to behold. The cottages are, for the most part, singular in outline; no particular form predominating; most of them are thatched, and the majority have climbers of Wistaria and Vine. Many fine young Conifers are planted about the grass plots and plantations. I noticed a fine group of Pinus nobilis making splendid growth; one of them, more stunted than the rest, had a fine cluster of thirteen well developed cones.

The mansion, which is approached through a well timbered park, is of recent construction, and is a fine massive building. The gardens, though small, are in very good order. The glass has been erected seven or eight years, and the vineries were in good condition. One vinery, besides Black Hamburgh, Muscat Hamburgh, Muscat of Alexandria, and Gros Colmar, contained some exceedingly fine bunches of Buckland Sweetwater, perfect in every point. The late vinery had excellent bunches of Lady Downe's, Black Alicante, Pearson's Golden Queen, Foster's Seedling, and Barbarossa.

In the Melon pits the plants looked well, and included fine fruits of A. F. Barron, Gilbert's Netted, and Hero of Lockinge. The plant-houses contained for the most part decorative stuff, specimen plants not being grown. The trees on walls were producing plentifully, although the fruit was small.

The kitchen garden is well arranged, and was skilfully cropped; and the standards and espalier fruit trees were carrying heavy loads. In a nice open space was the stock of Chrysanthemums, in grand order. The pleasure grounds contain many interesting views and scenes—one of the best of which is called the Swiss garden. Under the shade of a magnificent Cedrus Libanus on a mound, is a modern Swiss cottage, from the windows of which a variety of pleasing views can be obtained of the adjoining woodlands. Near the cottage are several famous trees, two Araucarias imbricata (male and female), the latter having ripened a cone this season; a grand group of Abies canadensis, over 30 feet high and laden with cones; two remarkably handsome Arbor-vitæ symmetrical in shape and evenly matched. In other parts of the grounds were an Oak 16 feet 6 inches at 4 feet from the ground, and a very compact specimen of Abies clanbrasiliensis. In one part of the grounds several fine Spruce Fir trees have been taken possession of by the wild Clematis, which have clambered to the top of the trees and formed fine clusters of flowering shoots, their Vine-like stems twisting about in most fantastic forms, and reminding one of the *lianas* of Brazilian forests. A conservatory in the middle of the grounds, completely hidden by shrubs and entered by underground passages lined with rough terra cotta, is both uncommon and pleasing, the visitor being taken by surprise at finding a conservatory in such an unlikely situation. The gardens are under the able management of Mr. Allis, from whom I experienced great kindness, and to whom my thanks are due for a very pleasant afternoon. *C. T.*



# The Rosery.

### DRY WEATHER ROSES.

HAPPENING to visit Messrs. Keynes, Williams & Co.'s Castle Street Nursery, at Salisbury, during the third week in August, when the effects of the drought were being, and had for a long time been severely felt, a good deal of interest attached to the behaviour of certain Roses during the season, for it was a matter of surprise to see some of the dwarf Roses vigorous in growth, clean and flowering freely and finely. It is true that the Rose grounds at Salisbury slope down towards the river Avon, but no water had been given them, for all the labour that could be spared for the task of watering found ample occupation in keeping alive the Dahlias in the quarters close by.

The following hybrid perpetuals can be grouped as Roses doing well in dry weather:—A. K. Williams, not large but full, bright and good; Alfred Colomb, Alphonse Soupert, Lacharme, new of 1884, bright pink, very large and bold; Avocat Duvivier, bright purplish-red, a very effective Rose; Baron de Bonstettin, Black Prince, Camille Bernardin, Charles Darwin, a fine deep rich crimson variety; Charles Lefebvre, Comtesse de Serenye, Comtesse d'Oxford, Crown Prince, Docteur Andry, Duchesse de Morny, Duchesse de Vallombrosa, beautiful satiny pink, a fine Rose; Duke of Edinburgh, Duke of Teck, Elie Morel, Etienne Levet, Ferdinand de Lesseps, Fisher Holmes, François Levet, François Michelon, Horace Vernet, John Bright, John Stuart Mill, La France, La Rosière, a charming velvety crimson variety; Louis Dove, Louis van Houtte, Madame Charles Wood, Madame Eugéne Verdier, Madame Gabriel Luizet, Madame Hippolyte Jamain, Madame Lacharme, Madame Laurent, Madame Nachury, Madame Rothschild, Madame Victor Verdier, Mdlle. Emilie Fontaine, crimson fringed with fiery red; Mdlle. Eugénie Verdier, Mdlle. Marie Rady, Mdlle. Marie Verdier, Magna Charta, Marguerite de St. Amand, Marie Baumann, Marquise de Castellane, Merveille de Lyon, charming despite the hot weather, and a lovely white Rose; Mons. E. Y. Teas, Mons. Noman, Nardy Frères, Pierre Notting, Queen of Queens, a very pretty pink Rose, edged with blush; Reynolds Hole, Royal Standard, Senateur Vaisse, Star of Waltham, Violette Bowyer, white, slightly tinged with soft flesh colour; and Xavier Olibo.

It will be observed that a considerable proportion of the foregoing are red or crimson Roses, and, indeed, flowers of crimson shades were very conspicuous throughout the whole. In the case of Rose shows held during the two last weeks of August and the first week of September, the preponderance of red varieties was very large; it usually is at this season of the year, but it was strikingly manifested this season.

A few Tea-scented varieties were also very fine, the season being considered—Catherine Mermet, Innocente Pirola, Madame Falcot, Madame Willermoz, Marie van Houtte, Niphetos, Souvenir d'Elise, and Souvenir d'un Ami. Bennett's Hybrid Tea, Lady Mary Fitzwilliam, was doing remarkably well, and so were Bourbons Baronne Gonella and Souvenir de la Malmaison.

It is not too much to claim for the varieties comprised in the foregoing list that they possess hardy and robust constitutions, and when planted in moderately rich soil, in which they can root deeply, they, despite a trying drought, well bloom continuously the whole summer. It may be that the soil at Salisbury—a good holding sandy loam—is favourable to the continuance of bloom; if this be so, let Rose cultivators endeavour to secure such a soil for themselves as nearly as they can. *R. D.*

## MARKET GARDENING.

(Continued from p. 340.)

IT is satisfactory to me to find my imperfect remarks prove food for thought, and more, that an occasional reader resorts to the pen to discuss matters wherein there appears to be divergence of opinion. If I had one intention more than another when I commenced these papers on "Market Gardening" it consisted in the desire to place before professional gardeners throughout the country accurate data concerning the methods of field cultivators, so that notes might be compared for mutual benefit. Considering my past experience in private garden cultivation, the fact that I gained some nine prizes at a single International Exhibition at South Kensington, and the circumstance that for the last twelve or fourteen years I have been resident amongst market gardeners, and have had the best opportunities for studying field culture, I have not hesitated to speak out, and regret that any correspondent should consider my remarks as in any way hostile. I am bound, nevertheless, to meet "M. W.'s" strictures on common sense ground. And what do they amount to?

I have found no fault with gardeners or with the quality of their supplies, but only with an old rule-of-thumb practice, or system, which in many places still obtains, of growing too few hardy vegetables at too great an outlay for labour; such system being good enough for growing fine produce for display, either upon the ground or the exhibition tables, irrespective of quantity.

CABBAGES.—Now as to Cabbages, I have shown that market-garden growers produce beautiful white-hearts in succession, from the first week in September until the beginning of June following, and whether they are pulled or retained—as they often are for the exigencies of marketing—they exist long at such a period of the year, free from decay or particular injury. Your correspondent may do the same, and not resort to the old method of retaining the old stumps of late spring Cabbages for the winter uses.

Hence, I entirely dispute his assertion, that if the maturing crops are unused a "few weeks," "attendant loss and stench (!) would occur." Furthermore I assert, if aged Cabbages will not keep in a thick row such as I have described, they will become unfit also in any other state. It is a well known fact that on the old rule-of-thumb system, white-heart Cabbages are not in use until the month of May is wearing away. Now in lieu of this, I say, have white-hearts all the winter; plant even spring Cabbages earlier, larger and more thickly together: let them shelter and "nurse" each other, and before thinly planted plants are fit for use these will "come on," so that every other plant in each row, can be drawn for use six weeks or two months earlier, with quality and even "M. W.'s" superabundance, combined.

It stands to reason, however "absurd" it may seem

from my critic's point of view, that even if liability to decay, and a stench such as he describes existed, he could neutralise all by thinning out the plants for immediate use. He does not deny my quantities, but admits the bulk would be so great as to cause a stench! This, even were it possible, is a contingency also neutralised by planting half the accustomed space of ground—a plan I recommended in favour of growing larger supplies of other more valuable vegetables. "M. W." says there is no need to plant largely in private gardens because certain kinds are "in comparatively small demand," and this is his reason for planting Marrows upon rubbish-heaps. My desire was to show those who place timely fire to clear away rubbish-heaps, and very many of whom annually make up beds, piling upon them mounds of soil, covered with handlights, how simple the practice in connection with field culture is, and how unnecessary the outlay usually expended. As to making allowances for tastes, soils, elevations, &c., in private gardens, such matters are far removed from the scope or intentions of a writer on market gardening.

Onions.—Onion growing has become an important item in connection with market garden field crops, though the sorts grown vary greatly from what is customary in gardens, the more important crop being autumn sown Lisbons. The ground is well manured, an average quantity of moderately decomposed manure, costing from £10 to £12 per acre, being applied. Seeds are occasionally hand-sown broadcast, but more generally horse-drilled, and somewhat thickly. The ground is generally well rolled with large heavy iron rollers after planting. Hoeing is performed rapidly, so soon as the plants are an inch or two high, the price given varying according to the crop of weeds, from 3*d*. to 4*d*. a square rod being sometimes given; after which, if the weather is suitable, another horse-rolling is given. Occasionally during mild winters two, and sometimes three hoeings are requisite to keep the weeds down. In the spring months rapid growth is made, great aid at such a time being afforded by a good dressing with soot, or a very moderate one of nitrate of soda, both of which produce very rapidly, especially during showery weather, a deep green colour in the leaves, forcing growth, and materially assisting their sale. Such crops are generally drawn when the plants show first signs of bulbing, and subsequently, as they are bunched and marketed in the green state. The price given by "jobbers," who purchase the crops as they stand, and undertaking the whole subsequent work of digging, or drawing, bunching and marketing, is from £20 to £30 an acre, the latter price not being an excessive one for good crops. The White Spanish for summer crops, and at times Brown Globe, are treated in like manner, harvested, and generally stored for a month or two, when they are disposed of by the ton.

During winter and spring seasons the prices for such will vary very greatly, even within a month or two. The crop this season is a poor one—so small, that the markets have been already glutted with them bunched, and not within the last decade have such immense numbers of picklers been left upon the old beds for future collecting as are seen at this time.

Rhubarb, which a few years ago was but occasionally grown, and generally on the southern and western sides of the metropolis, has become a standing crop on market garden farms generally. Warm sites, and, as far as possible, deep early lands are chosen, and are heavily manured, whereon stools, cut into suitable crowns, are planted, generally in rows. During the month of February the soil is moved between the lines, following which the crowns are covered over with the coarser stable sweepings brought from town. Some is forced by actual fermentation of such materials, some is only protected by the light covering under which it grows, and is pulled, bunched, and marketed, as soon as large enough, the practice being to draw plants and portions of plantations wholly, and not to select here and there the largest sticks, as is customary in gardens; and it would seem by this process that far heavier successional gatherings are secured, as, following each gathering, another seems to form very rapidly, and hardly second in quality to the first. Excepting in so far as the remains of the spring covering decays, and finds its way to the roots, direct manurings are an exceptional practice. *William Earley.*

(*To be continued.*)

## LÆLIA ANCEPS AND L. HARPOPHYLLA.

The short oblong pod of this species (fig. 88) may be compared with that of L. harpophylla (fig. 89),



Fig. 88.—Lælia anceps.

which, though nearly, if not quite as broad in the centre, tapers more acutely to either end, and in which, moreover, the ribs are less prominent than in L. anceps. To what extent these characters are to be relied on we do not know, as it is only by the examination of



Fig. 89.—Lælia harpophylla.

large numbers of specimens that a safe opinion can be formed.

Rhamnus Frangula.—The berry-bearing Alder is not one of the least useful of our indigenous plants. Its unripe drupes are used to dye a green colour, and its wood is the Black Dogwood of gunpowder-makers. In addition to the uses mentioned (for making gunpowder it is largely cultivated in some countries), it is also grown in Belgium and elsewhere for shoemakers' pegs, and also for garden-sticks.

## FERNS AT KEW.

The value to horticulture of such a rich collection of Ferns as is now at Kew is seen in the number of visitors who go through the ferneries, note-book in hand, jotting down the names of those kinds which have most attraction for them, and probably also at the same time noting the conditions under which each kind is grown. Kew has been for many years famed for the richness of its Fern collection, a collection which had its origin in the zeal and perseverance of two of our most eminent pteridologists, the late Sir Wm. Hooker and the venerable ex-Curator, Mr. J. Smith. Under the fostering care of these two men the Ferns at Kew rapidly increased in number, and the growth and interest of the collection have continued till the present, so that the ferneries at Kew contain perhaps the finest and most extensive Fern collection in existence. In the general characters of many of the kinds there represented much similarity is apparent, and for ordinary gardening purposes those species which are only to be distinguished from each other with the aid of a microscope are often confusing. Still the hosts of distinct and beautiful Ferns that are available for general cultivation, do not meet with as much attention outside botanical collections as their merits deserve. Pleasure is derived from a change in the plants we cultivate as much as in other sources of enjoyment, and it is so easy to make a selection of the kinds we would prefer to try next by utilising such an establishment as Kew that we are surprised to find so much conservatism among Fern fanciers. The Ferns at Kew may be pointed to as an instance of what we mean, for there are many handsome species quite distinct from what we ordinarily meet with, and which have been grown at Kew many years, but which are still strangers to most gardeners. Not only may this be said of the Ferns themselves, but also of the manner of their cultivation at Kew. The handsome, graceful drapery or curtains formed in the large fernery by tastefully training the different climbing Ferns from one pillar to another; the beauty of many of the Ferns when grown in baskets, the strange attractive pictures presented by large specimen Platyceriums placed on brackets, as we place old china; the mound clothed with masses of foliage formed by planting the rhizomatous or trailing kinds on conical mounds of peat; and last, but not least, the beauty and extraordinary variety of the Selaginellas. The latter genus is represented by over sixty kinds, amongst them being climbing, arboreous, rosette-shaped, and tiny crawling centipede-like varieties, all in vigorous growth and health, and not one of them unworthy a place among popular garden plants. Most cultivators know S. denticulata (of gardens), S. Martensii, and perhaps S. Wildenovii, but to many of them the collection of Selaginellas at Kew would be a great surprise, for, as was said by an eminent gardener the other day, "nobody seems to know much about these beautiful plants."

The Filmy Ferns are most of them beyond the capabilities of ordinary plant-houses, requiring for their healthy growth a special structure, and yet Mr. Cooper Foster in the little greenhouse adjoining his drawing-room has proved how even Filmy Ferns may be successfully cultivated by an amateur situated in the heart of London. At Kew there is a fine collection of these plants, most of them growing in a house where fire-heat is given only during winter-time, so that the cost of keeping such plants in health is comparatively light. We imagine that in an ordinary cool Orchid-house such Filmy Ferns as the Todeas, the Killarney and Tunbridge Ferns, and one or two other robust kinds, might be successfully grown.

Adiantums are at Kew rich in number of kinds, just about a hundred being represented, which are now at their best, so that for comparison and selection they may be turned to good account by visitors.

Reverting to the kinds grown in baskets we may here give a list of the most striking of the species used, though it is not difficult to cultivate any of the small Ferns in baskets, the question being their adaptability for such a purpose. Of Adiantums the most charming in baskets are A. assimile with thin stalks and graceful almost transparent pinnæ; A. rhodophyllum, the beautiful rosy tints of which are brought out by being placed near the glass; A. venustum, also a rose-tinted species, much more delicate than the last; A. caudatum, with long drooping narrow fronds bearing on their tips perfect young plants like the hen-and-chicken Saxifrage, but much more charming; A. amabile or Moorei, which is a

perfect ball of airy fronds, no basket being visible through them; A. tinctum and A. Veitchii, grown in baskets to heighten the red colour of the young fronds; A. colpodes, also thin and graceful; and the mist-like A. gracillimum, seen to advantage only when hung up in a basket between the eye and the light. After the Adiantums come the Davallias of the dissecta group, D. dissecta (elegans) itself looking exceptionally charming with its bright green triangular fronds, and brown creeping stems, which clasp the basket all round and look like so many squirrels' paws. Polypodium or Goniophlebium subauriculatum and Nephrolepis cordifolia are both well known as basket plants, and at Kew they are plentifully grown as such, the long comb-like fronds of the one and the graceful feathery leaves of the other reaching down 4 or 6 feet from the baskets.

Polypodium appendiculatum, like our native Polypody, but with the leaves beautifully veined and tinted with vinous-red; Acrostichum venosum, with long Hart's-tongue leaves, clothed with floury grey scales; these, and others besides, struck us as being specially serviceable for cultivation in baskets. Selaginellas of various kinds are used for covering the baskets and mould where the habit of the plant is not such as would hide them.

Among plants of special interest and rarity we noticed Trichomanes Prieurii in splendid health, as also were T. crispum and T. floribundum (pinnatum). Helminthostachys zeylanica, a pretty little Ceylon Fern, with an appearance somewhat like an Anemia; Selaginella canaliculata, the stem of which is as thick as a man's thumb, and nearly 5 feet high; these were all in beautiful health, as, indeed, the collection in general is. *B.*

## EIGHT DAYS' IN THE GARDEN OF ENGLAND.

TOTNES.—Attracted apparently by the scenic beauty of the estuary of the Dart, "the English Rhine" in miniature, it is related that "Brutus of Troy," the great grandson of Virgil's hero, Æneas, landed on the spot where now stands the borough of Totnes; and as this was some time before he founded Troy *novant* (New Troy), afterwards known as Augusta Trinobantum, and as London, Totnes may claim to be the most ancient borough in Brutus' land, or Britain. The legend must be true as a shapeless lump of granite by the side of the main street commemorates the fact. It bears no inscription!

The town, moreover, countenances the tradition of its antiquity; for, if the grass does not grow as rankly in its High Street as in that of the ancient Cinque port of Rye, it is only because of the extreme steepness of the gradients in the Devonian town which cause the Dartmoor showers to scour them clean "to the metal." There is only one level street in the place, that namely down by the wharves of the river Dart, which here ceases to be tidal, and makes a considerable bend in its course. This has so impressed the natives of this old hill-fort, that they style this short street "The Plains," and have chosen it as the site of their one monument, a grey granite obelisk, inscribed to the memory of poor William John Wills, a native of Totnes, who was, with Burke, the first to cross the continent of Australia from south to north, and who died of starvation in 1861, on the return journey. To the botanist, the memory of this ill-fated expedition is associated with the Rhizocarp Marsilia salvatrix, the "Nardoo," on the scanty starch in the macrospores of which the party kept themselves alive for some time. Did the simple obelisk require embellishment, nothing could be more suitable than the pretty quatrefoil frond of this aquatic, that is now familiar in many greenhouses.

From the river and the "plains," as at Exeter, a steep street denominated Fore Street ascends to the clock-surmounted arch of the West Gate of the old town, on either side of which steeply sloping gardens and houses, rising rapidly one above another, mark the line of the old walls, just within which stand the church and Guildhall. The former is a fine specimen of the Perpendicular architecture, so characteristic of South Devon. It is built of the warm-tinted red ochreous limestone of the district, and the only church of the little borough is, with its double north aisle, ample chancels, and lofty tower, a building Totnes may well be proud of. The painted stone screen, with most delicate tracery, is undoubtedly one of the finest in the kingdom, whilst the carved Oak Corporation pews remind us that we are in a municipality.

The old priory on the north side of the church, now used as a prison, justice-room, and guildhall, all in one, is most quaintly interesting. We were carefully examining the castle betwixt two keys of the town arms, above the justice-seat, the commodious stocks to accommodate four culprits, the oil-paintings of departed magnates, and the "linen-pattern" scroll-work on the Oak benches, when we were frighted away by the solemn inquiry from the aged female custodian of an equally ancient male, "Is there any one in the prison?" It was justices' day, and there being, it seemed, "a plentiful lack of" prisoners, we thought we had better leave, before some Dogberry or Verges should prove mistrustful of our botanical vasculum or geological hammer.

From the church the High Street still ascends, flanked on either side by quaint granite-columned "piazzas," faintly suggestive of the "rows" at Chester, to the Castle, whence Judhael de Totnes, the founder of the Priory of St. Mary, was able to overawe his feudatories in the town. The Castle is now enclosed and neatly laid out as a garden, the main lawn being devoted to the now ubiquitous tennis. The keep is the chief portion preserved, the building being, as the American tourist remarked, "in a very bad state of repair." A lofty mound, probably consisting merely of *débris*, covering a lower storey of the tower, is now draped with Hart's-tongue, which is perhaps the most abundant Fern of South Devon, and ascended by a somewhat painful flight of steps; whilst the upper storey is a circular grass plot, some 60 feet in diameter, surrounded by a 10-foot wall, on which is a path round the battlements, commanding a fine view of the gorge of the Dart. A young tree, springing from among the battlements, suggested to us the consideration that, picturesque though they may be, the custodians of such places should beware of permitting the extensive growth of such parasitic vegetation, for the roots of one such tree may work more damage than one of "old Crummle's" cannon-shot. Almost all our ruins are attributed, somewhat unfairly, to the Lord Protector. On one side of the keep its slopes have been industriously terraced into a kitchen-garden, and in another part of the grounds a very perfect portion of the Castle ditch was overgrown with Periwinkle, Mullein, and that lover of made ground, the greater Celandine. Chelidonium majus may be a weedy thing, but after all so is Macleaya cordata, the foliage of which is no whit more unique in outline and colour than is that of our native Papaverad.

The walls here, as elsewhere, throughout the district, bore many fine plants of Cotyledon umbilicus—a characteristically West-country plant; but the tall spikes of its creamy blossoms were over at the season of our visit. The pleasing combination of the Mountain Ash, with its slender gracefulness of stem, Fern-like foliage, and distinctively coloured fruit—then not as yet ripe—against the grey ruined walls, was also to be noted here.

*(To be continued.)*

# FORESTRY.

A SELECT Committee of the House of Commons was appointed on Friday, May 15, "to consider whether, by the establishment of a Forest School, or otherwise, our woodlands could be rendered more remunerative."

The first witness examined was Mr. William G. Pedder, head of the Revenue Department of the India Office. The forest organisation in India, he said, originated in 1846; and in 1863 further steps were taken to secure the scientific training of Indian forest officials. Last year the gross revenue had risen to nearly £1,000,000, and the nett revenue to nearly £400,000. Mr. Pedder expressed an opinion that in twenty or thirty years hence, when the result of what is now done has become apparent, the nett returns of the revenue from Indian forests will become very much larger. The Indian Government established their school at Dehra Dun because it was desirable that officers, even of the lower grade, should have some special training. It had only been established for five years, so that they could not tell yet what the the result of it might be.

But the improvement which has taken place in the forests was a much more important element than the mere increase of nett revenue. The forests were in course of being so completely destroyed in the various parts of India that the duty of the Forest Department had been to conserve them. He thought that, by the improvement of the education of our forest officials, we might produce somewhat similar improvements in England to those which have resulted in India. Believing there might be some improvements effected in training the forest officials, we requested the French Government to send over an experienced officer to examine and report upon the state of the English woodlands, and the authorities sent over Professor Boppe, who made a tour of inspection of some of our forests, accompanied by Colonel Pearson, then forest officer at Nancy, and some of the students. In his report the Inspector of French Forests says, were it only for the purpose of replanting the five or six millions of moor and waste land which cover one-third of the Highlands, he should consider there was a sufficient reason for the formation of a Forest School. He recommended that a National Forest School be founded in Great Britain, and that Professorships of Sylviculture be instituted at Cooper's Hill and at Edinburgh. He believed the establishment in England of a similar school to that of Dehra Dun would be advantageous.

Dr. Hugh Cleghorn, who was for twelve years conservator of the Madras forests, said he concurred in Mr. Pedder's views. It was unquestionable that, if we had more trained officials, our woodlands would be rendered more remunerative; and it was marvellous that we should not at an earlier date have begun to adopt some means to preserve them. The establishment of a Forest School in each of the three kingdoms would be a great advantage to this country. The supplies of timber coming from abroad were rapidly diminishing, and it was of great consequence that we should endeavour to increase our own production. There were many places in this country exceedingly suitable for planting, but it would be necessary to exclude sheep for perhaps thirty years.

Colonel Pearson, who represented the Indian Government for eleven years at the Forest School at Nancy, said he had the general charge of the forest students, and had been through most of the principal French forests. He had also been through the British forests with the French Professors. Several English colonists had applied to him for officials to take the management of forests, and, being unable to find any qualified Englishmen, he had been obliged to recommend French officials. The school at Nancy was an admirable one, and had done great service by instructing a very able body of men, who were now carrying on good work in India. He was in favour of supplementing the general education given in this country by giving a special forest education in some convenient place, where there should be a museum supplied with an instructor in forestry who might give lectures on the subject, and conduct the pupils from time to time into different forests with the view of enforcing the instruction of the lecture-room. He did not know one mature forest in England or Scotland at present, and, therefore, for an important part of the instruction relating to the removal of the crop, the students would have to go abroad. It would be desirable to interest in this subject persons concerned in the education of land agents. We should suffer in the future if this matter were not taken up now. He would give three courses—elementary, for the wood manager; more advanced for the land agent; and a higher course for those who wanted a thorough education; but for the complete course men ought to go to the Continent. There was one spot in the Forest of Dean especially suitable for instruction; but neither there nor in the New Forest could anything be shown regarding the management of Conifers.

Mr. W. T. Thiselton Dyer, Assistant Director of the Royal Gardens, Kew, said Kew performed, to a large extent, the part of a botanical authority to the Government, and when the Colonies applied for information, the Government sent to Kew for assistance. It had been found impossible to recommend to the Colonial Office properly qualified persons either to report upon or to manage colonial woods. Apart from the trained officials of the Indian Forest Department, it was practically impossible to meet the requirements of the Colonies; and that department had only spared men temporarily, which had caused great inconvenience. A good many of our Colonies had now come to that state of things that there will

probably be a demand for persons who understood the management of forests. He would make the demand for India a kind of nucleus of a school which should be utilised for the education of such gentlemen as wished to undertake colonial service, and for the instruction of land agents and persons competent to give advice as to our own woods.

### The Small leaved Lime.

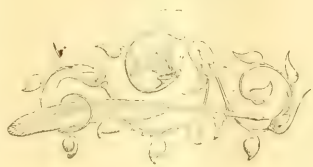
Where a neat, somewhat low-growing shade tree is required Tilia cordata is preferable to either T. platyphyllos or T. vulgaris. At Metz, and elsewhere in western Germany, and also in eastern France, &c., where the three species were often growing in close proximity, the contrast between the bright, cheerful, fresh appearance of the first-named and the parched-up, almost leafless state of the two latter was very marked last month. In some towns the street avenues, and the trees planted thickly in the squares for shade purposes, were almost all T. cordata, which seems rarely planted in Britain. It may be as well to remark that T. cordata is the correct name of the species generally mentioned in works on British botany as T. parvifolia. T. platyphyllos and T. vulgaris are both included under the old name, T. europæa; the two species are, however, thoroughly distinct, and in most cases can be readily recognised by the leaves alone. The first has soft leaves, more or less hairy on both surfaces, and flowers earlier than T. vulgaris, which has the leaves glabrous except in the axils of the principal veins.

## WOOD PAPER.

The use of wood in paper-making is not as new as might be supposed. This means of supplying the want of rags in the manufacture of paper dates nearly a century back, and under certain processes of development wood now forms an important element in the paper industry. The extensive employment of wood-pulp in paper-making has in recent years given an impetus to the establishment of factories in all parts of Northern Europe, and in the Northern States of the American Union, so as to meet the increasing demand for this relief material, which is used chiefly for mixing or consumption with stock. It is said that in Germany alone wood-pulp constitutes 75 per cent. of the paper made in that country. The first industrial application of wood-fibre in the United Kingdom was made in 1847, when mechanical wood tissue obtained by grinding wood was used as an element in paper-making. Later on, about 1853, better wood-products under various names began to supersede the so-called mechanical wood. The later manufactures were chemically prepared, and therefore possessed superior advantages. They resolve themselves into two classes, viz., 1, those partially treated with bi-sulphite of lime, and called sulphite; and, 2, those effectually treated with caustic soda, and known as "chemical wood," or cellulose.

These two varieties of wood-pulp differ materially, both as regards utility and cost. The first occupies an intermediate position between absolute rawness and absolute purity of the wood fibre. The yield of pulp is larger and of stronger fibre, but it is wanting in purity, which limits the use of sulphite; at the same time the price is only half that of cellulose, and is a vast improvement upon ordinary wood fibre, or ground wood. It is purer than mechanical wood pulp, and worth double its price. Sulphite is particularly adapted to the cheap papers of the present day. Notwithstanding its imperfections in respect to purity, the fibrous nature of sulphite renders it in itself, when properly used, a suitable material for paper-making without any other backing of fibre whatever. The price varies from £7 to £8 per ton, landed free in London. It is largely imported into India as an adulterant, and there is no reason why this country should not meet its own supply with the facilities which the large sources of cheap suitable timber available on the Himalayas afford. The Indian importation has received an impetus of late years, and shows a marked tendency to continue increasing, notwithstanding the numerous raw materials in the country for paper-making, and the fresh additions always being made to their number.

As regards chemical fibre, or cellulose, it is the purest variety of wood-fibre; but this purity is obtained at great cost, and at a sacrifice of strength. The severity of the treatment which it undergoes not only reduces the bulk of the out-turn, but depreciates the texture, thus making it unsuitable for the ground-work of any good quality of paper. Moreover, the cost of manufacture is very great, and precludes its extensive use. But the purity of the fibre makes cellulose a blending material of the first order. Its market value at present is about £14 per ton. In England there are three establishments which produce "chemical wood," and, under various designations and patents, this wood-pulp system bids fair to show substantial dimensions at no distant period. *Indian Agriculturist.*



## Home Correspondence.

**Jasminum azoricum.**—Leaving out of question the pure white sweetly scented flowers of this species, the foliage alone offers a plea for its cultivation. Excepting J. heterophyllum, we seldom see a species with so large, glossy, deep green leaves. They are compound, with three ovate or subcordate leaflets. The plant is figured in the *Botanical Register*, 89, and in the *Botanical Magazine*, t. 1889, and is recorded as being a native of Madeira, as well as the Azores, whence we have other useful greenhouse plants of various habit. It is a very old introduction, and, like other uncommon plants, gets lost sight of in a few gardens, or altogether lost to cultivation, till we renew our acquaintance with it, or reintroduce it. A pillar or rafter of the greenhouse is the most suitable place for it, where the slender stems will attain a length of 12—16 feet. The flowers are produced in axillary cymes along the upper side (or that towards the light) of the younger shoots, forming wreaths 1—2 or more feet long. *J. F.*

**The Rowe Orphans.**—Allow me to express my sincere thanks to those kind friends who have so generously responded to my appeal on behalf of the orphan children of the late Mr. and Mrs. Rowe of Northampton. Through the kindness of friends the two girls have been placed out, and in some measure provided for (that is to say, for the present). The boy is still an inmate of the Northampton Infirmary, and a long time must elapse before he can possibly be restored to health, even if he ever can be—a very doubtful matter. I, therefore, trust that those friends who have not yet subscribed to the fund will do so at their earliest convenience; however small their contribution may be it will be most thankfully received by the Rev. T. S. Thornton, Vicar of St. Sepulchre's, Northampton. *H. Beasley*

**Selecting Apples for Planting: Culinary Varieties.**—I am an advocate for planting in great variety, that is, if space will allow. I do not mean that the planter should confine himself to a single specimen of each, but from the experience one gets by planting largely one is enabled to increae the stock of such kinds that adapt themselves to the particular soil and climate. I own it is desirable to have quantities of good fruit of several standard varieties, and such varieties can only be rated as such after proving them in the above manner. The period of flowering, a critical time for all fruits of the different varieties, is not the same for all varieties, and we all know what a few frosty nights and tempestuous days and nights will do; therefore, by planting in variety we can make sure of some escaping the adverse elements. The variableness of our climate, too, acts upon the fruit during summer and autumn, so that some keep much better than others, though classed for use at the same time. We have proved several varieties here, and readers of these pages have of late been advised to make their selections. The planting season being near at hand I will enumerate a few good and reliable kinds noted for their heavy cropping quality and good growth, suitable for pyramids, this mode being the most desirable for gardens large or small, if properly attended to at the root and top. Early varieties:—Lord Suffield, well known, the best; Duchess of Oldenburg, heavy cropper, fine for orchard planting; Hawthornden (Old), liable to canker on light soils. It should have the soil prepared deeply, with the addition of plenty of good loam, and after commencing to fruit it should be occasionally supplied with good dressings of vegetable refuse (well decayed); Cellini requires the fruit to be well thinned in its early stages, being a very heavy cropper. It attains a beautiful colour; Ecklinville, fine; Keswick, useful either for dessert or kitchen use—a sure cropper; Jolly Beggar, foliage much like Hawthornden, but fruit quite distinct and handsome in shape; Stirling Castle, fruit much like Hawthornden in shape, colour and texture. Mid-season: New Hawthornden, more perfect in shape than the Old, and keeps longer; Peasgood's Nonsuch, the finest of all Apples—perfect in shape, and a free bearer; Laddington, very fine; Cox's Pomona, free bearer; Golden Noble would, if I were limited to one variety, be my choice. We have never failed to get a good crop of this variety, even when most of the others have failed. It it useful both for kitchen and dessert, and may be used from October to the end of February. It assumes a beautiful golden colour, such as no other Apple I know puts on. It makes a fine Orchard tree. We have two specimens planted thus with some thousands of fruit on. Our pyramids are also very prolific. Dredge's Fame, in some market gardens here is grown largely: it is a tremendous bearer, with fruit of a fine shape; Bedfordshire Foundling, good; Flower of Kent, very good; Late Blenheim Orange may be had to bear in a small and young state if kept lifted every few years; Alfriston is very good; Galloway Pippin is a distinct, handsome, and prolific variety; Lady Henniker is a free bearer; Dumelow's Seedling is well known; Lane's Prince Albert will be grown as extensively as Blenheim Orange, being a first-class Apple; Beauty of Kent is good. We have many more varieties suitable only for exhibition or what come under the category of heavy croppers. I may mention that our soil is a sandy loam resting on the Red Sandstone rock, the aspect being southerly. *D. C. Powell.*

**Economy and Seed of Potatos.**—Your correspondent, George Lambert, at p. 374, gives the result of a heavy yield from 2 lb. of Potatos, and expresses a wish to know if "as much or more has been got in any other way?" Perhaps the following may have some interest for him, as well as some other of your readers. On April 13, 1883, 1 lb. of small tubers of Clarke's No. 1 Potato were weighed, and one of the tubers taken from this pound was cut into eight sets, each set having one eye. These eight sets were then placed separately in suitable soil in thumb-pots in a greenhouse. On April 25 the 1 lb. of tubers, minus the one tuber dealt with as just described, were cut into seventy-nine sets and planted in well fertilised, very light sandy soil. On May 9 nine cuttings were taken from the shoots of the eight sets in thumb-pots, and each potted separately into nine more thumb-pots. On June 1 the nine cuttings, which had by that time become well rooted, were with the eight sets all planted out into the open ground. On October 24 the crop was harvested, with the following results:—The eight sets produced 2½ lb. of tubers; the nine cuttings, 6 lb. ditto; and the seventy-nine sets, 10 stone 8 lb. Total from 1 lb., 1 cwt. 3 stone 2½ lb., or 156½ times the seed. The result of this trial, with others, appeared in your issue for April 5, 1884, p. 456. On March 28, 1884, from 1 lb. of Magnum Bonum Potatos, fifty-three peel sets (very thin slices of peel, with one eye to each slice), weighing altogether 2¾ oz., were cut. These were planted on April 2, in fairly good friable soil; the summer of 1884 was very hot and dry, and the soil and situation of the Potato bed as dry as fairly well-fertilised mould would could be, over a very dry and porous subsoil. The following was the result on taking up:—Of the fifty-three sets, weighing altogether 2¾ oz., fifty grew, and produced, when dug on Oct. 4, 2 stone 10 lb. of good marketable tubers, some of them much above the average size, and 1 stone 3 lb. of small and inferior tubers—in all, 3 stone 13 lb. (55 lb.), or 880 oz. from 2¾ oz., equal to over 16½ oz. per set, or 320 times the seed, equal to 2 cwt. 6 stone 12 lb. from 1 lb. The sets were placed in the ground at nearly or rather less than 2 feet by 1 foot, *i.e.*, at the rate of

about 20,000 sets per acre; and 55 lb. from fifty-three sets is equal to over 9¼ tons for 20,000 sets—a very good weight per acre in a somewhat unfavourable soil and very hot, dry season. According to this trial, the weight of peel sets of Magnum Bonum Potatos required per acre to produce a crop of over 9¼ tons, in a soil and season not at all favourable, is less than 65 lb. *J. E. Ewing, Sept.* 21.

**Injurious Insects.**—Amongst the most recent additions to the Kew Museum is a set of mounts, illustrating the life-history of some of the most destructive of vegetable-feeding insects. This series has been got together and arranged by Mr. Moseley, of Huddersfield, under the superintendence of Miss E. A. Ormerod. The plan adopted in this new method of imparting a knowledge of the habits and destructiveness of certain insects has, it seems, been developed from a plan exhibited by Mr. Haley at Frome last year as the successful competitor for the prize offered by Miss Ormerod. The plan is to show the life history of each particular insect in a separate glazed mount, and a model or a specimen of the plant, showing the ravages it is subject to, and in some cases the parasites which attack the insects themselves, which are fully illlustrated both by actual specimens and by magnified drawings showing the various stages of their development. A description of the insect written in plain terms so as to be understood by all, follows, and the plants are enumerated upon which the creature feeds, then follows a few words of instruction on the prevention of insect attacks and remedies. The set just deposited in the Kew Museum consists of ten of these mounts, ten of which have been arranged in their respective cases according to the botanical affinity of the plant attacked, such plants being the Turnip, Cabbage, Vine, Bean, Pea, Plum (attacked by Winter Moth), Apple (attacked by American Blight), Gooseberry, Celery, Lettuce, Beet or Mangel, Onion, Wheat (attacked by Daddy Long-legs). Potato and grass (attacked by Click-beetle and wireworms). This set of mounts, which has been specially prepared for the Kew Museum, are eminently suited for teaching in schools; and I understand that others are to be prepared on similar lines for use in Agricultural Colleges or schools. *R. Jackson.*

**Zephyranthes candida.**—If any one wishes to possess a pure white Crocus-like blossom at this or an earlier season of the year let him grow this plant. I have it now flowering sweetly, a clump of some dozen bulbs in a 32-pot, growing in a compost made up of loam, leaf-mould, and sand, in which it appears to thrive. The blossoms are solitary, and without a taint of purple, in the centre being a circle of golden stamens. This plant possesses one advantage—the flowers remain fresh and clean for a good time. My plants have cool treatment all the year round. I think that if this subject could have a generous treatment in spring, by placing it in a little heat to induce vigour, and then to gradually harden it off so as to bear a cold frame, that it would flower much more freely than when grown altogether in a cool house. Two things appear to be essential to its success. One is that the roots be somewhat confined in the pots in which the specimen is growing; and secondly, that the roots be not too frequently disturbed. Valuable as it is, one does not often see it in gardens, where it certainly deserves a place. Has any one tested its hardihood by planting it out-of-doors? Will it succeed under favourable conditions? If so, does it flower more freely than when grown in pots under glass? *Ealing.*

**Anemones.**—In the short note appended to the reference to St. Brigid's Anemone from Mr. Burbidge there appears what seems to be a contradiction of terms or, rather, of advice, which needs explanation. First, it is said, "they are best not transplanted," and a couple of lines lower down, "they can also be t ansplanted quite safely, though in full flower." I presume ft was intended to convey the advice that seedling plants should not be transplanted, but that older plants, even when in bloom, may be so, safely. I grow these Anemones from seed every year, and always transplant seedlings; indeed, I have but just now dibbled out hundreds of seedlings raised from the present year's seed. It is my invariable rule to sow seed in Melon boxes as soon as it is well ripened, and thus have an abundance of strong young plants, with good roots attached, to dibble out in the autumn. I find the advantages are—first, that the plants may be got out into ground which has carried another crop of some kind, and having a fresh dressing of manure added, is just in the autumn in capital tilth for planting. The plants separate easily, and so planted make beds of uniform width and completeness, and by being planted in lines, the beds are also very easily cleaned. Thus I gain several months, as if the seed were held over till the following March, and then sown, I should have lost time, whilst that same spring the greater portion of my autumn bed of plants will produce beautiful blooms. Of course, being left in the ground all the summer, and lightly top-dressed with short manure, the plants break up again in the month of August, and soon begin to bloom, and do so freely all through the winter. In the autumn also more attention may be given to work of this kind than can well be bestowed in the spring. I do not know whether the St. Brigid strain differs materially from my own, but I shall be very pleased to exchange seed with Mr. Burbidge. Certainly Ireland has an advantage over Middlesex in a moister and therefore more growing climate. *A. Dean, Bedfont.*

**Late Prolific Raspberry.**—I think Mr. Herrin, of Chalfont Park Gardens, has some little cause for complaint that whilst the Fruit Committee of the Royal Horticultural Society was apparently highly impressed with the appearance of the autumn fruiting Raspberry he exhibited the other day, that body should have asked, before making any award, to see it again, evidently forgetting that five weeks must elapse ere another meeting is held, and in five weeks goodness knows what may happen. Should Mr. Herrin be enabled to show his Raspberry again in good fruit so late as October 13 next, of course its persistent bearing, as well as its prolificacy, would be assured; but surely it can hardly be expected that any Raspberry could exhibit its true character and special flavour at so late a period of the year; hence the apparent hardship to the raiser as seen in the action of the committee. I have seen this Raspberry growing at Chalfont Park at this season of the year more than once, and can testify to its remarkable prolific character; indeed, it may be said if well grown in any garden, to add some four to six weeks to our Raspberry season—a matter of no small importance, for we have few more popular culinary fruits, and the extension of its production over a lengthened period would indeed be of great service, especially as the Raspberry is of all fruits one of the most certain to produce a crop, let other kinds be plentiful or otherwise. *A. D.*

**Transplanting and Renovating Fruit Trees.**—Hitherto the weather has been much too dry, and the atmosphere too arid, to think of disturbing fruit trees, but now that we have had rain and a favourable change for the work, no time should be lost in carrying it out, and operating on those that are unsatisfactory, or have to be moved from one place to another. Some hesitate to do this while the plants are in leaf, but after the middle of September they may be lifted with safety; and if there is no delay, and a dull, favourable day is chosen, the trees will do far better than they will if left till later in the season. These remarks, it need hardly be said, apply to those on the spot, as of course it would not do to get them from a distance till they have become defoliated, but when they can be got up and in again quick the transplanting may be done without the leaves flagging, and the leaves are of great use in inducing fresh roots. In renovating, the plants I like to start with first are Vines, as great liberties may be taken with these, for all one has to do to keep the foliage fresh is to close and shade the house, and syringe heavily, and if this is done the larger portion of the soil may be taken from the border, and new added, and the Vines brought round and invigorated at once. To insure the work being carried out expeditiously, several hands should be employed at it, and as the roots are laid bare it is necessary to damp them by sprinkling them over, and to keep them covered with wet mats, or the small ones will suffer and dry up, and the bark of the larger ones become contracted and injured by the air getting access to them. The way to get the soil out with as little trouble as possible is to skim the surface of the border and gradually work down from the front, tracing the roots back along their course, and clearing the earth out from among them with a suitable fork. Soil.—The great mistake many make when seeing to or replanting Vines, is having a mixture of soils, as it often happens that good loam is spoiled by the additions put with it, and if anything at all is added, it should only be a few crushed bones, or a sprinkling of soot, as manure rots the fibre and alters the texture, rendering it close, after a short time, inert and sour. This being so, it is far better to keep to the top spit of some old pasture, the most suitable soil being that of a hazel colour, rather inclined to be stiff; and this may be used quite fresh, after the grass has been mown oft, as all that is requisite is to chop it up roughly and wheel it in just as it comes. To have the roots in their proper positions they must be laid, or spread out, at the different levels they emanate from as the filling in proceeds, and carefully covered without being trampled on, or pulverised, when they will not be long in getting fresh hold. With the roots laid in and covered, the next proceeding is to mulch, and if this is done with long stable manure that has just a little warmth in it, a slight fermentation will set in in the border, that will be a great help to the Vines. To check the buds of these from being unduly excited plenty of air should be given as soon as the leaves will stand, and though it may be necessary to keep the house a little close by day they will bear it open by night if syringed or damped the last thing. Peaches and Nectarines under glass.—The same remarks that are made above apply equally to these, and if trees are carefully lifted at once and removed into the house and there attended to in a similar way to the Vines, they will finish and plump up their buds and bear fruit almost as large and fine in quality as they would had they been undisturbed. Before transplanting, however, or interfering with their roots, it is a good plan to thin out their shoots and leave no more than are wanted, as the pruning not only eases the trees but gives the wood more light and air, and this enables it to ripen before winter sets in. Plums and Apricots.—The leaves of these being thick and hard plants of both will bear disturbance better than Peaches and Nectarines; but when moved they must be kept up by frequent syringing, and if the sun breaks out it is advisable to shade by hanging a mat or cloth in front, or placing some branches of evergreen over them. Watering.—To make sure of the soil settling properly about the roots the water given should be thrown on with force before they are finally covered, as by applying it in that way the earth is carried into all the cavities, and the plants then have a good chance to get hold. *J. S.*

**Maréchal Niel Rose.** — This Rose is now in flower in Castle Hamilton conservatory, this being its third crop of flowers during the present year. *H. Haddock.*

**Country Growers and Town Salesmen.**—One of our most largely circulated daily newspapers bemoans, in a cleverly written article, with some truth, the poor development of native productions and the importations of much fruit and vegetables, which could, by home cultivation, prove a source of wealth to English growers, and check the divergence of the stream of British wealth into foreign channels, when it is sorely needed to render fruitful the poverty-stricken land at home. It may be that the article in question was merely written to interest and amuse the reader, to strike a political blow at free-trade, or to fill the paper—such things have been. I am merely taking it as a text for a letter to you to detail certain grievances which affect private growers, misled by glowing advertisements or generously priced market lists. Now I can tell the tale of a basket of Crown Artichokes, thirteen dozens, which were sent for disposal to a firm of salesmen who weekly advertise in your paper; on their agreeing to dispose of these surplus vegetables, and their offer to send account of sale of same, or at the end of the week or month, the hamper was, as I have said, despatched. And nothing further was heard of them. At the end of the month the sender wrote, but received no reply, at the end of six weeks another letter was sent, and the answer returned was that not a shilling had been offered for the Artichokes, so they could not be sold, and that a note to that effect had been sent, which the firm "supposes had miscarried." Now at this time for weeks before and since, Artichokes had been quoted as selling at 3*s.* per dozen; now the quotations are higher. It is possible the salesmen's business, not being so large as

their advertisements would lead gardeners to believe, may not have been able to effect a sale, but surely if unsuccessful one day they might have been fortunate the next; Crown Artichokes are not perishable, like Peaches or cut flowers. This case, which is but one of many, argues a lack of combination among the market people; surely some would be glad of those fruits or vegetables for disposal of which the consignee may have a superabundance. This case, or cases like this, explain why gardeners do not care to send their surplus fruit for disposal to the London markets, and leave the road clear to foreign, often inferior, and always staler, importations. Better to have fed the costermonger's donkey with 156 unproverbial Thistles (worth, according to the market list, 3*d.* apiece) than have had them and their hamper launched into space, swept into the Thames, or left among the refuse of Covent Garden Market. Perhaps, sir, you or some of your readers would kindly advise gardeners of great and small holdings as to the best manner of disposing of the products of their skill, even to the establishment of a Gardeners' Co-operative Society; it would be a boon, not to cultivators only, but to the public, and it would help to foster into useful life the latent energy and capabilities of English cultivators and English soil. *C.*

**National Pear Conference.**—Now that the date is fixed, and forms are ready for those who intend to exhibit at the great Chiswick meeting—for such it will no doubt be—I think it may not be out of place to suggest that the committee, instead of issuing simply a catalogue, should put up in book form a suitable monograph of Pears; it would be of great value to those who, from many causes, cannot attend the conference to make notes themselves, and perhaps no such other chance will occur again to do so so accurately. The book suggested could be issued in monthly parts, and should contain at least one coloured plate, representing, say, from two to six varieties, with sufficient woodcuts and letterpress matter to finish the work in a stated number of issues. I know many who would be pleased to obtain something of this kind, and I feel sure, besides the great boon, it would be a step forward, and a duty such as any committee of this sort ought to set about to execute; they would know then they had thoroughly done the work they had undertaken, and would leave the general public with such a book in their possession, the value of which can never be over-estimated. *H. C.*

**Lye's New Fuchsias.**—That such a successful exhibitor of Fuchsias as Mr. James Lye, of Clyffe Hall, Market Lavington, should also be a raiser of seedlings, is not surprising. No one so readily detects the failings of a particular variety as a grower and exhibitor of it, and Mr. Lye, finding that some of the leading varieties of Fuchsias were wanting in certain important respects, set himself the task of remedying these by raising new varieties of a comparatively faultless character. The fact that his new varieties are being largely grown for decorative exhibition purposes is ample testimony to their excellence; but yet, believing that the *ne plus ultra* stage of perfection in this popular flower has not yet been reached, he is still at work doing his best to improve, and that, too, with satisfactory results. So far his seedlings have been shown only in the West of England, and on the occasion of the Bath Floral *Fête* on September 2 a Special First-class Certificate of Merit was awarded to them for their obvious high-class quality; and the following have been selected for sending out early in the coming year:—Dark varieties: Emperor, bright red tube and sepals, the latter long and broad; maroon corolla, shaded with purple; a very fine bold and distinct variety, of the highest value for pillars, trellises, baskets, &c., being very fine indeed, and has a handsome drooping habit. It will also make a fine exhibition variety. Mr. T. Bright, deep rosy-pink tube and sepals, the corolla rose, with broad margins of rich blue-purple; of medium size, very pretty, distinct, and effective. Mr. F. Glass, bright deep crimson tube and sepals, purple-maroon corolla, the two colours contrasting finely; medium size; a very fine and distinct variety. And James Welch, bright rosy-red tube and sepals, the latter of fine form and handsomely reflexed; pale maroon corolla, much shaded with bright purple. Light varieties: Lye's Perfection, creamy tube and sepals, the latter delicately suffused with pink, and handsomely reflexed; bright carmine corolla, fine form, and very showy. Mrs. F. Glass, creamy-white tube and sepals, deep pink corolla, tinted with violet; fine form, stout, and very good; in the way of, but a decided improvement upon, Beauty of Trowbridge. Diadem, delicate blush tube and sepals; pale magenta corolla, broadly edged with brilliant crimson; a very fine, bold, stout, and showy variety. Beauty of Lavington, white tube and sepals, bright rosy-carmine corolla, with slight shading of violet; very pretty and effective. Emily Bright, creamy-white tube and sepals, bright carmine corolla, stout, fine form, and of the best quality; an improvement upon Mr. Bright. Excelsior, creamy tube and sepals, tinted with emerald; stout and well reflexed; rich deep rosy-magenta corolla, flushed with carmine; very fine and distinct, and a grand exhibition variety. And Nellie, creamy-white tube and sepals; corolla pink, suffused with pinkish-mauve, deepening to clear mauve; good form, stout; a very pleasing and distinct variety. *R. D.*

## Foreign Correspondence.

Clianthus Dampieri.—What a fine old plant this is! I have it planted here against an east wall, in a mixture of peat and loam and sand, where it grows luxuriantly and flowers profusely. Its large Pea flowers of bright scarlet colour, with a large black spot, always attract attention, on account of their colour and shape. Our plant is grafted on Clianthus puniceus, this species being hardier and not damping off in the way peculiar to Clianthus Dampieri; I can, therefore, strongly recommend the grafting on Clianthus puniceus. My former employer, the superintendent of the Royal Gardens, Willhelmshöhe, this year planted a Clianthus Dampieri on a warm southerly spot of the rockery, where it seems to be quite at home, but on account of its straggling habit it by no means looks so pretty as does my plant against a wall, where each shoot can be fastened and trained in a proper direction. *C. Wissenbach, Cassel, Germany.*

The Uses of Cotton-seed in America.

It is well known that Cotton-seed is, as an article of commerce, a comparatively modern introduction. Not many years since the seed, which was produced in such abundance in the Cotton plantations of America was, not only a waste product, but one which the growers scarcely knew what to do with. Of late years the oil has been expressed in continually increasing quantities, and applied to a variety of useful purposes, not the least important of which is its substitution for Olive oil, for Cotton-seed is now purified so carefully that the result is a clear bright limpid oil, equal in appearance if not in taste to the best oil obtained from Olives. Mills for the expression of Cotton-seed oil have been erected in America in increasing numbers of late years. In 1870 there were only twenty-six mills, and in 1880 forty-seven, six of them in New Orleans. At the present time these mills are scattered throughout the South in all the important Cotton centres on the rivers and on the railways, and number 108 in all. The average yield of seed is about 3½ lb. to every pound of lint. The amount of seed annually crushed in the United States averages about 420,000 tons, a ton of Cotton-seed yields 35 gals. of crude oil, 22 lb. of cotton, 750 lb. of cake of average value of 19 dols., making the total value of the Cotton-seed product of the South 8,000,000 dols., or 3 per cent. of that of the Cotton crop.

Cotton-seed cake—the residue of the seed after the expression of the oil—is used chiefly for stock feeding and for fertilising purposes for this purpose; it is generally ground into a meal known as Cotton-seed meal. Most of that used for feeding purposes is shipped to this country, where it is extensively used for fattening stock; it is also said to be a splendid food for cows, causing a rich and plentiful flow of milk. The cake is shipped from America in sacks containing 200 lb. each; it is of a rich golden colour when fresh, and has a sweet, nutty, oleaginous taste. It is a very valuable fertiliser for a large number of plants.

The oil from the Cotton seeds has been applied to a variety of uses in America, such as the manufacture of the finer kinds of soap, also for mixing with paint, and for lubricating purposes; it, however, dries too slowly to be valuable for the first purpose, and is too gummy or sticky for the second. Another product is glycerine, but this manufacture has been but little attended to as yet. One gallon of crude oil will make 3½ lb. of glycerine. Its chief use, as before stated, is as a substitute for Olive oil, and the following extract will show the state of perfection in which the oil is now prepared:—"It is nearly impossible to detect good Cotton-seed oil from the best brands of Olive oil by taste, smell, or any other process; this the Olive growers of Italy have been unwillingly compelled to acknowledge. An instrument called the oleometer has been invented to distinguish between the two oils by means of their different specific gravity; but this is confessedly an uncertain and unreliable test."

The hulls or shells of the seed are used as fuel to drive the oil-expressing machinery, and containing some oil, they burn well and produce a good heat, and are used exclusively without any other fuel. It was recently stated in America that before long Cotton-seed would yield all the Grape sugar demanded by the commerce of the world. It is estimated that, "if all the seed produced was used and crushed this little article, once despised and deemed of no value, would be worth between 80,000,000 and 100,000,000 dols. annually."

## WILD MANGOS.

The Jungli âm, which is the original stock of all the fine Mangos, is not often met with in its native habitat, and less frequently in fruit. I have just received a few fine specimens of several varieties of Jungli Mangoes. From the fruits it appears they vary quite as much as our cultivated ones; and as to shape, they are the exact counterpart in miniature of many of our best varieties. My specimens came from the Kangra Valley, and were collected by a gentleman much interested in the fruit. I once saw the true Jungli Mango in the Dooars, and again afterwards growing at an elevation of about 2000 feet in Sikkim. It is very unlike the cultivated sort, having generally a straight trunk, whitish smooth bark, and thin leaves, forming a fine round-headed tree. The fruit rarely weighs 2 oz., often only 1 oz. The common country Mango, called "Beju," or "Desi," in Tirhoot, is really an inferior kind of cultivated Mango, and not the proper wild Mango of the forests.

Wild Mangos are found from India through Malay to Manilla and some of the Pacific islands, and it is not really known if there is more than one species. The wild and cultivated sorts are so widely different in shape of fruit that they could almost be called distinct species, but every intermediate connecting stage may be found to bring them under one head. The flowers of the wild and cultivated Mango are exactly the same in structure, except that in the wild one there are often more stamens fertile.

It may not be known to most people that generally in a Mango flower there is only one stamen out of the lot fertile; this one is curved round just over the pistil in a peculiar way, to facilitate the fertilisation. The so-called "nak," or nose of the Mango, is the place the pistil adhered to in the flower. All this can be plainly seen with a moderately powerful reading-glass or lens when the Mangos are in flower.

Protecting Mango Fruit.

A very good way to protect Mangos from the attacks of birds and insects is to get a lot of very finely-woven, round, Bamboo baskets made, say 4 inches wide at top, 5 inches at the bottom, and as long as may be required for the fruit. See that there is no room for a fly to get in through the basket-work. Then put the Mango inside as it hangs on the tree, push a long thin peg through the top of the basket by the side of the stalk of the fruit on one side, and another similar peg on the other side, and the Mango will hold the basket up itself; then tie a little calico over the top of the basket, taking care not to tie the Mango stalk, and also to completely shut up the top of the basket. The Mango stalk must be quite free, because when the fruit is ripe, or nearly so, it will fall of its own accord, and will be found to be just fit to gather. If a net be suspended under the tree then all danger of bruising the fruit will be avoided. Then shake the tree, to gather only

the ripe ones. These should be kept on a "machan" for a few days till quite ripe, as all Mangos improve by keeping a little, and should never be eaten perfectly fresh from the tree. *C. Maries, in "Indian Agriculturist."*

## CUDRANIA TRILOBA.

THIS name will be unfamiliar to most lovers of hardy trees and shrubs. It is, however, the true name of the shrub known in nurseries as Maclura tricuspidata, a comparatively recent introduction from China. From its resemblance to the Osage Orange, Maclura aurantiaca, Carrière concluded it was a Maclura, and named it M. tricuspidata. The Paris Jardin des Plantes was the first European garden which possessed the plant, and it was there it first flowered a few years ago. Probably the hot summer caused the species to flower at Kew the present year. It is a very interesting plant, a compact growing, somewhat spiny bush, with light green leaves, which vary very considerably in outline. In the young plant, and in strong shoots which develope after a plant is cut back, &c., they are very distinctly trilobate, but in adult-flowering plants the tendency is to produce larger ovate entire leaves. According to an exhaustive and very interesting paper on the subject, published by Mr. F. B. Forbes, F.L.S., in the *Journal of Botany*, the plant now in question is the "chê," "nu-ché," or "shih" tree, the notices of which in standard Chinese works have long been a puzzle to botanists. The following particulars are abstracted from Mr. Forbes' paper. The leaves are used for feeding silkworms, but it is also said that its leaves are hard and not so good as those of the Mulberry. The etymological meaning of the character "ché" is "stone tree," and the species is said to prefer stony ground. The silk produced by silkworms fed on the leaves is employed in making lute-strings, which give a clearer sound than the ordinary ones. One author states that bowmen use the wood to tip their bows with, and that the tree affords a reddish-yellow dye, called the "ché" yellow, which is used for the imperial garments. It is elsewhere stated that "ché" wood, to which has been applied a paste made of coal dust and vinegar, can be dyed black in a single night. For a very full account of the history and uses of Cudrania triloba the reader is referred to the *Journal of Botany*, vol. xxi., p. 145. A figure prepared from Kew specimens will appear shortly in the *Botanical Magazine*. *C. N.*

# Reports of Societies.

### MASSACHUSETTS HORTICULTURAL.

BOSTON: *August* 29.—At the exhibition to-day V. H. Halleck, Son & Co., showed a new hybrid Gladiolus, Argenteuil, which is, without doubt, the finest thing in this line. The stock originated with Herr Max Leichtlin. From the same firm came a new seedling variety of Lilium lancifolium, named Opal, white, with carmine dots, and quite distinct from any other variety. Mrs. F. B. Hayes exhibited a large collection of H.P. Roses and Asters. C. M. Hovey some good spikes of Hydrangea paniculata grandiflora. We also noticed large displays of cut flowers, Gladioli, Gloxinias, Phlox, Verbenas, and Marigolds. E. Sheppard & Sons exhibited a collection of flowers, including some Dahlias—viz., Evening Star, Acquisition, Canary, Gracilis, Perfection, Lutea grandiflora, White Queen, Nora, Auber, Harlequin, Aurata, Defiance, Firefly, and Purple Prince. They are not so good this year as usual, as they run to wood, and produce very few flowers, and these not of the best. On the fruit table were some fine specimens of the new Assomption Pear and Chenango Strawberry Apple, also some fine Moore's Early and Champion Grapes.

*September* 5.—This was the last of the tree Saturdays for this season, and was the best. H. B. Watts showed a new white Gladiolus named Fairy. Joseph Tailby exhibited the new Rose, William Francis Bennett, which the committee deemed of good colour, but poor in the centre; a First-class Certificate was awarded for it. The same award was made for the new Heliotrope, Roi des Noirs, of very dark colour; also to the new Rose, Perle d'Or, from C. M. Hovey. Dr. H. P. Walcott showed Veronica longifolia subsessilis. W. C. Strong exhibited seventeen vases of Maples, among which we noticed Acer Schwedleri and A. Reitenbachii, the young growth of the former being of the richest soft pink, and the latter having a purplish tint in its early growth, changing to a rich dark purple as the season advances. C. H. Hovey exhibited a group of new Gladioli, hybridised with G. purpureo-auratus. Mrs. F. B. Hayes sent Rhododendron Princess. Captain W. H. Trant, of the steamer *Venetian*, sent five Fuchsias, which had travelled 15,000 miles.

The display of fruits was very extensive. W. H. Hunt exhibited a dish of very large Clapp's Favourite Pears; F. J. Ducher a dish of Ott's Seeding, which, though the smallest, were undoubtedly the finest flavoured Pears in the room.

## PLANT PORTRAITS.

ALLIUM AMBLYOPHYLLUM, *Gartenflora*, t. 1190.

ARMERIA CÆSPITOSA, Boissier. — *Gartenflora*, 1885, t. 1192.

CARPENTERIA CALIFORNICA, *Garden*, July 18.

DACTYLIS CÆSPITOSA, Foot.—*Gartenflora*, t. 1194.

GENTIANA TRIFLORA, *Pallas*, *Gartenflora*, t. 1189.

KENNEDYA MARRATTYANA, *Garden*, t. 501.—Greenhouse climber. Leaves trifoliate, oblong, silky; flowers in racemes, crimson, Pea-shaped.

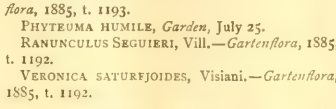
LINARIA ALPINA, *Garden*, July 25.

NARCISSUS POETICUS VAR. BIFLORUS.—*Gartenflora*, 1885, t. 1193.

PHYTEUMA HUMILE, *Garden*, July 25.

RANUNCULUS SEGUIERI, Vill.—*Gartenflora*, 1885, t. 1192.

VERONICA SATURFJOIDES, Visiani.—*Gartenflora*, 1885, t. 1192.




*STATE OF THE WEATHER AT BLACKHEATH, LONDON,* FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 23, 1885.

| MONTH AND DAY. | BAROMETER: Mean Reading Reduced to Sea-level | BAROMETER: Departure from Average of 18 years | TEMPERATURE OF THE AIR: Highest | TEMPERATURE OF THE AIR: Lowest | TEMPERATURE OF THE AIR: Range | TEMPERATURE OF THE AIR: Mean for Day | TEMPERATURE OF THE AIR: Departure of Mean from Average of 18 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity Mean for Day | WIND: Average Direction. | RAINFALL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. | In. | In | ° | ° | ° | ° | ° | ° | | | In. |
| 17 | 29.80 | —0.05 | 59.2 | 51.0 | 8.2 | 54.0 | —2.6 | 52.0 | 93 | E. N.E. | 0.28 |
| 18 | 29.83 | +0.05 | 62.5 | 48.5 | 14.0 | 53.7 | —2.2 | 50.9 | 90 | N. N.E. | 0.05 |
| 19 | 29.71 | —0.05 | 57.2 | 46.0 | 11.2 | 52.5 | —3.6 | 51.3 | 96 | S. S.W. | 0.15 |
| 20 | 29.92 | +0.10 | 61.0 | 44.2 | 19.8 | 54.0 | —1.8 | 48.3 | 79 | W. S.W. N.W. | 0.00 |
| 21 | 30.00 | +0.20 | 62.0 | 54.0 | 8.0 | 56.6 | +1.1 | 49.6 | 69 | N.E. E. S.E. S.W. | 0.62 |
| 22 | 30.13 | +0.31 | 67.5 | 42.5 | 25.0 | 55.3 | 0.0 | 59.0 | 84 | S.W. | 0.00 |
| 23 | 30.00 | +0.22 | 67.8 | 54.0 | 13.8 | 60.1 | +4.0 | 53.4 | 78 | S.W. | 0.17 |
| Mean | 29.95 | +0.12 | 62.0 | 48.6 | 14.3 | 55.2 | —0.7 | 50.4 | 84 | Vari able | 0.67 |

Sept. 17.—Rain from early morning till about 11 A.M., very dull day and night.
" 18.—Fine dull day, sun shining at times in the afternoon.
" 19.—Slight rain from 8 A.M. till about 11 A.M. Dull day. Fine clear night.
" 20.—Fine day and night.
" 21.—Slight rain about 3 A.M., very fine bright day from 11.30 A.M. Fine night.
" 22.—Dense fog in early morning, very fine day and night.
" 23.—Fine till about 2 P.M., drizzling rain from 3 P.M., and all the evening.

LONDON: *Atmospheric Pressure.* — During the week ending September 19, the reading of the barometer at the level of the sea increased from 29.86 inches at the beginning of the week to 30.07 inches by 5 P.M. on the 13th, decreased to 29.95 inches by 1 P.M. on the 14th, increased to 29.97 inches by 5 P.M. on the same day; decreased to 29.83 inches by 5 P.M. on the 15th, increased to 30.11 inches by 1 P.M. on the 16th, decreased to 29.96 inches by 9 A.M. on the 17th, increased to 30.09 inches by 5 P.M. on the 18th, and was 29.91 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30 inches, being 0.22 inch higher than last week, and 0.04 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 74°.5, on the 15th, on the 19th the highest temperature was 57°.2. The mean of the seven high day temperatures was 65°.2.

The lowest temperature was 46°, on the 19th; on the 15th the lowest temperature was 57°.5. The mean of the seven low night temperatures was 51°.4.

The greatest range of temperature in one day was 20°, on the 14th; the smallest, on the 17th, was 8°.2. The mean of the seven daily ranges was 13°.8.

The mean temperatures were—on September 13th, 58°.2; on the 14th, 58°.7; on the 15th, 64°.3; on the 16th, 58°.4; on the 17th, 54°; on the 18th, 53°.7; and on the 19th, 52°.5; of these the first four were above the averages by 0°.8, 1°.5, 7°.2, and 1°.5, respectively, and the last three were below by 2°.6, 2°.7, and 3°.6 respectively.

The mean temperature of the week was 57°.1, being 1°.2 higher than last week, and 0°.3 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 124°.5, on the 15th. The mean of the seven readings was 93°.3.

The lowest reading of a minimum thermometer placed on grass was 40°, on the 19th. The mean of the seven readings was 45°.5.

*Rain.*—Rain fell on five days, to the amount of 0.88 inch.

ENGLAND: *Temperature.*—During the week ending September 19 the highest temperatures were 78° at Cambridge, 74°.5 at Blackheath, 73°.9 at Nottingham; the highest temperatures were, at Plymouth 66°, at Truro, Newcastle, and Preston 68°. The general mean was 70°.2.

The lowest temperatures were 40° at Cambridge, 42°.5 at Wolverhampton, 42°.7 at Bolton; the lowest at Liverpool was 48°.9, at Brighton 48°.8, at Nottingham 47°.6. The general mean was 45°.3.

The greatest ranges were 38° at Cambride, 28°.5 at Blackheath, 27°.7 at Wolverhampton; the least ranges were 19°.4 at Liverpool, 19°.5 at Plymouth, 19°.7 at Brighton. The general mean was 24°.9.

The mean of the seven high day temperatures was highest at Cambridge, 67°.6, at Bristol 66°.2, and at Nottingham 65°.9; and was lowest at Bolton, 62°.3, at Sunderland 62°.4, at Liverpool 62°.7. The general mean was 64°.3.

The mean of the seven low night temperatures was highest at Brighton, 52°, at Bristol 51°.5 at Blackheath 51°.4; and was lowest at Bolton, 45°.4, at Wolverhampton 45°.7, at Sheffield 47°.3 The general mean was 49°.3.

The mean daily range was greatest at Cambridge, 18°.8, at Wolverhampton 17°.9, at Bolton 16°.9; and was least at Brighton, 11°.7, at Liverpool 11°.8, at Newcastle 12°.5. The general mean was 15°.

The mean temperature was highest at Bristol, 57°.5, at Blackheath 57°.1, at Cambridge 56°.9; and was lowest at Bolton, 52°.5, at Wolverhampton 53°.3, at Sunderland 54°. The general mean was 55°.5.

*Rain.* — The largest falls were 1.49 inch at Preston, 1.41 inch at Bolton, 1.10 inch at Brighton; the smallest falls were 0.29 inch at Bristol, 0.32 inch at Newcastle, 0.35 inch at Truro. The general mean fall was 0.68 inch. Rain fell on every day in the week at Cambridge.

SCOTLAND: *Temperature.*—During the week ending September 19, the highest temperature was 68°.6, at Leith; at Perth the highest temperature was 61°.9. The general mean was 63°.9.

The lowest temperature in the week was 34°.5, at Glasgow; at Aberdeen the lowest temperature was 42°. The general mean was 40°.

The mean temperature was highest at Edinburgh and Leith, 54°.4; and lowest at Glasgow and Greenock, 52°.9. The general mean was 53°.6.

*Rain.*—The largest fall was 1.96 inch, at Greenock; the smallest fall was 0.44 inch, at Aberdeen. The general mean fall was 1.11 inch.

JAMES GLAISHER, F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Sept. 21, 1885, issued by the Meteorological Office, 116, Victoria-street, London, S.W.:—The *weather* has been in a very changeable condition generally, some days being very dull and rainy and others fine and genial. In the south and south-east thunder and lightning were experienced.

The *temperature* has been 1° or 2° below the mean in

Ireland, the greater part of Scotland, in "England, N.W.," and the "Channel Islands," but about equal to, or 1° above, its normal value in most of the English districts and in the east of Scotland. The maxima were recorded in most places on the 15th, when the thermometer rose to between 59° and 68° in the northern and western parts of the kingdom and to 76°, 77°, or 78° over central, southern, and south-eastern England. The minima, which were generally registered either on the 17th or 18th, varied from 32° in "England, S.W." (at Llandovery), and 34° in "Ireland, N.," to 41° in the east, north-east, and south of England, and to 51° in the "Channel Islands."

The *rainfall* has varied considerably in different localities. Over Scotland, the south of England, and in the north of Ireland it has been more than the mean, in "England, E.," about equal to it, while elsewhere a deficit is shown. Over central and north-eastern England the fall has been very slight.

*Bright sunshine* shows an increase in most of the "Wheat-producing" districts, and also over the west of England, but a decrease elsewhere. The percentages of the possible amount of duration ranged from 20 in "Ireland, N.," to 48 in "England, N.E."

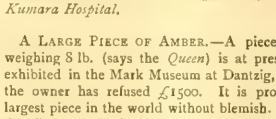
*Depressions observed.*—Very changeable, unsettled conditions have prevailed during this period. Several depressions have moved in a north-easterly direction outside our westerly and northerly coasts, the most important one being observed during the 19th. This depression brought moderate to strong southerly to westerly gales to all our western and northern stations, and fresh south-westerly winds to the south and east. During the 16th, 17th, and 18th, some small shallow disturbances passed eastwards, over the North of France, causing easterly breezes and thunderstorms over our southern and south-eastern counties.

## Variorum.

WHERE STRAWBERRIES COME FROM.—In parts of Kent hundreds of acres are devoted to Strawberries, which are sometimes grown under fruit trees, but for the most part are planted in the open in rows, about 2½ feet apart and 1½ foot from plant to plant. The plough is run between the rows in autumn to keep the plants on ridges, and assist in the drainage of the roots. In spring the ground is levelled, and a straw litter laid between the plants, in order to prevent the fruit from being splashed by the rains. When ripe, that required for dessert purposes is picked with stalks and gathered into small baskets, which are emptied into sieves holding about 12 lb., and for each of these the picker gets 3*d*. The packing is a task requiring considerable neatness and skill, and the practised hands sit in rough sheds built in the fruit gardens all the summer days arranging the ripe Strawberries with their leaves in the punnets; these again are packed in boxes containing sometimes thirty and sometimes sixty baskets, and are sent off in carts, or by train, to the market. The bruised or over-ripe fruit, termed "squashers," are packed in casks, and disposed of at some of the jam factories. An idea of the amount of fruit grown may be gained from the fact that from 6 to 8 tons of Strawberries have been sent in a day from one farm alone, and from 100 to 125 tons forwarded by one grower to market during a single season. The value of the crop varies from £20 to £60 per acre for best fruit, and for "squashers" and jam-fruit from £15 to £20 per ton. After gathering, the runners are cut away, and, with refuse, taken to the centre of the alleys, which are then dug and planted with Lettuces. A plantation lasts good five years, and is not in good bearing order until the second year. The cost of the runners is about 5*s*. per 1000, and about 7000 plants per acre are required. *Cassell's Family Magazine.*

PHORMIUM TENAX AND ITS THERAPEUTIC VALUE. — Among the botanical products of New Zealand there is one item for the *Materia Medica* that will prove a valuable auxiliary to the surgeon as soon as its therapeutical effects have become generally known. From 1869, when the properties of the plant were first made known, till the present, I have used it in hundreds of cases, including lacerations and amputations of every description, and I have no hesitation in saying that there is nothing known in the old country that can equal it in producing healthy granulations. I use a strong decoction—the stronger the better—made from the roots and the butts of the leaves, boiled for twelve hours. At one time I had to make it fresh every second day, as it readily ferments and deteriorates, but since carbolic acid came into vogue I keep it for any length of time by adding about an ounce of equal parts of carbolic acid and glycerine to every quart. I require no other antiseptic precautions, but simply syringe the lesions occasionally with it, and maintain cotton wool or lint, soaked in it, constantly to the parts affected. If there are no foreign matters to be discharged there will be no discharge, in support of which I will instance the case of an Austrian, named Louis Lourich, whose forearm I lately amputated, after it had been shattered through dynamite. The ligatures were thirty-days in coming away, and the amount of pus from the operation up to that time would not altogether amount to a tablespoonful. The same patient had the soft parts of the other forearm torn and blown into such a mass of shreds that the members of the staff thought it was hopelessly beyond repair. I need only say that with the same treatment it became as sound and useful as before, and exhibits only scars showing where new skin had been formed. Some time ago a navvy on the Winton Railway works had a loaded truck go over his foot, doubling it on the sole, bursting the integuments and leaving the os calcis nearly bare and the flexor tendons dipping loosely with bits of skin and fascia under the sole of the foot. The man lived in a tent near the works. I instructed one of his mates how to boil down a billy of Flax every day, and suspend it with a drip-rag over the injury, and the case recovered perfectly, with no appearance of pus, except on one occasion for twenty-four hours, through his mates leaving him for some sports or races with an insufficient supply of decoction, which compelled him to use water instead. In this case no carbolic acid, or anything, was used but the decoction of Flax by itself. I might adduce proofs by scores of its efficacy, but if, owing to these facts being made prominently known through the *Australasian Medical Gazette*, medical men can be induced to test the remedy for themselves, it will require no assertions from me to cause the Phormium tenax to take the premier place as a granulating agent. *Francis A. Monckton, M.R.C.S.E., Surgeon-Superintendent, Kumara Hospital.*

A LARGE PIECE OF AMBER.—A piece of amber weighing 8 lb. (says the *Queen*) is at present being exhibited in the Mark Museum at Dantzig, for which the owner has refused £1500. It is probably the largest piece in the world without blemish. Frederick the Great, more than a century ago, paid the same sum for a piece weighing 13 lb., which is preserved in the Mineralogical Museum at Berlin, but it has gaps and cavities. Two beautiful pieces of work in amber are also to be seen in Berlin. One is a flute, which also was an acquisition of Frederick the Great; the other is a complete tobacco-pipe, belonging to Frederick William III., the father of the present Emperor. It bears an admirably carved likeness of that monarch.




DENDROBIUM CHRYSANTHUM: *C. Herrin.* It is not rare for this to flower on growth of the current year.

ERRATA.—In the report of Royal Caledonian Horticultural Society's meeting, at p. 377, col. *a*, line 1, for "Mr. J. O. Mackenzie, of Portmore," read "Mr. J. Ord Mackenzie, of Dolphington."—In article on Proliferation in Ferns, p. 371, col. *a*, line 8, instead of "fronds are perennial," read "plants are evergreen."

GRAPES SHANKING AND SEEDLESS: *T. T.* Your Vines are in a bad state at the roots. Read our cultural directions on the Vine in this issue. You will then know how to proceed. Mrs. Pince is so unripe that it could scarcely be ripened before winter. You should have started this variety in April. The small seedless berries result from non-fertilisation of the flowers, and might have been avoided by impregnation with its own or other pollen applied with a camel-hair brush, or even by occasional syringing in the morning.

SEEDLING APPLES, &C.: *A. Y. S.* Not equal to many others in cultivation. Pear, Bezi Quessoi, or Nutmeg.

SIZE OF HALF-SIEVE: *W. Y. L.* It is 3½ imperial gallons. The weight will vary with different things.

MUSHROOM DEFORMED: *W. Glen.* It is simply a case in which one Mushroom has grown on the cap of another, the additional growth having the pileus turned upwards, and is destitute of a stalk. These malformations are not rare.

NAMES OF FRUITS: *J. H.* 1, Muirfowl Egg; 2, Passe Colmar; 3, perhaps St. Catherine (it was badly decayed); 4, Sandall's; 5, Goliath (incorrectly called Nectarine Plum); 6, Lawson's Golden; 7, Kirke's.—*Wynstones.* 1, Hawthornden; 2, 3, Cellini; 4, Gloria Mundi; 5, Franklin's Codlin Pippin; 6, Dumelow's Seedling.—*J. R., Bury.* 1, Mank's Codlin; 2, Warner's King; 3, Cox's Pomona; 4, Beauty of Kent; 5, Lane's Prince Albert; 6, Cox's Orange Pippin; 7, Reinette d'Hollande; 8, Winter Pearmain. There is an Apple named Radford Beauty, a medium-sized round fruit of a bronzy-green colour. —*A. Holloway.* 1, Beurré Diel; 2, Glou Morçeau; 3, Beurré de Capiaumont; 4, not recognised; 5, Fondante d'Automne; 6, Seckle.—*W. W.* Williams' Bon Chrétien.

NAMES OF PLANTS: *Lattenbury.* Yellow Star Thistle (Calcitrapa solstitialis). — *D. M. Strachan.* Viccia cracca.—*H. C. & Sons.* 1, Watsonia humilis; 2, W. iridifolia; 3, Tritonia aurea. — *W. P. Hiern.* Oncidium varicosum. — *Ivy Shelverton.* 1, Perilla nankinensis; 2, Gazania uniflora; 3, Aster bessarabicum; 4, White Phlox var.—*C. J. R. B.* Cymbidium giganteum.

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## CATALOGUES RECEIVED.

THOS. WARE, Tottenham — Daffodils, Lilies, and a General Bulb List; Hardy Perennials, Iris, Pæonies, &c.

W. M. PILLINGER & CO., Chepstow — Dutch Flower Roots; also Forest Trees, Fruit Trees, Roses, &c.

JAMES MEREDITH, Warrington—Dutch Bulbs, &c.

J. M. THORBURN & CO., New York — Price List of American Seeds for European Wholesale Markets only.

L. JACOB-MAKOY & CO., Liège, Belgium—Plants.

ROVELLI FRERES, Pallanza, Lago Maggiore, Italy — Price Current of Seeds.

M. JULES DE COCK, Ghent — Trade Catalogue of Plants.

BEN REID & CO., Aberdeen—Dutch Flower Roots.

E. J. JARMAN, Chard—Flower Bulbs, Roots, Roser, Trees, &c.

ISAAC DAVIES & SON, Ormskirk, Lancashire—Rhododendrons, Conifers, Hardy Trees, Climbers, &c.

COMMUNICATIONS RECEIVED:—C. M. O. (next week).—T. S.—T. J. & Sons.—C. W.—C. B.—B. S. Williams.—W. G. Smith.—Sir C. Strickland.—G. N.—J. D.—A. Laing.—N. B.—H. W. W.—G. S. B.—F. W. E.—Malcolm Dunn (many thanks for correction).—W. T.—H. Berwick (next week).—Dr. Paterson.

# Markets.

*COVENT GARDEN, September 24.*

PRICES continue about the same, with business quiet. Nuts and good fruit selling freely at previous quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | 3 0 | Melons, each | 0 6 | 1 0 |
| Damsons, ½-sieve | 3 0 | 3 6 | Peaches, per doz. | 2 0 | 4 0 |
| Figs, per dozen | 0 6 | 0 9 | Pine-apples, Eng. lb. | 2 0 | 4 0 |
| Grapes, per lb. | 0 6 | 3 0 | — St. Michael, each | 2 6 | 5 0 |
| Kent Cobs, 100 lb. | 25 0 | 27 6 | Pears, per dozen | 0 9 | 1 3 |
| Kent Filberts, 100 lb. | 25 0 | 28 0 | — per ½-sieve | 1 0 | 3 0 |
| Lemons, per case | 15 0 | 30 0 | Plums, ½ sieve | 1 6 | 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 5 0 | .. | Lettuces, Cab., doz. | 2 0 | .. |
| Aubergines, each | 0 4 | .. | Lettuces, English Cos, doz. | 3 0 | .. |
| Beans, Eng., per lb. | 0 4 | .. | Mint, green, bunch | 0 4 | .. |
| Beet, per dozen | 1 0 | .. | Mushrooms, basket | 1 0 | 1 6 |
| Brussel Sprouts, lb. | 0 4 | .. | Onions, per bushel | 4 0 | .. |
| Cabbages, per dozen | 1 0 | 2 0 | — Spring, per bun. | 0 6 | .. |
| Carrots, per bunch | 0 0 | .. | Parsley, per bunch | 0 4 | .. |
| Cauliflowers, English, per dozen | 2 0 | 4 0 | Peas, per quart | 1 0 | 2 0 |
| Celery, per bundle | 1 6 | 2 0 | Radishes, per dozen | 1 0 | 2 0 |
| Cucumbers, each | 0 4 | 0 8 | Small salading, per punnet | 0 2 | 0 4 |
| Endive, per dozen | 2 0 | .. | Spinach, per bushel | 4 0 | .. |
| Garlic, per lb. | 0 6 | .. | Tomatos, per lb. | 0 6 | 0 9 |
| Herbs, per bunch | 0 2 | 0 4 | Turnips, new, bunch | 0 6 | .. |
| Horse Radish, bun. | 3 0 | 4 0 | Veget. Marrs., each | 0 3 | .. |

POTATOS.—Magnum Bonums, 70*s*. to 100*s*.; Regents, 70*s*. to 110*s*.; Myatt's, £7 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 18 0 | Ferns, in var., dozen | 4 0 | 18 0 |
| Arbor-vitæ (golden), per dozen | 6 0 | 18 0 | Foliage Plants, various, each | 2 0 | 10 0 |
| — (common), dozen | 6 0 | 12 0 | Fuchsias, per dozen | 2 0 | 6 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen | 15 0 | 24 0 |
| Bouvardia, dozen | 12 0 | 18 0 | — longifolium, doz. | 9 0 | 18 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Marguerite Daisy, per dozen | 8 0 | 12 0 |
| Dracæna terminalis, per dozen | 30 0 | 60 0 | Myrtles, per dozen | 6 0 | 18 0 |
| — viridis, per doz. | 12 0 | 24 0 | Palms in variety, each | 2 6 | 21 |
| Euonymus, in var., per dozen | 6 0 | 18 0 | Pelargoniums, scarlet, per dozen | 2 6 | 9 0 |
| Evergreens, in var., per dozen | 6 0 | 24 0 | | | |
| Ficus elastica, each | 1 6 | 7 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | Lilium longiflorum, | |
| Asters, 12 bunches | 2 0– 6 0 | 12 blooms .. | 1 0– 3 0 |
| Bouvardias, per bun. | 0 6– 1 0 | Marguerites, 12 bun. | 2 0– 4 0 |
| Carnations, per 12 | | Mignonette, 12 bun. | 1 6– 3 0 |
| bunches .. .. | 2 0– 4 0 | Pelargoniums, per 12 | |
| 12 blooms .. | 1 0– 2 0 | trusses .. .. | 0 6– 1 0 |
| Fuchsias, per dozen | 3 0– 6 0 | — scarlet, 12 trusses | 0 4– 0 6 |
| Gardenias, 12 blooms | 2 0– 4 0 | Rhodanthe, 12 bun. | 6 0– 9 0 |
| Lapageria, white, 12 | | Roses (indoor), doz. | 1 0– 3 0 |
| blooms .. .. | 2 0– 3 0 | Stephanotis, 12 spr. | 3 0– 6 0 |
| — red, 12 blooms .. | 1 0– 2 0 | Tropæolum, 12 bun. | 1 0– 1 6 |
| Lavender, 12 bunch. | 4 0– 6 0 | Tuberoses, 12 blms. | 0 6– 0 9 |

## SEEDS.

LONDON, *Sept.* 23.—There were but few transactions on the seed market, the attendance being small to-day. The demand for Trifolium is now nearly over. Full prices are made for Rye, the trade continuing good. There is more inquiry for winter Tares, at late rates. Moderate prices still rule for Mustard. Rape seed remains exceptionally cheap; this year's are the lowest ever known values. Blue Peas, on account of their scarcity, are exceedingly firm. The new Haricot Beans are cheap and good. The samples of new American Clover seed coming to hand show most unsatisfactory quality. Linseed is dearer. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday English Wheat, except just the best samples, was cheaper to sell, and foreign was much in the same way, except perhaps Indian and Australian, which showed fairly firm rates. Flour ruled dull, and the nominal top price of town was reduced 3*s.* per sack, making 34*s.* the quotation. Grinding Barley was firm, and the turn dearer. The new English varies in quality, and the proportion of prime is small. Beans and Peas were unchanged. Maize, from scanty supply, upheld its value. Oats were dull, and rather in favour of buyers.—Wednesday's Wheat market opened with rather a firmer tone, but the want of demand prevented improvement, and the retail transactions that occurred left quotations nominally unchanged. Flour was quiet and unaltered. Maize was scarce and firm. Barley was steady, and Beans, Peas, and Oats, were quiet and unchanged.—Average prices of corn for the week ending Sept. 19:—Wheat, 30*s.* 10*d.*; Barley, 31*s.* 1*d.*; Oats, 19*s.* 2*d.* For the corresponding period last year:—Wheat, 33*s.* 10*d.*; Barley, 32*s.* 3*d.*; Oats, 19*s.* 8*d.*

## CATTLE.

At Copenhagen Fields on Monday the advance obtained in the beast market on that day se'nnight was not sustained, the sales being at fully £1 per head lower, and in some cases a larger decline had to be conceded, the dull state of the dead meat trade and depressed rates at Smithfield militating against demand. Sheep were rather more numerous than on the previous Monday, but maintained that day's rates, although the sale was slow. The calf trade was very dull, and no pigs were on offer. Quotations:—Beasts, 3*s.* 10*d.* to 4*s.* 6*d.*, and 4*s.* 8*d.* to 5*s.* 2*d.*; calves, 2*s.* 10*d.* to 4*s.* 6*d.*; sheep, 4*s.* to 4*s.* 6*d.*, and 4*s.* 10*d.* to 5*s.* 6*d.*—On Thursday trade was quiet in tone. Both beasts and sheep sold slowly at about Monday's prices. Calves were steady, and best qualities made a shade more money. Pigs were dull.

## HAY.

Tuesday's Whitechapel Market report states that trade was very dull, with considerable supplies Quotations:—Clover, prime, 80*s.* to 110*s.*; prime second cut, 85*s.* to 105*s.*; inferior, 60*s.* to 75*s.*; new Clover, 80*s.* to 94*s.*; hay, prime, 65*s.* to 95*s.*; inferior, 36*s.* to 60*s.*; and straw, 28*s.* to 39*s.* per load.—On Thursday there was a short supply on sale. The trade was very dull at late rates.—Cumberland Market quotations:—Clover, best, 90*s.* to 100*s.*; inferior, 60*s.* to 90*s.*; hay, best, 80*s.* to 90*s.*; inferior, 50*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

## POTATOS.

The Borough and Spitalfields Markets reports state that the markets are largely supplied with middling and inferior qualities, but fine are not so plentiful. The latter realise fully steady prices, but the lower grades are a very difficult sale. Quotations:—Regents, 60*s.* to 80*s.*; Magnum Bonums, 50*s.* to 80*s.*; Early Roses, 70*s.* to 90*s.*; Hebrons, 90*s.* to 110*s.* per ton.—The imports into London last week consisted of 8537 bags from Hamburg, 400 Antwerp, 89 Rotterdam, 49 sacks St. Brieux, and 31 sacks from Boulogne.

## COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 14*s.* 9*d.*; Wallis End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 17*s.*; Hetton Lyons, 15*s.*; Lambton, 17*s.*; Wear, 15*s.*; Tees, 17*s.*; Dowlais Merthyr, 16*s.* 3*d.*

**Government Stock.**—Consols closed on Monday at 99⅞ to 100 for both delivery and the account. The final figures of Tuesday and Wednesday were 99⅞ to 99⅞ for both transactions. Thursday's closing quotations were 99⅛ to 99⅛ for both delivery and account.


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R. J. JOHNSON, Esq., 3, *Walton Street, Oxford.*
*September* 21, 1885.

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THE HOME FOR FLOWERS
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IRISH ANEMONE.—All colours, the finest in cultivation; should be grown by all lovers of flowers. Send to the Growers for BULBS, Single, 5*s.* per 100, 1*s.* per dozen; Double, 10*s.* per 100, 2*s.* per dozen. Seed, Single, 1*s.* per packet; Double, 2*s.* per packet; Mixed, 1*s.* 6*d.* per packet. RODGER MCCLELLAND AND CO., Newry.

**To the Trade.**

H. COLLYER, 147, Camden Road, Tunbridge Wells, late Propagator for T. Cripps & Son), can now offer CLEMATIS JACKMANNI and LANUGINOSA CANDIDA, strong plants, 8*s.* per dozen, 50*s.* per 100; AMPELOPSIS VEITCHII (true), 6*s.* per dozen.

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4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks 21*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack
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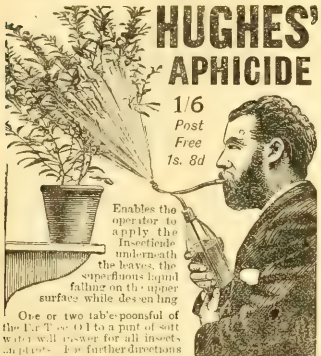
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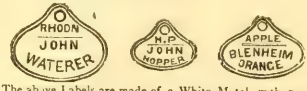
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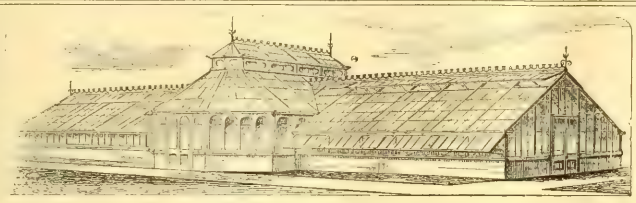
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**To Noblemen, Gentlemen, or Head Gardeners.**

GARDENER (HEAD WORKING), or FOREMAN.—Age 24, single; eleven years' practical experience. Two years' reference.—G. HOWES, Hornchurch, Romford.

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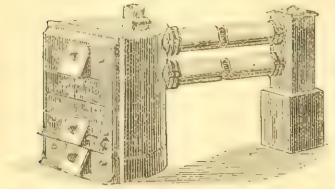
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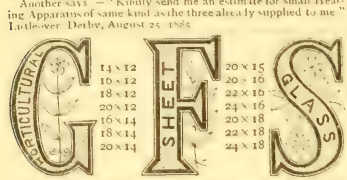
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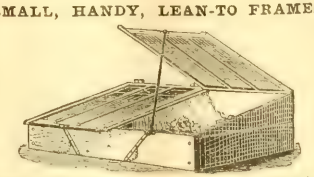
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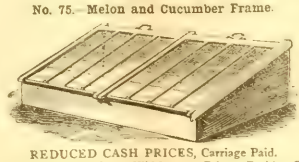
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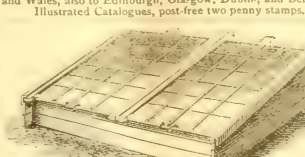
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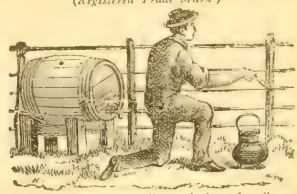
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

# GARDENERS' CHRONICLE.

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*NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should be made payable at DRURY LANE.*

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CARTER, LONDON, has been the Registered Telegram and Cable Address of James Carter & Co. for many years, and all communications addressed to Carter, London, by this means are delivered to James Carter & Co., ensuring best attention.
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(*Old Established Nursery and Seed Business*),
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PAUL'S NURSERIES, Waltham Cross, Herts (entrance from Waltham Cross Station).—Purchasers of ROSES, FRUIT TREES, ORNAMENTAL TREES, EVERGREENS, BULBS, &c., are invited, before purchasing, to inspect the stock at the Waltham Cross Nurseries, half an hour from London, Great Eastern Railway. Priced CATALOGUES free. WM. PAUL and SON, Waltham Cross.

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OUR GENERAL BULB LIST, No. 77, is now in the Press. Send for a copy.
NEW PLANT and BULB COMPANY, Colchester.

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H. COLLYER, 147, Camden Road, Tunbridge Wells (late Propagator for T. Cripps & Son), can now offer CLEMATIS JACKMANNI and LANUGINOSA CANDIDA, strong plants, 8s. per dozen, 50s. per 100; AMPELOPSIS VEITCHII (true), 6s. per dozen.

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RODGER MCCLELLAND and CO., Newry.

FOR SALE, 500 EUCHARIS AMAZONICA, good flowering bulbs, 75s. per 100. GERANIUM CUTTINGS, "CANDIDISSIMA ALBA PLENA," the finest Double White Geranium for cutting purposes, 8s. per 100; all other leading varieties, 7s. per 100. VIOLAS, all leading varieties and colours, 16s. per 100.
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GREAT SPECIALTY—FRUIT TREES, carefully trained, very strong, in full bearing.
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HEPATICA TRILOBA ALBA, 40s. per 1000.
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FRUITING TREES in POTS. GRAPE VINES, FIGS, PEACHES, &c.
Well-trained trees for walls, with fibrous roots, from Osborn's stock.
The choicest ROSES. SEAKALE for Forcing.
Inspection invited.
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FOR SPECIALLY CHEAP GLASS see Last or Next Week's *Gardeners' Chronicle*.
HY. WAINWRIGHT, 8 and 10, Alfred St., Boar Lane, Leeds.

## SALES BY AUCTION.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### Wednesday Next—(Sale No. 6084.)

Cholmeley Park, Highgate, N.

STOVE and GREENHOUSE PLANTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, as above, on WEDNESDAY NEXT, October 7, at half-past 12 o'Clock precisely, by order of G. Heriot, Esq., a collection of STOVE and GREENHOUSE PLANTS, consisting of Palms, Crotons, Ferns, Nepenthes, fine plant of Lapageria rosea and alba, Gloxinias, &c., also CHRYSANTHEMUMS, GARDEN POTS, &c.

On view day prior and morning of Sale, and Catalogues had on the Premises, and of Mr J. C. STEVENS, 38, King Street, Covent Garden, W.C.

### Thursday Next.—(Sale No. 6086.)

VALUABLE IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, October 8, at half-past 12 o'Clock precisely, valuable imported and ESTABLISHED ORCHIDS, consisting of:—

| | |
|---|---|
| Calanthe vestita oculata gigantea | Galeandra nivalis |
| ,, veratrifolia | Oncidium crocodiliceps, new |
| Cattleya Dowiana | ,, lanceanum |
| ,, Eldorado | ,, Marshallianum |
| ,, Gaskeliana | Odontoglossum Alexandræ |
| ,, Holfordii | Lælia purpurata |
| ,, Leopoldii | Paphinia Sanderiana |
| ,, superba | Trichocentrum albo-purpureum |
| Cypripedium Lowii | Saccolabium Henderson |
| ,, niveum vars. | Vanda Hookeri |
| ,, Stonei | Dendrobium superbiens, |
| Epidendrum Endresi | And many Mexican and other |
| ,, Schomburgkii | Orchids |

Also in Flower and Bud

| | |
|---|---|
| Angræcum Leoni | Odontoglossum Insleayi vars, very fine |
| ,, Scottianum | Odontoglossum grande |
| Cypripedium Spicerianum, fine vars. | Oncidium tigrinum |

Trichocentrum fuscatum,

and a fine plant of Lælia elegans, grand variety.

On view morning of Sale, and Catalogues had.

### Thursday Next—(Sale No. 6086)

22,500 WHITE ROMAN HYACINTHS.
6,000 PAPER-WHITE NARCISSUS.
6,000 SINGLE WHITE ITALIAN HYACINTHS.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 8, in cases of 500 and 1000 Bulbs, as received.

On view morning of Sale, and Catalogues had.

### Orchids in Flower.

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 14, and he will be glad if Gentlemen desirous of entering Plants for this Sale will please send particulars of same as soon as possible.

### Valuable Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 15, at half-past 12 o'Clock precisely, the COLLECTION of ESTABLISHED ORCHIDS formed by the late Frederick Collins Wilson, Esq., of Waltham Cross, including two good plants of the true autumn-flowering Cattleya labiata, C. Mendelii, fine variety; Angræcum sesquipedale, C. Spicerianum, three growths; C. caudatum, and C. roseum; Vanda tricolor, V. suavis, Oncidiums of sorts, Odontoglossums, Oncidiums, Phalænopsis, &c.

On view morning of Sale, and Catalogues had.

### Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, about 800 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, in excellent quality and lotted to suit the Trade and Private Buyers.

On view mornings of Sale, and Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B. The Sale on MONDAY NEXT will include 3500 double African TUBEROSES, and on THURSDAY five very large plants of EUCHARIS AMAZONICA, also an assortment of TERRA COTTA FLOWER-POTS and VASES.

### Lower Norwood, S.E.

TENTH ANNUAL SALE of CHOICE ESTABLISHED ORCHIDS, STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. James to SELL by AUCTION, on the Premises, The Castle Nursery, Lower Norwood, S.E., near the Station, on WEDNESDAY, October 7, at 12 o'Clock precisely, a selection of about 150 lots of beautifully-grown ESTABLISHED ORCHIDS, clean healthy plants, including a very fine lot of Odontoglossums, Masdevallias, Cattleyas, Phalænopsis, Oncidiums, Cypripediums, Dendrobiums, and others; and amongst which will be found several rare and valuable species; an assortment of STOVE and GREENHOUSE PLANTS, specimen CAMELLIAS, AZALEAS and FERNS, LAPAGERIAS, STEPHANOTIS, CROTONS, DRACÆNAS, and a variety of ORNAMENTAL TREES and SHRUBS.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

### Friday Next.

IMPORTANT SALE of IMPORTED and ESTABLISHED ORCHIDS, including a fine lot of Saccolabiums from Messrs. Heath & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 9, at half-past 12 o'Clock precisely, the following ORCHIDS:—

A fine lot of ESTABLISHED ORCHIDS from the New Plant and Bulb Company, comprising some fine varieties of Cattleyas collected by Mr. E. Wallace in his late trip.

A quantity of ESTABLISHED but UNFLOWERED PLANTS of Odontoglossum Alexandræ of the best type, white Lælia anceps, Oncidiums, Odontoglossums, and other Established and Semi-established ORCHIDS, from Messrs. Shuttleworth, Carder & Co.

About 100 lots of SACCOLABIUMS from Messrs. Heath & Son, of Cheltenham, being from the same importation out of which the splendid new white variety has so recently flowered.

Also about 150 lots of CHOICE ESTABLISHED ORCHIDS, and a quantity of IMPORTED AERIDES CRISPUM and DENDROBIUM species.

On view morning of Sale, and Catalogues had.

### Deptford, S.E.—Evelyn Estate.

The land being sold for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Land, on MONDAY, October 12, at 2 o'Clock, in suitable lots, 2½ Acres of CHAMPAGNE RHUBARB ROOTS, and ½ an Acre of KALE.

Now on view. Catalogues of Mr. H. HICKS at the Estate Office, and of the Auctioneers, 67 and 68, Cheapside, E.C.

### Established Orchids.

IMPORTANT UNRESERVED SALE of a fine COLLECTION of ESTABLISHED ORCHIDS, the whole of which are in the best possible health.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from H. W. Lowe, Esq., who is leaving Sydenham Hill, to SELL by AUCTION, without reserve, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, October 13, the first portion of his valuable Collection, consisting almost entirely of specially selected varieties.

Full particulars will appear next week.

### Upper Clapton, E.
EXPIRATION OF LEASE.

The whole of the NURSERY STOCK, Green and Variegated Hollies, 1000 Oval-leaved Privet, 2000 Euonymus, 300 Aucubas, Cumbers, an assortment of clean-grown Fruit Trees, a few large Azaleas and Camellias, two GARDEN ROLLERS, MOWING MACHINE, LIGHTS, &c

MESSRS. PROTHEROE AND MORRIS will SELL the above, by AUCTION, on the Premises, The Nursery, Northwold Road, E., near the Clapton Station, Great Eastern Railway, on TUESDAY, October 13, at 12 o'Clock, by order of Messrs. Offord & Son.

Now on view. Catalogues on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

### Sunbury.

Four minutes' walk from the station, L. & S. W. Railway.

Two days' UNRESERVED SALE of young and thriving NURSERY STOCK, the whole of which has been carefully prepared for transplanting, by order of Mr. John Dawson, who is relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hawthorne Nursery, Feltham Hill Road, Sunbury, on WEDNESDAY and THURSDAY, October 14 and 15, at 12 o'Clock precisely each day, without reserve, the whole of the choice and thriving NURSERY STOCK, in fine condition for removal, including 50,000 Border Shrubs, an unusually fine assortment, consisting of 2000 variegated and green Hollies, 7000 bushy Aucubas, 2000 Laurustinus, 10,000 common and Portugal Laurels, 500 Sweet Bays, 10,000 green and variegated Box, 2000 Thuiopsis borealis, choice Conifers, comprising 500 Thuiopsis dolobrata, 2000 Chinese Arbor-vitæ, Retinosporas, Thuias, and Yews; a capital assortment of Fruit and Ornamental Trees, hardy Climbers, and thousands of Young Stock suitable to the Trade; also one GREENHOUSE, two PITS, Hot-water PIPING, and BOILER.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call particular attention to this sale, the stock being remarkably well grown, and in splendid condition.

### Camellias, Azaleas, Roses, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY, October 14, a consignment of fine Budded CAMELLIAS, AZALEAS, and other PLANTS, from Belgium; 500 Standard ROSES, from an English Nursery, DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

N.B. These Sales will be continued every week, the dates of which will be announced in Advertisements.

### Canterbury.—Expiration of Lease.

GREAT UNRESERVED CLEARANCE SALE of 16 Acres of remarkably well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs Kinmont & Kidd to SELL by AUCTION, on the Premises, The Vauxhall Nursery, Canterbury, about eight minutes' walk from either of the Canterbury Stations, on MONDAY, October 26, and three following days, at 12 o'Clock punctually each day, without reserve, in consequence of the expiration of lease, about 16 Acres of unusually well-grown NURSERY STOCK, in capital condition for removal, and offering exceptional advantages for procuring Trees and Shrubs for immediate effective planting. The stock will include thousands of Conifers and Evergreens, ranging in height from 1 to 8 feet; 500 Laurels, 2 to 4 feet; 2000 Spruce Firs, 2 to 5 feet; 4000 Rhododendrons, 2 to 4 feet; 13,000 Ornamental and Forest Trees, comprising 5000 Poplars, 2 to 10 feet; 2000 Larch, 4 to 6 feet; 2000 Limes, 8 to 12 feet; 700 fine Purple Beech, 5 to 12 feet; 1000 Filberts, 4 to 10 feet; 17,000 clean-grown Fruit Trees, consisting of 10,000 Standard, Pyramid, and Trained Apples, 5000 ditto Pears, 2000 ditto Plums and Damsons, 1500 ditto Cherries, Peaches, and Nectarines, 10,000 Standard and Dwarf Roses, of all the best sorts; and large quantities of other stock.

May be viewed. Catalogues may be had on the Premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### Waltham Cross.

IMPORTANT SALE OF WELL-GROWN NURSERY STOCK.

To Nurserymen, Builders, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Rumsey to SELL by AUCTION, on the Premises, Joyning's Nursery, ten minutes' walk from Waltham Cross Station, G. E. Ry., on TUESDAY, October 20, at 12 o'Clock precisely, a large quantity of beautifully grown NURSERY STOCK, which is in excellent condition for removal, including 3000 Aucubas, 1 to 3 feet; 500 Portugal Laurels, fine specimen Conifers, 1000 Flowering Shrubs, 500 standard Flowering Trees, 1000 London Planes, 8 to 15 feet; 1500 Ornamental Trees of sorts, 6000 standard and dwarf Roses of all the leading varieties, 1000 Roses in pots, for forcing; 1000 Bouvardias, in 48 pots, of the best kinds; Ferns, and other stock.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Lee, S.E.

IMPORTANT to the TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. North & Son to SELL, by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., about a mile from three Railway Stations, on WEDNESDAY, October 21, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, comprising 2000 small Aucubas for pots; 4000 fine bushy Laurels of sorts, from 1 to 5 feet; 1000 oval-leaved Privet, 4 to 5 feet; 2000 Irish Yews; 1000 Ivies of sorts; 4000 green variegated Euonymus for potting; 3000 Currants and Gooseberries; 1000 Standard and Dwarf Roses; 500 large Aucubas, 3 to 4 feet high and through, splendid specimens; 1000 Hollies and Yews, 2 to 4 feet; specimen Conifers in variety; 2000 Erica hyemalis, gracilis, caffra, and others, in 48 and 32-pots; and other MISCELLANEOUS STOCK.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Forthcoming Sales of Nursery Stock.

In addition to those advertised.

IMPORTANT to NOBLEMEN, GENTLEMEN, NURSERYMEN, LANDSCAPE GARDENERS, BUILDERS, and others proposing to plant during the season.

MESSRS. PROTHEROE AND MORRIS beg to give notice of the following Sales:—

OCTOBER 27 and 28, at the NURSERY, PUTNEY, by order of Messrs. Mahood & Son, the lease having expired.

OCTOBER 29, at POUNCE'S NURSERY, HENDON, the land being required for building.

OCTOBER 20, at the NURSERY, WEST WICKHAM, by order of Mr. Cook.

NOVEMBER 3, at the HALE FARM NURSERY, TOTTENHAM, by order of Mr. Ware.

NOVEMBER 2, at the NURSERY, DORKING, by order of Messrs. Ivery & Son.

NOVEMBER 4, at OSBORN'S NURSERY, HAMPTON by order of Mr. W. Taylor.

NOVEMBER 13 and 14, at the AMERICAN NURSERIES, GODALMING, by order of Mr. M. Young.

DATE NOT FIXED, at the MILFORD NURSERIES, LEYTONSTONE, by order of Mr. A. Protheroe.

Messrs. P. & M. will be pleased to forward Catalogues on application at 67 and 68, Cheapside, London, E.D.

### Waltham Cross, Herts.

(On the Great Eastern Railway. 11 miles from London.)

CATALOGUE of portion of Mr. Tudgey's valuable and well-known COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, including well-grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnocomas, Dracophyllums, Stephanotis, 500 Adiantum cuneatum giganteum, 200 Cocos Weddelliana in 4-inch pots, Allamandas, Clerodendrons, Franciscea, Rondeletias, specimen Palms, Anthuriums, Crotons, 300 Araucaria Cooperii in 4-inch pots. Also a quantity of Hardwood Heaths and Palms, in 4-inch and 6-inch pots, and Exhibition Plant VAN, in good repair.

MR. TYDEMAN will SELL the above by AUCTION, at the Exotic Nurseries, Waltham Cross, on TUESDAY, October 6, at 12 o'Clock.

May be viewed the day previous and morning of Sale, and Catalogues obtained of Mr. E. CROSSLEY, Exotic Nurseries, Waltham Cross; or of Mr. J. TYDEMAN, Auctioneer, Valuer and Estate Agent, Waltham Cross, Herts.

### Edinburgh.

Drummond Brothers having resolved to give up the Florist and Nursery branch of their business,

MR. ALEXANDER DOWELL will SELL by AUCTION, at Larkfield Nursery, Ferry Road, Edinburgh, on WEDNESDAY and THURSDAY, October 7 and 8, at 12 o'Clock each day, a very fine lot of HOLLIES, YEWS, AUCUBAS, RHODODENDRONS, WEEPING TREES, &c., mostly suitable for immediate effect.

Now on view. Catalogues to be had from DRUMMOND BROTHERS, Agricultural Seedsmen, 82, George Street, Edinburgh.

### Tansley Nurseries, near Matlock, Derbyshire.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, and OTHERS.

MR. GEORGE MARSDEN respectfully announces that, in consequence of the termination of the tenancy of a portion of the Nursery Land, he is again instructed by Messrs. Samuel & James Smith, to SELL by AUCTION, at the Nurseries, as above, on WEDNESDAY and THURSDAY, October 7 and 8, commencing punctually at 11 o'clock each day, a portion of their choice and highly valuable NURSERY STOCK, consisting of about 8000 transplanted Rhododendrons, named varieties, of the choicest specimens, growth, and quality; 800,000 ponticum Rhododendrons and common hybrids; Cupressus, Ivies, and Laurels; immense quantities of Retinospora plumosa, obtusa compacta and aurea, in sizes suitable to all purposes; Cedrus Deodara and atlantica, Azaleas, Whins, Privet, &c.; 7000 Andromeda floribunda, Golden Yews, Gold, Silver, and Green Hollies; about 40 000 New Golden Elders, Berberis and Pinus austriaca, in good condition; Oak, Scotch Beech, Italian and Ontario Poplars, and other Forest Trees in great variety and quantity.

Catalogues can be had on application to Messrs. SAMUEL AND JAMES SMITH, Tansley Nurseries, Matlock; or the Auctioneer, Wirksworth.

TO BE SOLD, with Immediate Possession, a MARKET NURSERY, 6 miles from Covent Garden, comprising an Acre of Land, Eight roomed Dwelling-house, Coach-house and Stables, Twelve Greenhouses, well Heated and in good condition.

For particulars apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

**California.**

FOR SALE, several GRAIN and FRUIT FARMS, CATTLE and SHEEP RANCHES, in the most desirable parts of California.

Full particulars furnished upon application, personally or by letter, to GEO. J. THEOBALD AND CO., 419, California Street, San Francisco, California.

**To Market Gardeners.**

FOR SALE, near Manchester, a SMALL ESTABLISHMENT, with Glass Houses, Early Forcing House, &c., complete. Ready sale for all produce. Or would take a Partner with £50.

J. K., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE DISPOSED OF, a FLORIST'S BUSINESS, of a high class, in a fashionable thoroughfare, near Hyde Park. The present owner retiring.

Full particulars of M. T., care of G. N. Reid, Son & Co., Chartered Accountants, 49, Queen Victoria Street, E.C.

TO GARDENERS and NURSERYMEN.—An excellent opportunity for a young beginner, with moderate capital. Six GREENHOUSES and moderate quantity of LAND. Immediate possession. Tools and Stock valuation, about £60. Close to rail. 11 miles from London.

Apply, Mr. TYDEMAN, Estate Agent, Waltham Cross.

TO NURSERYMEN and OTHERS.—The Proprietor of a good Nursery, 32 Acres in extent, situated on the high road, one mile from a county town, is desirous, from age (74), to give up business. No reasonable offer will be refused, either in the form of an Annuity or Purchase.

Further particulars on application to H. B. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.**

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

WILLIAM CLAPHAM,
SHAW HEATH, STOCKPORT,
*LANDSCAPE GARDENER and ROCK ARTIST*,

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Alban's, where work can be seen. Tufa formation, Sandstone, Natural Rockwork to suit any locality.

THE CANCER HOSPITAL, Brompton, London, S.W.

The COMMITTEE are desirous of RECEIVING APPLICATIONS for LAYING-OUT and PLANTING the GROUNDS in the rear of the Hospital. Tenders to be addressed to the Chairman of the Weekly Board on or before the 13th day of October. Applications to View the Grounds to be made to the SECRETARY at the Hospital, between the hours of 10 A.M. and 1 o'Clock, daily.

The Board do not bind themselves to accept, the lowest or any Tender.

NOTICE IS HEREBY GIVEN, that the PARTNERSHIP heretofore subsisting between us, the undersigned, GEORGE THOMAS SCOTT and DAVID GILBERT, as Florists and Nurserymen, in Eastbourne, in the County of Sussex, under the style or firm of G. T. SCOTT AND CO., was on this 29th day of September, 1885, DISSOLVED by mutual consent. All DEBTS OWING by or to the late firm will be DISCHARGED or RECEIVED by the said GEORGE THOMAS SCOTT, who for the future will carry on the business on his own account.

Dated this 29th day of September, 1885.

GEORGE THOMAS SCOTT.
DAVID GILBERT.

NOTICE is Hereby Given that the PARTNERSHIP heretofore subsisting between us, the undersigned ROBERT NEAL and GEORGE NEAL, under the style or firm of R. & G. Neal, in the trades or businesses of Nurserymen, Seedsmen, and Contractors, carried on at Wandsworth Common; Garrett Lane, Wandsworth; Falcon Wharf, Battersea; Saw Mills and Brickfield, Streatham; and at Warple Way, Wandsworth, has been DISSOLVED as from the 29th day of September inst., by mutual consent. The Nursery and Seed Business will in future be carried on by the said ROBERT NEAL, and the Contractor's Business by the said GEORGE NEAL.

Dated this 30th day of September, 1885.

ROBERT NEAL.
GEORGE NEAL.

Signed by the above-named ROBERT NEAL and GEORGE NEAL, in the presence of SPENCER CASTLE, 14, Southampton Street, Bloomsbury, Solicitor.

FOR SALE, Three Dozen STOVE PLANTS, Surplus Stock, including large plants, such as DRACÆNAS, MARANTA, and LOMARIA GIBBA FERNS. Apply to J. OSBORNE, Gardener, Wood Lodge, Shooter's Hill, S.E.

OUR CATALOGUE of TREES and SHRUBS, containing the largest selection in the world, will be sent free on application. We are purchasers of any missing kind. CATALOGUES invited.
ZOESCHEN Nursery (Baumschule), near Merseburg, Prussia.

BOX EDGING.—10,000 Nursery Yards, very fine, 20s. per 100, £9 10s. per 1000. Cash.

J. B. YOUNG, Bridge of Allan.

**Flowers for Winter and Spring.**

VIOLETS—sweet Violets.—Marie Louise, Victoria Regina, Belle de Chatenay, 6s per dozen, 40s. per 100; Patrie, Comte Brazza, White Neapolitan, 12s. per dozen; twelve distinct varieties, package paid, 7s. 6d. per dozen; small plants, free by post, 3s 6d. per dozen. The above are the best and most useful Violets in cultivation, have been grown in large clumps, and are now full of flower; if planted at once will ensure flowers all winter and spring.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

# FRUIT. FRUIT. FRUIT.

*SEE NEW CATALOGUE.*

APPLES, PEARS, PLUMS, CHERRIES. —All the finest varieties.—Pyramids, 9s. and 12s. per dozen; Standards, 12s. per dozen; Dwarf-trained, 15s. and 18s. per dozen.

CURRANTS.—Black, Red, White, 12s. per 100, 2s. and 2s. 6d. per dozen.

RASPBERRIES, in variety, 12s. per 100; Northumberland Fillbasket, 6s. per 100.

GOOSEBERRIES, 15s. and 20s. per 100, 2s. 6d. and 3s. per dozen.

STRAWBERRIES.—All the most reliable croppers. Strong runners, 2s. 6d. per 100; in 2½-inch pots, 10s. per 100; in 5-inch pots, for forcing 25s. per 100; Laxton's New King of Earlies and The Captain, 2s. per dozen.

# ROSES. ROSES.

*See our New Catalogue.*

The finest H.P. varieties, 6s per dozen, 40s. per 100.
Tea-scented and Noisettes, 15s. per dozen; 100s. per 100.
Beautiful Mosses, 6s. per dozen.
Climbing varieties, for Rockeries, Arbours, &c., 6s. p doz.

The above are all our own growing, and will grow and flower much better than Roses grown in a good climate and rich soil.

# FOREST TREES,

*ORNAMENTAL and DECIDUOUS SHRUBS,*

**RHODODENDRONS and AMERICAN PLANTS.**

Fine quality, low prices. See New Catalogue.

**OUTDOOR FLOWERS in SPRING.**

DAISIES, Red, White, Rose, &c.; POLYANTHUS, Single PRIMROSES, in variety of colours; WALLFLOWERS, CANTERBURY BELLS, 9d. per dozen, 4s. and 5s. per 100 PANSIES and VIOLAS (colours separate), ARABIS, ALYSSUM, SILENE COMPACTA, AUBRIETIAS, MYOSOTIS, 1s 6d. per dozen, 8s. per 100; or, 500 assorted Spring-flowering Plants for 17s 6d., 1,000 for 31s. 6d.

TULIPS, various colours, 5s. per 100; CROCUS, 1s. 6d. and 2s. per 100; SNOWDROPS, 2s. 6d. per 100; BORDER HYACINTHS, 16s. per 100; NARCISSUS, 5s. per 100; 500 assorted Spring Bulbs for 12s., 1000 for 21s.

HEPATICAS, Blue and Red; Double PRIMROSES, Sulphur, 3s. 6d. per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

**BEAUTIFUL FLOWERS for GARDENS.**

POTENTILLAS, PYRETHRUMS, DELPHINUMS.—Lovely hardy flowers for cutting or garden bloom, named, 5s. per dozen.

SPLENDID PHLOXES, PENTSTEMONS, PINKS, PANSIES, in the finest varieties, 3s. 6d. per dozen.

HARDY HERBACEOUS PLANTS.—The most showy sorts, 3s. per dozen, 21s. per 100.

CARNATIONS and PICOTEES.—Good exhibition sorts, 6s. per dozen plants; fine Clove and Border Self varieties, 4s. per dozen—all from layers.

LILIES.—Finest mixed, 10s. per 100; 1s. and 2s. per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

**A GAY CONSERVATORY.**

CINERARIAS and HERBACEOUS CALCEORARIAS, 1s. 6d. per dozen, from stores, our own fine strains.

BOUVARDIAS. TREE CARNATIONS, DEUTZIA GRACILIS.—In pots for early blooming, 6s., 9s., and 12s. per dozen.

SPIRÆA JAPONICA, DIELYTRA SPECTABILIS.—Fine clumps, 5s. per dozen.

AZALEAS.—Ghent, mollis, pontica, or indica, all with buds, for forcing, 18s., 24s., and 30s. per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

SEE our NEW CATALOGUE for this Autumn for Moderate Prices of all BULBS, PLANTS, or TREES you want for In or Out-door Gardening; also for CUT FLOWERS, WREATHS, CROSSES, BOUQUETS, &c.

**WM. CLIBRAN & SON,**
**OLDFIELD NURSERY, ALTRINCHAM;**
**12, MARKET STREET, MANCHESTER.**

Pelargonium
VOLONTÉ NATIONALE ALBA.—All who were unable to procure this splendid new Geranium in May should do so at once. Nice healthy Plants in pots now ready, 5s. each, free by post. Awarded First-class Certificates, Royal Horticultural Society, Royal Botanic Society, Crystal Palace, Manchester, and the principal shows of the season. Sample flowers forwarded on application.

FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

DUTCH BULBS.
DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN, Overveen, near Haarlem, Holland.

Intending purchasers of DUTCH BULBS are invited to read ANT. ROOZEN & SON'S CATALOGUE for 1885, and see the large saving effected by DEALING DIRECT WITH THE GROWER. The Catalogue, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants, and also particulars as to FREE DELIVERY, will be sent, POST-FREE, on application to them, or to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and on his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same patronage and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his own free on demand.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and all other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited.

Trade CATALOGUES forwarded on application.
Burnt Ash Lane Nurseries, Lee, S.E.

ROSES—ROSES—ROSES.—Splendid Plants of the following and other fine varieties, in 7-inch pots, 24s., 30s., 36s., and 42s. per dozen:—Maréchal Niel, Gloire de Dijon, Cheshunt Hybrid, Provoniens, Duke of Connaught, Homer, Isabella Sprunt, Madame Lambard, Madame Willermoz, Niphetos, Étoile de Lyon, Perle des Jardins, Safrano, &c. Our Roses are well known to be the finest and healthiest in the country; complete LISTS of varieties in stock will be sent on application.

The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool.

**New Catalogues.**

CHARLES TURNER'S New and Descriptive CATALOGUES for the season are now ready, and may be had post-free on application, viz:—

A CATALOGUE of DUTCH and other BULBS.
A CATALOGUE of ROSES, FRUIT TREES, VINES, and all kinds of HARDY TREES and SHRUBS.
A CATALOGUE of CARNATIONS, PICOTEES, and PINKS.

The Royal Nurseries, Slough.

**Autumn Planting.**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.

The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6s. per dozen plants, 12s. per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3s. 6d. per dozen plants, 7s. 6d. per dozen clumps.

Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 2½d., free.

Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

**"Irradiating the Present, Restoring the Past."**

A COMPLETE and ORIGINAL "LITTLE BOOK" of DAFFODILS, in its revised form, for 1885. *Price 1s., post-free.* There are numerous original Illustrations, and the Daffodils are the best ripened Bulbs to be got, Ireland being so *genial* to their cultivation. Over 130 so is to select from. Early planting and early ripening of Bulbs should give grand results. Advantage offered by no other. Reference in the Trade.—WM. BAYLOR HARTLAND'S Old Established Seed Warehouse, 24, Patrick Street, Cork.

**To the Trade only.**

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. The Wholesale Catalogue (No. 379A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1885-86, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out of this specialty. The prices of Hyacinths in general are considerably lower than before. Prices of Tulips and other Bulbs, too, are in many instances inferior to former quotations. German and French editions as well as a separate English edition for America, are published.

**To Nurserymen, Seedsmen, and Florists.**
DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

GOOD BULBS for SUPPLYING CUT FLOWERS:—
EUCHARIS SANDERII.
EUCHARIS AMAZONICA.
EUCHARIS CANDIDA.
EUCHARIS MASTERSII.

The last-named, a beautiful new kind, offered for the first time. Price per dozen or hundred on application to

Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, S.W.

## WHOLESALE BULB CATALOGUE

Contains List of all varieties of

**English, Dutch, and French-grown Bulbs,**

With Special Low Prices of the following :—

150,000 Yellow CROCUS.

IRIS KÆMPFERI—in about twenty different shades of colour. This grand Japanese Iris is hardly yet known in this country, but should be grown by every lover of flowers. It is by far the largest flower of this family, with most striking colours. We offer well established English-grown Roots.

IRIS GERMANICA, in great variety. This collection contains twenty-four different shades of colour. Also many other varieties of Iris.

20,000 NARCISSUS POETICUS ORNATUS (true). — True Early-flowering Pheasant-eyed, blooming three weeks earlier than poeticus.

15,000 NARCISSUS, Orange Phœnix. — The grand Double White Daffodil.

5,000 NARCISSUS, Sulphur Crown. — The delicate Double Pale Sulphur Daffodil, the finest and most elegant of all. And fifty other choice varieties of

**NARCISS and DAFFODILS.**

30,000 GLADIOLUS COLVILLI, The Bride, pure white variety, perfectly hardy. Should be planted in autumn. Also good for forcing.

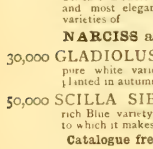
50,000 SCILLA SIBIRICA.—This charming rich Blue variety is now as cheap as the Snowdrop, to which it makes a good companion and contrast.

**Catalogue free on application to**

## WATKINS & SIMPSON,

SEED AND BULB MERCHANTS,

13, EXETER STREET, STRAND, W.C.



## B. S. WILLIAMS'

**Improved Mushroom Spawn**

per bushel of 4 cakes 5s.

Per cake, 6d. ; per cake, free by Parcel Post, 1s.

For Outdoor and Indoor Culture.

**Victoria and Paradise Nurseries,**

Upper Holloway, London, N.

## CHOICE IMPORTED DUTCH BULBS.

**JARMAN'S No. 6 COLLECTION**

contains 1000 selected and assorted Bulbs, for Indoor and Out-of-door combined. Price 21s. cash. Package and Carriage Free. Others at 6s. 6d. to £4 4s.

**ROSES**, 9s. per dozen. A big stock and fine Plants.

*Send for large Descriptive LIST of Bulbs, Roses, Plants, Seeds, &c., to*

## E. J. JARMAN,

The People's Seedsman,

CHARD SOMERSETSHIRE.

## BULB GUIDES.

These most interesting and instructive Catalogues are Now Ready, and may be had gratuitously upon application.

**Part 1** consists of HYACINTHS, TULIPS, CROCUS, and a most complete LIST of MISCELLANEOUS BULBS.

**Part 2** consists exclusively of LILIES and NARCISSUS, and includes every variety worthy of cultivation, all of which are fully described.

## THOMAS S. WARE,

Hale Farm Nurseries,

TOTTENHAM, LONDON.

## Hooper's

Splendid Seeds and Bulbs at low prices

The Covent Garden Seed Warehouse

Catalogues free to Buyers

**Vines—Vines—Vines.**

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. each.

The Vineyard and Nurseries, Garston, near Liverpool.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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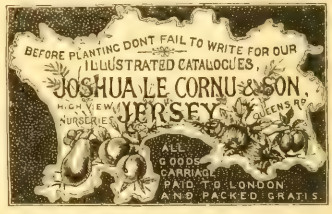
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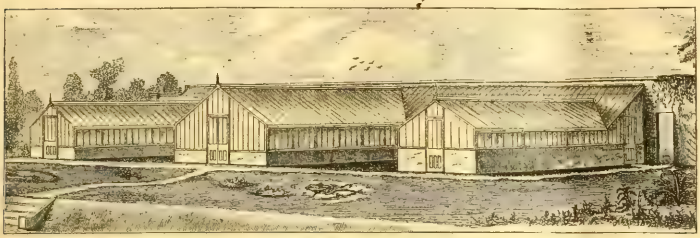
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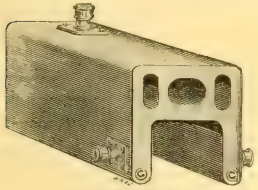


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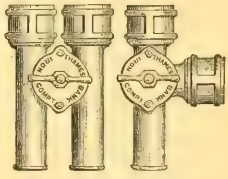
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_____ 1885.

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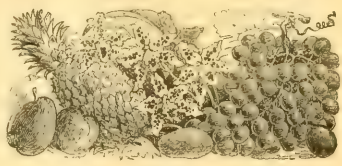
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THE

# Gardeners' Chronicle.

*SATURDAY, OCTOBER 3, 1885.*

## BATTLE ABBEY.

THOSE who have read Mr. Freeman's account of the Battle of Senlac will feel a peculiar interest in Battle Abbey. It stands on high ground 7 miles from Hastings, which the Normans had occupied after landing at Pevensey. Harold's own vast estates included the greater part of Sussex, and, knowing the country well, he had marched straight from London and pitched his camp on the heights of Senlac. This neighbourhood is the most picturesque part of Sussex. The town and abbey of Battle cover the summit of one of the points of the Forest Ridge. At the time of the Conquest the great primeval forest, the Andredes Weald, whose remnants form the modern Weald, covered the whole country, which consists at present of pleasing little hills and dales. From the windows and terrace of the Duke of Cleveland's house, now called Battle Abbey, the extensive landscape includes Beachy Head and the distant South Downs, with glimpses of the wide green lawn called Pevensey Marsh, and Bex Hill, a rising watering-place on the coast. The sea is seen through the leafy openings between the hills, and immediately opposite the Abbey is the highest of the neighbouring hills, known as Telham Hill, and called by the Saxons Hetheland, or Heathfield, a name now given to another hill and parish of the district, having a similar soft and sandy soil, and producing in great profusion the same native plant, Heath or Heather.

Harold had been advised to baffle the enemy by retreating on London and harrying the country. He replied, "Never will I burn an English village or an English house; never will I harm the lands or goods of any Englishman." The Normans had landed at Pevensey September 28, the Battle of Hastings, as it is now called, was fought October 11, 1066. We are not concerned here with this great event in English history, except as it introduces the history of Battle Abbey. In accordance with his promise the night before the battle the Conqueror founded a monastery in honour of St. Martin on the spot where Harold and his brothers and chief followers fell in the last act of the tragedy as night was closing. The mitred abbot of this great monastery sat in Parliament, and by virtue of his immunities and privileges he was a thousand times more the master of the surrounding country than the present owner of Battle Abbey.

The entrance from the street of Battle to the grounds in which the house and ruins are situated is by a Gothic and embattled gateway, which admits the visitor into a wide space between the gate and the house. Beyond it are the ruins, including those of the great hall or refectory, and a beautiful Gothic hall of the time of King Stephen or of Henry II., where the monks feasted their tenants and the country round. Beneath it are crypts divided by graceful columns and springing arches, forming a somewhat gloomy vault used by the monks as a promenade.

The ruins of this great establishment have now become the ornamental rockwork of a shrubbery (see fig. 93, p. 433). The site of the great church forms a sober looking garden under the south-east windows of the house, and is entered from its side-door. The borders are edged with Box, and the garden itself is fenced with Yew trees. Brilliant gardening, for which the site and soils here are admirably adapted, can hardly be expected from an octogenarian proprietor. There are 8 or 10 acres of shrubbery around the house, and eight men are employed in this department and in the productive kitchen garden, which consists of about 2½ acres, within walls. Owing to the warm soil, shelter, and southern position, this is a land of outdoor Figs and Peaches. You will hardly see within a day's march such wall fruit as Mr. Burgoine can exhibit. His sorts of Figs are the Brunswick, which in Devonshire is grown as a standard, as it is in the Sussex village of Tarring, and the Brown Turkey. Mr. Burgoine very modestly attributes his success with Peaches partly to his numerous hives of bees, which he thinks assist the setting of the blossom.

Those who are interested in the growth of tender plants outdoors instead of under glass, where they are more often found, will not I hope complain of the following list of some of the plants covering the terrace wall, however prosaic it may be. It is a noble wall, 300 or 400 feet long, divided into compartments by enormous buttresses facing south, and more than 20 feet high. The Normans delivered their attack up this steep front, which the wall has rendered perpendicular, the house and terrace being above. A lower terrace, bounded by a fence of Laurustinus, passes along the foot of the wall, and at a lower level runs the valley, with its streamlet which is interposed between the heights of Senlac and Hetheland. Our palatial wall is built of the warm-looking yellow-grey sandstone of the neighbourhood, and the tender plants it shelters flourish in a dry and light loamy soil, which is both absorbent and retentive of warmth.

First on the list must be named Stauntonia latifolia from China, an evergreen, 20 feet high, which finds here, I believe, the only site in England where it bears its fruit. This specimen was illustrated in the *Gardeners' Chronicle*, Feb. 19, 1876, p. 244; another one grows in the abbey. The Choisya ternata, 6 feet high, bears its white blossoms here, as well as Escallonia montevidensis, which is too tender for most sites, and far more so than E. macrantha, a common shrub of this neighhourhood. Its large trusses of white flowers are very handsome. The Nerium Oleander flourishes, but does not, I think, flower here, as it would do probably with a sufficient supply of water. Another noble and unusual wall shrub, growing 20 feet high, is the showy Ceanothus of the variety called Gloire de Versailles, with long spikes of pale blue flowers. Trachelospermum jasminoides, known as a stove climber, tops the wall here with blossoms like those of the Jasmine, and has safely resisted 20° of frost. Mandevilla suaveolens generally bears the character of a greenhouse climber, which may be cultivated in summer out-of-doors, but does not then produce flowers. Here, however, it is hardy, climbing high, and bearing sweet and snowy-white flowers.

The sweet scented Verbena may not be uncommon outdoors; but it is a favourite in many cottage gardens in this county, as in Surrey also, but it rarely obtains a height of many feet, and does not blossom freely, if at all; whereas, here it covers the wall and its sheltering buttresses to a height of 20 feet, and I hardly recognised the familiar plant at first in consequence of its curious disguise of a white sheet of blossoms. Tropæolum pentaphyllum and T. speciosum both grow here, the former with yellowish-red blossoms, being the greater novelty of the two and demonstrating a light warm soil; the latter preferring a deep and moist, but still a light soil with a warm wall, and bearing the apt name of Flame Nasturtium, from the brilliant colour of its flowers. This creeper is, I suppose, when growing in perfection as I have seen it covering the pillars and roof of an ornate summer-house in Scotland, or sometimes of a cottage porch, one of the most exquisite, notwithstanding its small blossoms. The Habrothamnus fasciculatus with its gay branches and its sheet of coral-like berries in spring, is described in Paxton's *Botanical Dictianary* as an elegant greenhouse plant bearing panicles of flowers in profusion. So it seems from what I saw, and so says Mr. Burgoine, but he adds that it ought to be more widely grown. But we do not all own a great sunk wall, shutting out north and east, with the flower-favouring, shrub-producing soil of the Hastings Sands.

As for other items in this catalogue, Fuchsia, Fig, and Myrtle, Magnolias, Bottle-brush tree, and Pomegranate are all here, ornamental though not rare. Quitting this interesting spot we looked into a conservatory and saw Brugmansia Knightii, with its gigantic white and tubular blossoms, and Luculia gratissima, which produces its cymes of fragrant, pink-coloured flowers at Christmas—trusses resembling those of the herbaceous Phlox. This is a tender plant, not very easy of cultivation, unless when the art is understood. Pot culture should be eschewed as the border of the greenhouse proves a more suitable position.

Finally, we ascended to the terrace, passed to a retired part of the shrubbery, where the foundations of "Harold's Chapel" mark the spot, near some Cedars of Lebanon, in the midst of a most peaceful garden scene, where the Saxon standard was planted, and where the last of the Saxon kings fell in its defence. We cannot quit the spot, unparalleled as it is among all the historic sites in England, for the importance of the event that occurred thereon, without recalling, in a few words, Mr. Freeman's account of the battle.

It began at nine o'clock in the morning and raged nearly six hours before the assailants gained any advantage. A series of single combats had been fought, the rival leaders had more than maintained their reputation for skill as generals, and for personal valour as fighting men. At length the ardour of the defenders and their confidence of having gained the day led to their discomfiture. A feigned retreat was executed by William's orders; they were fatally beguiled, and following the enemy, lost their defensive array. The slaughter at the close was immense. A deep ditch, called appropriately "Malfoyse," was filled up level with the bodies of the soldiers. Harold's brothers Gurth and Leofric were both killed. The king himself was killed by an arrow later in the day, as twilight approached, and the sun had set, before the battle closed, the last blows being struck in the gloom of the failing light.

The body of the Saxon king was wrapped in a purple robe, and buried, by the Conqueror's permission, by one of his knights, Wm. Malet, who had been one of Harold's companions during his visit to Normandy. This noble knight bore the body to the Norman camp at Hastings, and buried it beneath a cairn of stones on the rocks of the shore, probably at Fairlight. In December following it was removed to Waltham Abbey, which Harold himself had founded. His tomb was destroyed in 1540.

Eastward of the church at Battle are some fields, still called the Lake, and sometimes Sanguelac, the "Lake of Blood," and a few years ago the chalybeate springs, which form the sources of the little river Asten, were believed to owe their redness to the blood of the slaughtered English. *H. E.*

# New Garden Plants.

PESCATOREA RUCKERIANA, *n. sp.**

MUCH in the way of Pescatorea Dayana, but entirely distinct in the acute undulate sepals and petals, which appear to be fond of twisting, which produces an entirely novel appearance. They are white, with green apex, and a large light purple area near the apex. The lip has some yellow at the base of the side laciniæ. The large callus is white, the anterior part purple. It appears triangular, being revolute on each side, and rolled underneath at the top. This is very peculiar. The column is marked by a purple and yellow hue at the base. This fine plant has been grown by Mr. Francis Kramer in the Flottbecker Park, the grand place of Mr. Rucker-Jenison, who combines two names, both highly regarded in Orchidic circles. It is dedicated with great pleasure to this new lover and possessor of Orchids, with the wish that this first novelty may be followed by others. I learn that the plant was imported by Messrs. Linden, of Ghent. *H. G. Rchb. f.*

CYPRIPEDIUM RADISSUM, *n. hyb. artif., Veitch.* (LAWRENCEANUM × SPICERIANUM.)

A cross between the natural species and the Sedenian-raised Orchid, kindly sent me by Mr. Harry Veitch. It is stated to have quite the habit of Cypripedium Spicerianum. The flower, however, though adorned with purple-mauve, has lost the chief feature of the Cypripedium Fairieanum and Spicerianum—the curved undulate petals. The leaf at hand has neither the basilar purple blotches so conspicuous in C. Spicerianum, nor its undulations. It is light green, with scattered, transverse, dark green Hebrew-like markings. The brown peduncle bears a very short, keeled, greenish bract, and a dark brown and greenish ovary. The dorsal sepal is remarkable—*la pièce de resistance* of the whole, though neither so striking as in C. Spicerianum, nor as in C. Lawrenceanum.

It is rather broad and acuminate, white with mauve-purple lines over the chief nerves (a dozen): it has a dark purple, almost concealed midrib. All these nerves are green at the base, and have a green tint between them. Dorsal sepal nearly as long as the lip, with light brown lines. Petals nearly divaricate, though descending a little; a little undulate at the margin, and provided there with some ciliæ; green, with sepia-brown midline, a wash of sepia-brown around the anterior borders, and numerous sepia-brown spots on the upper margin. The form of the lip is that of Cypripedium Lawrenceanum, green on the back, brown with green border in front. Staminode nearly as in Cypripedium Lawrenceanum, though only with three teeth in front, but with a light mauve disc and a white border. The orange eye of Cypripedium Spicerianum has vanished.

The most remarkable thing, the nature of the petals, has already been alluded to. The radiating lines of the vexillar dorsal sepal have been kept as they are in Cypripedium Lawrenceanum, but coloured with the purple-mauve of Cypripedium Spicerianum. The lip is like that of C. Lawrenceanum with the colours of that of C. Spicerianum; and so the staminode bears a compromise between the shape of the one and the colour of the other. All these phenomena are highly interesting. *H. G. Rchb. f.*

DENDROBIUM LOWII (*Lindl.*) PLEIOTRICHUM, *n. var.*

Mr. Edward Low kindly sends me a flower of a new variety of this rather well-known plant. There are no red lines on the lip, and its basilar laciniæ bear numerous short hairs. *H. G. Rchb. f.*

* *Pescatorea Ruckeriana*, n. sp.—Aff. Pescatoreæ Dayanæ, Rchb. f. Sepalis tepalisque cuneato-oblongis acutis undulatis, hinc tortis; labelli laciniis lateralibus angulatis, lacinia mediana triangula antice lævi, lateribus revolutis, apice acuto involuto callo majusculo crenato, dentibus obtusis quinis medianis productis *H. G. Rchb. f.*

## COMMON GARDEN INSECTS.

Insect-life abounds wherever there is plant-growth. Few studies repay the gardener the time spent in his pursuit better than that of the insect inhabitants of his garden; nothing is more soothing to the business man than to escape the smoke and turmoil of the city and spend an afternoon or an evening amongst the plants and their unbidden guests that every garden yields. But minds differ, and some are so constituted that such pursuits as gardening and entomology are unsuited to their nature. Let us hope, however, that such of our readers as may be of this class will still have sufficient interest in the wonders of outdoor insect-life as to follow us in our little entomological rambles.

It is a hot afternoon, and we saunter into our garden; the air is astir, the sound of ten thousand insect wings blend together into one continuous murmur; we take a quiet seat near the flowering Apple tree. In such a position, at the edge of a wood, let our readers imagine themselves for the moment to be



Fig. 90.—common garden insects.

situated, and let us observe a few of the most conspicuous insects that pass before our eyes. A humble bee (Bombus lucorum) is the first to attract our attention; it is about to pay a visit to the Apple blossom, and is worthy a brief description here. This species is common, and makes itself conspicuous in nearly every garden, especially in the neighbourhood of trees; it is not so sharp a creature as butterflies or wasps, and if engaged in extracting honey, or gathering pollen, or in nest-building, it may readily be approached closely and examined. It is one of the sociable bees, living in a society composed of three castes or sexes—namely, males, females, and workers. The females, of which one is drawn in the woodcut (fig. 90), are of large size; the males are somewhat smaller, and the workers half the size of the females. The female bee is black, with a band of white across the abdomen, and the end of the body white, and of yellowish colour underneath. During the winter she exists in a torpid condition concealed in crevices, and presenting the appearance when discovered of being dead. In early spring she awakens, and takes to wing, and seeks out a convenient situation for her nest; a soft but dry mossy place is preferred, especially if there be already a hole in the ground or other suitable situation, to start the nest, and serve as a basis for its construction. Should the little architect not be successful in finding this, she excavates by the use of her feet and mouth an entirely new hole underground, in size varying according to the extent of the colony to be founded. The roof and sides of this subterranean chamber she makes smooth, and licks over with her long tongue, thereby covering them with her glutinous saliva. They then receive a coating of wax, and a series of waxen cells are constructed of irregular shape and dimensions, differing in this respect from the hive-bee's cells, which are of geometrical construction. The number of cells built in the nest varies, amounting sometimes to 200 or more, but in general not exceeding half that number, and frequently being only twenty or thirty. It seems, however, that at first only a few cells are constructed, and one or two eggs placed in each. The little white larvæ that proceed from these are fed by the mother bee with pollen and honey mixed, which she collects from far and near, and they remain in their cells during the pupal state. They then transform into workers in May and June, and commence at once to relieve the mother in her arduous duties. They build more waxen cells, until the full number is completed. The mother-bee supplies one egg for each cell as soon as it is formed. And so proceeds the construction of the nest, until in August or September the nest is full of bees—workers, males and females. Some of the latter sex lie dormant in a cell or crevice during the ensuing winter, when they form new colonies in the same manner as above described, and so commences again the cycle of bee-life. An interesting incident in the economy of these nests is the utilisation of the old empty cocoon or pupa cases as pots for storing honey and pollen, into which, as each bee returns from a foraging excursion, it empties its supply.

On the left of the humble bee, in the illustration, is seen a large insect, which will readily be recognised as being one of the

### Dragon-flies,

a numerous tribe of insects, most of which are possessed of handsome colouring and form. The species represented in our drawing is Libellula depressa, not one of the prettiest, but certainly one of the most voracious—devouring an astonishing number of flies of moderate size. Some brightly-coloured species when seen winging their rapid flight in the full blaze of summer's sunshine, look gorgeous. We well remember years ago watching for hours together amongst dense luxuriant foliage on the banks of the Seine on one of the hottest of days of the season, the lovely brilliant blue dragon-flies, chiefly of the genus Agrion, in thousands, displaying their gaudy colours in their rapid flight above the water, when all Nature, save them and their prey, seemed lazy and overcome by the heat. The larvæ are aquatic. We have kept some of these insects in an aquarium for a long time, and were enabled to watch their transformation closely. They are not fastidious in their food, and almost any live insect of a small size that comes within reach is attacked and devoured by the larvæ. The manner in which the fly immerges from the pupa case is very curious. The pupa, when the proper time has arrived for it to undergo the last process of its transformation, seeks out a convenient water-plant stem, and slowly crawls up, and when it has become somewhat dry the skin splits and the insect comes out, generally head downwards, the large wings gradually unfold, and after a great deal of preliminary cautious flutterings it takes to wing, and helps to free the air of thousands of smaller insects. In the top left-hand corner of the illustration is figured one of the prettiest of insects,

### The Lacewing Fly (Chrysopa vulgaris),

which belongs to the same family as the dragon-flies, and whose beauty, as is the case also of the latter, lasts only during life, the dead insect possessing but little colour. The ample wings are beautifully transparent, of a brilliant green tint, but exhibiting according as the light falls on the insect nearly every colour of the rainbow, and covered with the most delicate and beautiful tracery of veins, finer than the finest lace ever produced, the antennæ being long and tapering, and in the head are set a pair of the most brilliant golden eyes, whilst the long thin body is light green. Pretty as this insect thus appears to the unaided eye, much greater beauty is brought to view by the use of the microscope, or even a pocket lens: the eyes and the wings are then seen to sparkle in the light, supposing the fly to be alive, and every turn

*

of the magnifying-glass exhibits to the view fresh beauties. Like the beauty of many of our brilliant modern aniline dyes, the gorgeous hues of this insect are fugitive as bright. Only in the living insect are such hues to be seen, as with its life its beauty of colour departs. Moreover, though it delights the sight, this insect offends the sense of smelling—the odour it emits when captured or annoyed, is exceeding disagreeable. The eggs of the lace-wing fly are deposited in a curious manner. Each egg is glued on the top of a pedestal, or foot-stalk, about half an inch high, formed of a thick glutinous secretion emitted by the insect (shown in fig. 90), which hardens almost instantaneosly on coming in contact with the air. The larva of the lace-wing fly feeds chiefly upon aphides, or plant-lice, and has the extraordinary habit of covering itself with the skins of its victims. It is voracious, eats enormously, and grows rapidly, and in from two to four weeks after emerging from the egg, spins an unusually small cocoon, and transforms into the winged state.

SKIP JACK, BEETLES.

A large family of beetles known as skip-jacks, or click beetles, are to be observed on a great variety of plants. If the branches of a tree or bush be shaken over an outspread umbrella or sheet of paper some specimens may generally be secured. As an example we have given a common species in fig. 90 on the stem of the Apple tree. When alarmed and cannot escape they sham death, and if they fall on the back, as they are sure to do, suddenly spring into the air with a clicking noise, by which movement they generally contrive to get out of sight. This little manœuvre is managed by a kind of spring on the underside of the insect, whereby it arches its body, thus resting on the head and tail end only, and then suddenly straightens itself, the spring causing the middle of its hard body to strike the ground with such force as to carry the insect into the air. They have large wings, and are frequently in flight, but do so in such a clumsy manner as to be readily caught by the hand.

The larvæ of some of these beetles, especially that of the common skip-jack, or Elater sanguineus, are the well-known and well-hated wireworms—so named from being long and hard—which commit such extreme havoc with our crops, whilst many garden plants suffer more from these than all other insects together—in fact they may be said to be indiscriminate eaters and still more indiscriminate destroyers, as they generally devour the roots and lower portions only of the plants. There is no remedy for the mischief of these grubs so effectual as the natural one —frequent hoeing of the ground and "high" cultivation, whereby they are exposed to the attacks of birds and moles, which are their greatest enemies. *C. Francis Young.*

## MONTSERRAT.

*(Concluded from p. 391.)*

BELOW the path leading round to the falls may be noticed a high group of flowering shrubs on the confines of the lawn. This is known as the Doctor's border, in memory of Dr. Cargill, a personal friend of Mr. Cook, and a good botanist, who spent much energy and thought on the place. Among the plants in this border are Dacrydium cupressinum, 30 feet high; Colletia horrida, Dryandra argentea, Dammara obtusa, 50 feet high; Ceanothus azureus flore-albo has to be cut back on account of its vigour; the Guava, which bears edible fruit in hot seasons; Aralia pentaphylla, Jacaranda brasiliana, Leptospermum bullatum and scoparium; Lasiandra argentea, Catanospermum australe, Exochorda grandiflora, Laurus californica, 5 feet 9 inches in girth; Bombax pubescens, and Araucaria Rulei. In the surroundings of this mass of foliage and flower, *i.e.*, on the lawn or on the high bank between it and the encircling walk, may be found the following (anything that is not a good specimen or perfectly healthy is omitted, so as to make the list reliable for those who wish to know what exotics can be grown out-of-doors in South Europe):—Habrothamnus cyaneus, Grevillea robusta, 70 feet high; Magnolia Campbelii, Laurus fœtens, Ficus Benjamina, Araucaria Cunninghamii, 70 feet; Strelitzia Augusta, covering a large expanse of ground; Sciadopitys verticillata, Cordyline indivisa, 30 feet high; Diospyros ebenum, Eriobotrya japonica, 33 yards in the circuit of the branches; Eugenia australis, 3 feet 4 inches in girth; Argania sideroxylon, Sida micrantha, Rhopala Pohlii, Ceratonia Siliqua, and last, but not least, a magnificent specimen of Macrozamia Mackenzii, a fine Australian Cycad, described in *Gardener's Chronicle*, May 26, 1877, by itself on the lawn. A Cycad on a velvet lawn—and such a Cycad! Mackenzie, who saw the plant himself, said it was the finest in Europe.

As the visitor descends the steps to the walk which leads to the falls, and then proceeds along the top of the opposing stretch of lawn on the other side of the ravine, he notices everywhere the foliage of high Palms mingling with or waving above the trees and shrubs—unquestionably the finest combination possible in a garden. Beneath the wall on the left are Clianthus puniceus and Fuchsia lilacina, the latter, a very pretty free-flowering species, very little known in England. (As this climate is too hot for the Lilac, this plant forms an excellent substitute.) Further on, on the same side, are Sparmannia africana, Lagerströmia indica, Magnolia grandiflora, quite a tree; Ipomœa Leari, and Bignonias; Rondeletia (Rogiera) rosea, Erythrinas of sorts, Stadmannia amabilis, Musa sapientum, Strelitzia regina, Cannas, 6 feet high; Imantophyllums, Curculigo glabra, Hedychium coronarium, Libonia floribunda, Lasiandra macrantha, 20 feet high; Fuchsia microphylla, prettily trained up a Dracæna; Cantua dependens, quite fruticose; Trachelospermum jasminoides, trained on a wall; likewise Mandevilla suaveolens and Clerodendron Thomsoni, Franciscea (Brunsfelsia) eximia, and Solandra grandiflora, trained over the path and then up a tree on the other side. The most prominent of the Palms just here are Sabal umbraculifera, 6 feet in girth, and altogether a magnificent specimen; Trachycarpus Fortunei, 30 feet high; and Phœnix dactylifera, 40 feet.

On the right-hand side is an Araucaria excelsa, with the following dimensions:—Height, 70 feet; girth at 1 foot up, 8 feet; circumference of branches, 52 yards. Adjoining, and on the lawn, a Latania borbonica, 4 feet 9 inches in girth at 3 feet from the ground, and 19 feet in height; Chorisia speciosa, 30 feet high; Pittosporum Cargilli, Brugmansia (Datura) suaveolens and sanguinea, the latter 3 feet 2 inches in girth; Cycas revoluta, of which the circuit of the branches is over 23 yards; and Hibiscus rosa sinensis are among the other notabilities. A pretty feature is formed by a Rose taking possession of an Araucaria, and forming an arch over the path.

At the bifurcation of this path is a reservoir for purposes of irrigation. Its walls are covered by choice creepers, and in any shadowed crevices are growing exultingly Maidenhair Ferns. Flowering plants, such as Begonias, purple Lantanas, and the Cineraria of the florists are planted in the border adjoining the path. In the angle, where a walk leading from under a Fern-covered tunnel joins, is another tall Date Palm, 6 feet 1 inch in girth as high up the trunk as 10 feet. The ground around is hidden by a garniture of Ferns. Among them are Nephrodium setosum, Asplenium bulbiferum, Lomaria gibba, Adiantum reniforme, Asplenium Veitchianum, Blechnum brasiliense, and Nephrolepis exaltata. The low rockwork bounding the path and all the way to the Valley of the Tree Ferns is Selaginella clad. This spot is called Puck's Corner, because that mischievous fay is held to have fostered a curious vegetal growth. It was thought that a Cork tree would be in its right place among the Ferns. Accordingly it was planted, supported by a stake cut from a Plane tree. The stake rooted, and the two trees have grown up quite apart, as if from one base. The girth of this common trunk is 11 feet 1 inch, a matter of twenty years' growth.

> "Two trees in one—puzzle to gardening men!
> Plane tree and Cork in sworn hostility;
> For with averted looks they climb on high,
> And yet their bases intertwiningly
> Mix in eternal union!"

The walk now is shaded by high trees, through which the sunshine glances fitfully on the delicately chiselled foliage of the Ferns. Ahead the roar of the falls grows louder, and the plash of the stream against the rocks. The undergrowth of Ferns is here quite wonderful in its variety, Davallias, Pterises, Lomarias, and Pellæas, mingling, as if their fronds had been arranged by fairy fingers. Above them tall Cyatheas and Dicksonias, their stems invested to by inquisitive Fernlets, curious to know what the world is like from so high a position. In the background on the left is a group of blossoming Camellias. A bridge, constructed so as to harmonise with the scene, crosses the stream about midway between the falls. Paths, with Ferns above, around, and everywhere, lead up to the chief falls. Everything is so marvellously strange and beautiful as to be beyond the powers of an ordinary scribbler. The Tree Ferns in the glen nearest the rushing stream are in the most perfect health, every frond glowing with silver-beaming spray flung from the water's chafed breast. Round the fount into which the stream first pours itself, Dracænas, Bamboos, and the Papyrus take the place of the Ferns. The stream so impinges that much of the surface of Hippocrene, as this rock-formed tarn is called, is calm, except for the ceaseless circling ripples swimming to the marge—

> "Reflecting tranquilly those lines
> Of tree and shrub, and rocky steep,
> Towering around with careless grace."

Enjoying the luxury of a spray bath on the craggy steep are "wilding Ferns and bright wild Ivy,' and Nile's white Lily wadeth far into the water. Looking down the rocky channel, so lovingly hid by the Ferns, glimpses of the glistening finials of the *palacio* and the great lawn can be seen through the trees. Above the Ferns on the right are Azaleas, Camellias, and Rhododendrons, in full flower. The best view perhaps is from a little ledge, which is, as it were, an alcove by the side of the walk we have followed from the house. Here we are in the centre of the Ferns, and whether glancing upward or downward, it seems as if we were in another land. Below this standpoint the watercourse takes a turn, and so the Ferns cover a larger expanse of ground. The giant curves of the Cyathea medullaris fronds contrast vividly with the numerous fresh green plumes springing from the heads of the Dicksonias. The hill-side for some distance supports the same exquisite greenery. The background is the changeful foliage of Dr. Cargill's bed—his "Thalamus" he playfully called it,

> "Sith it lies
> A bed of odorous verdure on the rise."

It is lovely, too, at the foot of the falls, where the brook, issuing from the Ferns, speeds from rock to rock in the hollow of the lawn. Its gushing sound attempers the roar of the great cascade which hangs whitening above, although only revealed in part by the jealous Ferns. The stream above the falls is prettily edged with rocks, and the path near it likewise—a Fern-girt archway, surmounted by Yuccas and Aloes, being very tastefully designed.

Just at hand is the main entrance, through an avenue of Goa Cedars (Cupressus lusitanica). Planted twenty years ago, at a distance of 30 feet apart, all of the trees now touch. There is no Conifer with more graceful or more beautifully traced foliage than this. Behind them are standing tall Araucarias: excelsa, Bidwilli, and Cunninghami suit the climate best. The most vigorous Tree Ferns in the valley are Alsophila excelsa, Cyathea arborea, dealbata, and Smithi, and Dicksonia antarctica and squarrosa. The most wonderful growth is made by Cyathea medullaris; one specimen, planted four years, and five from seed, is now 15 feet high. One of the fronds formed an ellipse, of which the diameter was 13 feet 2 inches.

We will again return to the walk from which we diverged to see the Valley of the Tree Ferns. After crossing the bridge the way lies through an avenue of Dicksonias to the ruined chapel of Our Lady. This ruined fane is embowered in trees, and its crumbling walls are clasped round by Ivy, while Roses supply its roof. Inside is a valuable Etruscan sarcophagus, and plants have been introduced wherever there would else have been mouldering heaps of masonry, chiefly Ferns and the larger-leaved Begonias. In front the view takes in the ravine. Being exactly opposite the *palacio* this is a good place also to observe its arabesque architecture. Behind, the woods and *mata* are dense, and seemingly interminable. The trees around contain a fine Podocarpus neriifolia, and an Acacia dealbata, 3 feet 10 inches in girth at 5 feet up. The most extraordinary vision of all, however, is a Cloth of Gold Rose, which has taken possession of a tubular-shaped Cork tree. The Rose has clambered up its support so luxuriantly as to kill it, and still thirsting for further conquests, has thrown out branches to the neighbouring trees. The girth of the thickest stem is 1 foot 10 inches. In April hundreds of flowers were blow-

ing, and hundreds had shed their petals. The side of the path above the lawn is now unplanted, except where clumps incurve gracefully. By this means is shown the babbling stream at the foot of the lawn and a magnificent Eucalyptus falcata, 120 feet high. Before the walk takes a turn downwards to follow the course of the stream, the following shrubs and tress that are planted by its side may be noticed :—Corynocarpus lævigatus, a very fine example; Deutzia scabra, Podocarpus ferruginea, a tall Dryandra, two taller Dammaras, Lagenaria Patersoni, Eurybia nitida, Brachychiton acerifolium and B. populneum, Jambosa australis, Knightia excelsa, in bloom; Phyllocladus trichomanoides, Berberis nepalensis, Eugenia buxifolia, and Acacia melanoxylon, 5 feet in girth. At the head of the steps, which begin the descent to the stream can be seen "Mexico":—

> "Lo! Mexico,
> Rock strewn, in front of thee, what colours glow
> On his hot surface! All that Cactus gives
> Of undescribable painting, gorgeous lives
> On his steep slope, and Aloe's flaming head
> Shoots dashing upward from his rocky bed
> And Yucca's thousand chalices of snow."

Roses form a floral archway over the steps. Prominent among them is a Maréchal Niel, which here exhibits no signs of canker, and yet grows in the most luxuriant manner. The girth of one of the branches was 1 foot 8 inches. A group of flowering Camellias also brightens the vicinage. Some little way down the steep path is a stone tank for water. The sides are covered with Maidenhair Ferns. Over the top are strewn some Cork tree branches, upon which is trained a Boule de Neige Rose. When the path reaches the brook there is a choice of two ways, one conducting to "Mexico," and the other down the right hand bank. Let us take the latter. For the first part it is an arcade of trees, with glimpses of bright Rhododendrons and the deep glaucous spears of the Agaves. Over the rocky bed of the stream the hillside rises abruptly. Soon an opening discloses a bank of Yucca under some old Goa, Cypresses, among which, for contrast sake, are planted Cupressus fastigiata and tree-like New Zealand Dracænas. Still further back are wizened grey Cork woods, and in a line down the valley Pines, terminating in the vividly coloured Taxodium distichum. Miniature cascades occur whenever the path takes a sudden dip. In another open space Hydrangeas and Ferns have for company the merry prattle of a little runnel. Further on Rhododendrons hide the stream, and we leave the overarching foliage and seem to be at the bottom of a deep valley, with wooded steeps on either side. The undergrowth of Arbutus, Heather, Periwinkle, and Foxglove is thick, but also bright and pleasant, and natural in every prospect. The scene soon changes; we are beneath an arbour of Laurels, in which a cascade makes trilling melody. In the recess is a moss-grown sarcophagus, brought from Etruria. On the top piece is a lady in a semi-recumbent position, as if prepared for resurrection, and holding, curiously enough, a patera in her hand. The relief on the side consists of two dolphins bestridden by boy figures, with a mask-like head between. Further down the stream variation is again introduced by Palms, New Zealand Flax, Bamboos, and Fabianas. The brook also comes more into view, luxuriant Ferns thick by its side. In a sheltered dingle Sikkim Rhododendrons perfume the air, and above, waving Eucalyptus heads tell of breezes that here only gently fan. Every yard or so as we descend the valley there is something fresh. Here it is a wild Vine, the original support of which has died down, so that the root is connected as it were by a fibrous rope to the head in a tree some distance off. Here in a verdurous hollow, beneath the shadow of the Limes, just newly fledged, the Duke's brook comes hastening down from Osmunda Glen to join our stream. Beyond this point the path is about 50 feet above the water, so that only glances of its flashing waters can be seen through the foliage. On the other side are orchards of golden-fruited Oranges and Lemons. Finally, Peneus, for so the brook whose course we have followed is called, glides through cultivated fields to the Varzea; its banks the home of wild Flags and Gladioli.

The south sloping lawn at the threshold of the *palacio* is bounded to the west by "Mexico," which is situated on the side of a minor ridge, and sheltered om the west by a group of Pine trees. Mr. Cook in the vicinity of "Mexico" proper has lately experimented with Palms he was chary of trying at first; a list of those that are healthy will, therefore, be valuable. They are Phœnix reclinata, Ptychosperma Alexandræ (Archontophœnix Alexandræ), Cocos plumosa and Weddelliana, Howea (Kentia) Belmoreana, and Rhopalostylis (Areca) Baueri. A path runs along the head of this group, on the other side of which is a dense growth of Yucca Parmentieri and Agave coccinea. One of the latter, in flower, had a flower-spike 22 feet in height. Many of the Yuccas were 15 feet high, and were most striking and effective, while those in flower looked as if they were rearing a fountain from their midst. Mesembryanthemums and Gazanias fill up any bare spaces both in the border and in the crevices of the rocks that border the path. A noticeable plant in flower is Dasylirion longifolium. A great beauty of this path is formed by a tree which, having been blown across the path so as to leave ample passage to pass below, has not been removed. An Actinidia was growing on the fallen tree. The climber still continues to do so, but being thrown near a tall Grevillea robusta, 70 feet high, has also ascended it, and is flinging itself from branch to branch in wild luxuriance. The effect is indescribably beautiful, as also are other trees overrun in a similar manner by Tacsonias, Tecomas, and Maurandyas.

In "Mexico" proper Aloes and Yuccas of every kind abound, and monotony is avoided by inserting Palms. As there are here some of the finest Palms in the garden, it will simplify matters to take them all at once, not as we come upon them. Areca (Rhopalostylis) sapida, one leaf of which measured 12 feet; two wide-spread Date Palms, the circumference of the branches of one was 39 paces; Phœnix rupicola, Caryota urens, Livistona Hoogendorpii, Howea Forsteriana, and Euterpe edulis were among the most prominent or worthy of notice for being grown in the open. Among the other plants may be mentioned a group of five Dracæna Dracos, large Cacti, Dasylirion acrotrichum, some in flower; Opuntias, Echium, pride of Teneriffe; Eucharis grandiflora, Dracæna Shepperdi, Bonapartea juncea, Poinsettia pulcherrima, Vriesia glaucophylla, and two Cycads, namely, Encephalartos villosus and Macrozamia cylindrica. At the foot of this varied bank of plants is another little reservoir, which is covered by damp loving plants, and circled and shadowed by a Monstera deliciosa. The hillside above is covered with Cedars, Eucalypti, and Cork trees.

A short distance out on the lawn from "Mexico" are the Araucarias that were so prominent from the south portico. The best specimen of A. Bidwilli is 9 feet in girth at 1 foot, and 7 feet 11 inches at 4 feet. The circumference of the branches is 60 yards, and the height 65 feet. A. Cunninghamii is taller, but not so wide-spread, with a girth of 6 feet 5 inches at 3 feet. In the centre of the group are three Aexcelsas, each approaching 80 feet in height; the middle one girths 8 feet 3 inches at 3 feet, and the distance round the branches is 63 yards. Here also it must be remembered that it has only taken a period of twenty years for these fine Araucarias to reach the above dimensions. Behind them, on the ascending slope, is a group of tall Palms. Ptychosperma Cunninghamiana, 25 feet high, and 2 feet 6 inches in girth; Seaforthia elegans, Livistonia borbonica, Corypha australis, and Chamærops excelsa are, perhaps, the tallest. The Corypha is 45 feet high, and at 2 feet girths 5 feet 9 inches. The contrast afforded by the Palms to the Eugenias and Cupressus funebris above them, and to the Araucarias is most striking.

The west side of the house is chiefly remarkable from gay beds of Rhododendrons and Roses planted in a bow-like hollow under the shade of a wooded knoll. The Acacias, many of them in flower, brighten up the surrounding foliage. Below the Roses is a sweet woodland path leading round to the north side through Pines and Eucalypti. A beautiful effect is given by covering spots on the lawn where trees have been taken down with crimson Mesembryanthemums, and by planting Yucca and Aloes on the turn of a steep bank.

The kitchen garden is at the base of the hill on the north side, and is protected by a high Pittosporum hedge. Two noticeable plants are growing in the open there, to wit, Anona glabra and Chrysophyllum imperialis (Theophrasta imperialis). In the immediate neighbourhood of the house on this side may be found Gardenias, Illicium floridanum, Caladiums, Abutilons, and numerous other greenhouse shrubs and plants—at least, so termed in England.

The above is but a meagre sketch of Montserrat, and but a very small proportion of the plants have been mentioned. The estate extends for some distance along the side of the serra towards Cintra, and includes in its confines a second ravine and series of cascades. Here the planting is nearly all natural, and few exotic trees are to be found. Nevertheless, the effect of the bright carpeting of the Cistuses and the dark verdure of the Cork woods was bewitchingly pretty. *C. A. M. C.*

## THE VERBENA.

The enterprise shown by Mr. W. Stacey, nurseryman, of Great Dunmow, seems likely to ensure for the Verbena a further time of popularity, like that which it enjoyed many years ago, when Smith, Sankey, Edmonds, and others did so much to improve it, more than a quarter of a century ago, a work continued later by Perry, Eckford, &c. Mr. Stacey both raises good things and cultivates them well, and when he brings specimens to London they are always in the best form, and command general admiration. He has endeavoured to improve the habit and flowers alike, and we should like to see the Verbena more generously encouraged as an exhibition plant. In some of the West of England shows plants of large size, finely grown and bloomed, can be seen during the month of August; and though they may present to the eye a rather formal mass of flower when trained over the sloping wire trellises used in that part of the country, they, when well done, always command admiration. That they can be grown into fine decorative specimens does not admit of doubt, because it has been, and still is being done; the close, short-jointed, wiry growth found to be characteristic of some of Mr. Stacey's new varieties renders them well adapted for this purpose.

The production of new varieties by Mr. Stacey extends over the past three or four years: and the fact that several of them have received First-class Certificates of Merit attests to their size and excellent form. The following two dozen varieties represent the cream of the Dunmow collection, viz.: —Lord Brooke, rich shaded scarlet, with conspicuous white eye, pip large, stout and of fine form; Striata, a charming striped variety, the ground white, the stripes or quarterings pink, the pip of fine form and the trusses of bloom large and bold; Hamlet is a fine variety of an orange-crimson colour, pip and truss very fine; Ophelia, rich rose-puce, very pleasing and distinct in colour, pip large and fine; Lilacina, pale lilac with dark centre, very pretty and distinct; Fairy Queen, light ground with a conspicuous red centre, looking like a Phlox, very pretty and distinct; Butterfly, rosy-purple shaded with maroon, and large white centre; Purpurea, rich violet-purple, with white eye, pip of very fine form; Othello, crimson-maroon, suffused with purple, habit excellent, a fine variety for bedding purposes; Purity, white, a remarkably fine Verbena, and one of the best for exhibition purposes, large and stout in pip and handsome in truss; Compacta, also a good useful white variety, large in pip and stout in texture; Mabel, delicate mauve, very pretty and in good form; Delicata, clear pink, very pleasing and of good form; Fantastic, a fitting name for a very distinct variety, the ground colour salmon-pink, striped with scarlet, pip large and bold; Lady Brooke, bright pink, with a darker shade in the centre, white eye, pip large, and of fine form, the truss bold and striking; Harlequin, white, heavily flaked and spotted with rosy-purple, truss and pip very fine; Magnate, pale pink, with lemon centre, large and fine; Orion, bright carmine-scarlet, yellow eye, large pip, of fine form and bold truss; Captivator, shaded crimson, with large white eye, a good useful variety; Miss Maynard, violet-purple, with light centre, truss very fine; Lord Wolseley, claret, shaded with purple, large white eye, fine pip; Rosy Morn, bright rose, Flambeau, fiery scarlet, with conspicuous lemon eye, a fine and striking variety; and Ruby, deep ruby-crimson, with white eye.

Here, then, we get a batch of new Verbenas of denoted excellence, and it must be said that the striped varieties, Striata, Fantastic, and Harlequin are remarkably good, and tell forcibly in a stand of cut blooms for exhibition.

The Verbena, when grown in pots, must have a liberal course of treatment. In the West of England

the plants are grown in what may be termed absurdly large pots, but perhaps they are necessary to bring to perfection the fifty or sixty fine trusses of bloom seen on some of the specimens. A good soil for these plants when grown in pots is a fibrous loam and well decayed manure, and when the plants are fully established they are greatly benefited by waterings of weak liquid manure. Treated thus, plants will yield a good display of bloom for three or four months, and will be found highly effective in the greenhouse and conservatory. *R. D.*

## GROWTH AND REST.

FEW phenomena of plant-life are more distinctly marked out than the alternations of growth and of arrest of growth. Sometimes the arrest is absolute, at other times it is relative, while frequently there is no absolute arrest, but a change in the direction or mode of growth. When a leaf-shoot ceases to grow and encases its extremity in a winter-bud, the arrest is for the time absolute; but when the shoot ceases to grow in length, and its leaves become modified to form the several parts of the flower, the process is clearly not so much one of arrest as of change in the mode of growth. The illustration (fig. 91) affords examples of arrest, followed by renewed activity of growth. The inflorescence of a Sempervivum, in place of producing flowers, as usual, developed a series of rosettes or tufts of leaves, which occupied the position usually filled by the flowers. In this case the axis or branch supporting the leaves was arrested in growth, the consequence of which was that the leaves were all crowded together into a tuft. When we first received the plant the inflorescence was a mass of these tufts, but after a few days the centre of several of the rosettes elongated and produced leaf-bearing shoots, as shown in the figure.

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Continued from p. 426*)

BERRY POMEROY.—The chief sight of the Totnes district, which is the correct termination to the brief voyage up the navigable portion of the Dart, is the picturesquely situated castle of Berry Pomeroy. On the road from Totnes to the village of Berry Pomeroy, a distance of less than 2 miles, one of the plants we noticed was an Arum, which in the number of its ovaries and their spiral arrangement suggested A. italicum rather than A. maculatum. The church, though exhibiting to the main road an unprepossessingly severe tower, has a pretty Ivy-grown east end of red stone, and a fine Yew tree stands in the churchyard, whilst the wall of the adjoining parsonage is beautifully decked with Ferns, Polypody, Wall Rue, Hart's-tongue, English Maidenhair, and Asplenium Adiantum nigrum, side by side. Not far off is a magnificent Sycamore, which we measured at 6 feet from the ground, as the ground level having altered, its roots began at almost 5 feet from the present roadway. Its girth was 16½ feet.

The castle is situated in a beautifully wooded glen, mainly composed of Beech, which "high overarch'd embower," and, though standing on a commanding knoll with a steep slope on three sides, is shut in by higher wooded hills on all sides. There are some fine Ash trees about the entrance, and also a rank growth of fine Teazles, Figwort, and other weeds, with magnificent clumps of Hart's-tongue—under the trees on one side the mound is literally draped with this Fern. An Elizabethan mansion built by one of the Seymours within the Norman castle, and gutted by fire, forms the most attractive part of the Ivy-grown ruin. At the foot of the northern slope of the castle hill runs a little, tributary of the Dart, which, after widening out into a withy bed bright by clumps of purple Loosestrife, flows over the wheel of an old mill that from the substantial granite work of its windows might well be coeval at least with the mansion in the castle. Of the Lythrum all three forms, long, short, and medium-styled, seemed equally abundant, and associated with it was the Great Skull-cap (Scutellaria galericulata). A limestone quarry hard by, streaked with every shade of red and grey, was copiously overgrown with Betony, Wood Germander, and the little white stars of Sedum album, which is distinctly one of the plants of the district. The babbling brook flowing from the wood-clad head of the glen, between the scarped rich coloured exposed rock and the wooded hill whence rise the ruined walls of the castle, through a flowery meadow to the lonely old mill, formed together a rural landscape not easily forgotten, and we returned to Totnes well satisfied with our short excursion.

DARTINGTON AND STAVERTON.

Our next day's destination was Dartington Hall and Staverton, the first-named place being the residence of Arthur Champernowne, Esq., the representative of one of the oldest Devonshire families, who has himself, unaided, unravelled the very complex geological structure of this district. Looked at, by the way, broadly, the geology of Devonshire is not at all puzzling. The oldest rocks—the Devonian—form two bands along the north and south coasts of the county, extending in each case for some 10 or 12 miles inland, and united subterraneously as two parts of a great trough or "synclinal" fold in which lie the carboniferous "culm-measures" of the centre of Devon; whilst through the southern portion has been thrust the great mass of granite rocks forming Dartmoor. When, however, we come to study the local effects of these foldings and intrusions, we find a well-nigh inextricable mass of faults, dykes and local minor folds; and these it is that Mr. Champernowne has unravelled in the Totnes area. Our two-mile walk to the Hall was mostly through the meadows on the gravel terraces of the Dart, which passes over a partly natural weir of limestone a little above the town of Totnes, and, in the present exceptionally dry season appears above that point as a broad, winding, shallow, and, in fact, fordable stream. By its water, now a shallow silver ripple, here a dark black swift running pool, and there breaking in white and amber foam, we noticed Sparganium neglectum in fruit, and an abundance of Alder, whilst in the neighbouring fields the Oaks were all apparently of the pedunculate variety. Dartington is mentioned in *Doomsday*, the greater port of the building, however, is the work of John Holland, Earl of Huntingdon and Duke of Exeter, half-brother of Richard II. It passed into the hands of the Champernowne family in the sixteenth century. Though there are traces of other buildings forming, perhaps, a second quadrangle, the existing remains almost enclose a rectangular space equal in area to "Tom quad" of Christ Church, Oxford—a space now divided by a modern wall and containing some exceptionally large Cherry-Laurels and a very fine Deodar. On the west side is the great hall, nearly 70 feet by 40 feet, and about 50 feet in height, with the main entrance, and kitchens overgrown with Ivy and mainly roofless, the roof having been taken down in the present century. It is in the Early Perpendicular style, and the simple slender mullions of the lofty windows have a magnificent effect. They are, however, probably a somewhat later insertion. The entrance exhibits some very fine ogee moulding, and the central boss of its groined roof bears the white hart couchant of Richard II. Another door is remarkable as having a "bolt-hole" 9 feet deep, to receive the beam that bars the door—a peculiarity paralleled in the west door of Exeter Cathedral. The great kitchen with its two huge fireplaces, either of them apparently capable of accommodating a whole ox, is strikingly similar to



FIG. 91.—INFLORESCENCE OF SEMPERVIVUM, IN WHICH THE FLOWERS WERE REPLACED BY TUFTS OF LEAVES.

that of the same date at Bodiam Castle, and we find in both places many examples of the arch for window or door consisting of two stones without a keystone.

The present dwelling-house forms the north-west corner of the quadrangle, from which, along the north side, extends a long wing that consisted originally of five distinct though united "retainers' houses," each with its separate porch and external stair, these latter, of which several remain, affording the only access to the upper storey. Beneath one of these porches, with other Ferns, were huge clumps of Asplenium Trichomanes, one of them over a foot across, bearing many fronds 6 and 7 inches in length. The east and south sides of the quadrangle, formed by the barns of the home farm, were rendered picturesque by the plentiful growth of the orange lichen (Parmelia parietina) upon the small squares of greenish-grey Ashburton slate. This slate, the roofing material of the district, is not very durable when thus exposed to the weather, but it lasts longer on vertical surfaces, as in the upper storeys of many houses in Totnes and Ashburton, which are built of it, though its cold monotonous colour is by no means ornamental when thus applied.

To the west of the house and great hall is the garden, which rises in beautifully turfed terraces on either side of a deep hollow in which there was formerly a fish-pond. A row of fine Irish Yews, a fine Araucaria and a promising Sequoia, are in keeping with the surroundings, whilst a wood on the opposite summit protects both house and garden on the west. Of gardening proper, however, there was but little, and it was soon forced upon our minds that in Devonshire the natural scenic beauties are so great that the owners of estates generally have adopted a "rest and be thankful" policy, planting trees and shrubs rather than flowers, and trusting to the natural geniality of their climate and fertility of their soil to save them the trouble of much garden cultivation.

From Dartington we walked to Staverton, something less than 2 miles further, but we did not take a final leave of the Hall until we had inspected Mr. Champernowne's unrivalled collection of the Stromatopora and other fossils of this and other Devonian districts under the ciceronage of their learned owner. As we were leaving our attention was arrested by a gigantic cider pounding-stone, a solid mass of Dartmoor granite, more than 8 feet in diameter, and weighing certainly between 4 and 5 tons. These stones, of which we saw several smaller specimens in the district, are hollowed round their upper surface, other vertical grindstones working round this hollow as in the mortar-mixing machines familiar in connection with London building operations.

The walk to Staverton is through undulating meadow and woodland, which at the time of our visit were in the height of their summer beauty. Passing along an old boundary wall on which luxuriated some six or seven species of Ferns, the Ceterach occurring among them in addition to those we had seen at Berry Pomeroy, flanked by a row of fine Beech trees, we entered an upland meadow, gay with pink Centaury, Eyebright, Bartsia, and two species of Flax (Linum catharticum and L. angustifolium) over which sported the meadow-brown, blue and other butterflies. The weather being cold and the sky overcast comparatively few Lepidoptera were about; but besides the common blue (Polyommatus alexis), there were certainly the three meadow-browns (Hipparchia janira, H. tithonus, and H. pamphilus).

Turning out of our way through Staverton Ford Wood we were fully recompensed for so doing, by the sight of one of the most magnificent specimens of the small-leaved Lime (Tilia parvifolia) in this country. Standing a few yards from the pathway, on the edge of a steep wooded slope down to the river, this veteran has a girth of 15 feet at 5 feet from the ground, and sends out two monster ascending limbs that stretch 20 yards on either side from the main trunk, whilst a third rises erect, like the palmated antler of the reindeer, measuring 6 feet across below the point at which it divides into three branches. Such a tree must be considerably over 250 years old, in fact of an age that will take us back at least two generations before the time when Ray speaks of the planting of Lindens in his time. The species is common in this part of the county, and has often very much the appearance of being indigenous.

We then walked through the North Wood, where abundance of Blechnum spicant, the beautiful little yellow Pimpernel, Sanicle, Bracken, and other woodland plants were noted, together with the fruit of the wild Hyacinth and of the Foxglove, of which last a few blossoms still lingered. On one plant, 7½ feet high, we counted 110 capsules. Each of these contains 200 or 300 seeds! Among the well grown young Beeches in the glades of this wood fluttered the Wood Ringlet (Hipparchia hyperanthus), and a considerable number of that magnificent butterfly the High-brown Fritillary, Argynnis Adippe) that, from the chequered marking of its wings, shares a name with the liliaceous plants, whose flower is often similarly ornamented, the name signifying "chequered."

Staverton Bridge is one of the most beautiful on Dart, springing amongst glossy-leaved Alders, overgrown with Ceterach, and having several more arches than seemed necessary in the shrunken state of the stream beneath it. Much of the bed of the river was a bare heap of pebbles, including every variety of granite that occurs on Dartmoor, but one could well see that in winter the babbling brook might be as swift a current throughout its whole breadth as it was now in a narrow stream just below its thickly wooded and steeply sloping right bank. After a rapid survey of the church, which has the peculiarity of a small monumental brass let into the outside of the chancel-wall, and a hearty meal off the excellent bread and cheese and two-year-old cider at the "Church-house" Inn, whose ecclesiastically named walls were covered with a fine plant of Escallonia rubra, we retraced our steps to Totnes and took train for our second halting-place, Ashburton.

*(To be continued.)*



Fig. 92.—Masdevallia leontoglossa.

## MASDEVALLIA LEONTOGLOSSA.

This curious plant, although discovered by Hermann Wagener more than a quarter of a century ago, was unknown in collections until the last few years, during which it has flowered in several collections, and in particular in that belonging to Sir Trevor Lawrence, where a dense leafy plant of it has produced many flowers. M. leontoglossa (fig. 92) is one of a distinct section of the M. coriacea group. It has thick fleshy leaves, often tinged with purple, and by these and the peculiar manner in which it produces its flowers, it is easily distinguished. It succeeds well in the cold house with the other Masdevallias, either in a pot or in a basket, but grown in baskets and suspended the waxlike flowers (which are pale yellow marked with purple), they more readily present themselves to view. M. leontoglossa, when closely examined, is wonderfully beautiful in its structure and marking. It is at present in flower in the collection belonging to Sydney Courtland, Esq., at Bocking Place, Braintree. *J. O'B.*

# The Apiary.

I had intended that my paper this time should be on wax extracting, but as people have their honey all out of the hives now, and are thinking of storing or selling it, I must say something more about the most important part of the produce of our friends the bees—viz., the honey. It has hitherto been a difficult thing to store extracted honey in a nice and convenient way, but still more difficult to send it by post and rail. Numerous are the letters I have received to this effect—"Honey received, but useless, as bottle was smashed." Only a few weeks ago I had a telegram from the postmaster of M—— saying that the box of comb honey I had so carefully packed was broken, and the honey running amongst other people's letters, and he requested that I should instruct him what to do with it, as he could not put it in the mail bag. I requested the postmaster to prevent further injury to the letters by eating it.

There is now, however, a box made which will cause a complete revolution in the honey as well as all other trades which require the aid of tin boxes. These boxes are invented by Mr. G. Featherstone Griffin, C.E., M.S.E., and are manufactured and sold by the Self-Opening Tin Box Co., at 19, Kirby Street, Hatton Garden, E.C. These boxes serve all purposes, and are made all sizes, so that any quantity of extracted honey can be sent with perfect safety, and without weighing. Do you wish to send 10 lb. of honey anywhere? Take this company's 10 lb. tin box, fill it with honey, lay the lid exactly level with the top of the box, and then press the lid down as far as it will go, taking care that it is even. The box will then be perfectly air and water tight, as there is no seam in the tin to interfere with a perfect fitting joint. If the porters at the railway stations say, "Now, Bill, you catch and I'll toss," as the author once heard them say, no harm will come to your honey, but it will arrive at its destination after passing through "Bill's" tender mercies just the same as when it started from your home. As air and water are entirely excluded these tins also do excellently well for storage. The honey will keep any length of time in them, and when you require to use any, you have only to lever the lid up, which can be done by your smallest child, and take out what you want. The lid must be put on evenly as before and pressed down. If the Self-Opening Tin Box Company would be kind enough to make tin boxes that would exactly hold our sections of comb honey, then would almost our only remaining difficulty vanish. These tins are also supplied to Messrs. Carter, and the Horticultural Societies of India and Australia, for preserving and transporting seeds. Tins were also sent out to the Government of India for packing the Cinchona bark in, and the Horticultural and Agricultural Societies of India directed Messrs. Sutton of Reading to send out all their seeds in these tins. *Agnes.*

## ORCHIDS FOR AMATEURS.

(*Continued from page* 399.)

### Epidendrum—Nemorale Section (*continued*).

*Epidendrum bractescens.*—A plant similar in habit to E. ambiguum, with ovoid crowded pseudobulbs and grass-like leaves. It is one of the prettiest of the small species of Epidendrum. The beautiful white labellum with crimson veins and rose-coloured shades, contrasted with its dull purple sepals, makes it a very desirable plant, although it does not seem to have been imported of late. It is a native of Mexico.

*E. dichromum* has elongate fusiform pseudobulbs, resembling those of Lælia autumnalis. Having regard to the form of the pseudobulbs alone, this plant should perhaps be placed in another section of the genus, but the structure of the flowers resembles that of the plants included in this section. In wild plants the scape is often 3 feet long; it bears a many-flowered panicle. The flowers vary much in size; some are large and rose-coloured, others small and white. In the best form the sepals are an inch long, they are narrow and pointed, the petals are broader. The lip is deeply three-lobed, yellow and downy at its base, with veins and ribs of crimson radiating to its margin.

*E. Hanburii.*—A Mexican species with ovate pseudobulbs and narrow ensiform coriaceous leaves. The flowers are racemose; the raceme often 2 feet long. The sepals and petals are deep purple, the labellum is 3-lobed, the central lobe is of a pale rose colour with crimson radiating veins. The lateral lobes are white, and curve over the column. It flowers in spring.

*E. macrochilum* has ovate rugose pseudobulbs with two oblong coriaceous leaves. It is a native of Guatemala and Panama. The flowers are the largest in the genus. There are two varieties, one with brown sepals and petals, and a very large white labellum with a purple spot at its base, the other with deep purple sepals and petals, with a deep rose-coloured labellum. The plant is called the Dragon's Mouth (Boca del dragon) in Guatemala.

### 2. The Aurantiacum Section.

In this section the bulbs resemble those of a Cattleya with a thin stem below. Lindley speaks of the pseudobulbs as "evidently tending to the condition of an ordinary stem." The flower-spike grows out of a great spathe as in Cattleya.

*E. aurantiacum.*—A native of Guatemala and Mexico, where it grows upon bare rocks. The habit of this plant resembles that of Cattleya Skinneri. The bulbs are 7 or 8 inches high; they bear a pair of thick coriaceous leaves and a broad spathe. The flowers are of a uniform bright orange yellow, with crimson ray on the lip, which has three elevated lines in the throat. This species has numerous flowers, which are produced in spring. It should be grown in the coolest part of the Mexican-house, or it will do well in a warm greenhouse. Many plants do not open their flowers well, probably from some error of treatment. Several of the Epidendra without bulbs which I have referred to the radicans section have a spathe. They form the sub-genus "*Spathium*" of Lindley.

### 3. The Bicornutum Section.

*E. bicornutum.*—A native of Trinidad and Demerara. The pseudobulbs are cylindrical, tapering at each end, and jointed like those of a Dendrobe. Each bulb bears two or three bright green leaves at its summit. The flowers are ten to twelve in number, forming a panicle. Each flower is nearly 2 inches in diameter, ivory-white, or tinged with rose, with a few crimson spots at the base of the labellum.

*Culture.*—This beautiful plant is difficult to import, and seldom arrives in a good state; the bulbs crack, or the buds perish; neither is it easy to grow, and it appears to dislike being moved. A specimen which is doing well, often fails after removal to a new locality. It requires the heat of the East Indian-house, and does best in a pot.

*E. erubescens.*—I have included E. erubescens in this section from the form of the pseudobulbs, but Lindley has placed it in a distinct group (Aulizeum). It is a native of Mexico, where it grows on Oaks at an elevation of 7500 to 8500 feet above the sea. The pseudobulbs are fusiform, with two oblong-acute leaves at their summits. The habit of this plant is very distinct, as it makes long woody rhizomes, which root from the under-side, and bear pseudobulbs at intervals of 5 or 6 inches. The flowers are borne in panicles. They are of a delicate rose colour, and as large as a shilling; the lip is darker than the rest of the flower, and has a yellow spot at its base.

The cultivation of this plant is said to be difficult; its habitat indicates the necessity for cool treatment, and experience shows that it is best grown with Odontoglossums.

*E. Stamfordianum.*—Plant with fusiform pseudobulbs like those of a Cattleya, sheathed with coriaceous bracts. The flower-stem grows from the base of the bulb instead of from the summit—a character in which it differs from the rest of the genus, with the single exception of E. purpurascens, which has also a radical inflorescence. The inflorescence is a large branched raceme. The flowers are very fragrant and showy. The petals and sepals are green, shaded with yellow, and spotted with rich chocolate-brown. The lip is broad and trilobed. The lateral lobes are toothed, and the median lobe is laciniate, and of a deep yellow colour. This plant is a native of the coast of Guatemala; it grows in shady damp places on the ground. There are two varieties, one much better than the other. The best form is said to have longer and thinner bulbs.

### 4. The Barkeria Section.

The genus Barkeria was separated from Epidendrum because the column has a broad wing, so that it is described as petaloid, and because the labellum is adherent to the column. Professor Reichenbach has reunited the genera, as the winged column of Epidendrum often becomes petaloid, and every degree of union exists between the column and the lip in the Epidendra. There seems no sufficient reason to separate the Barkerias from Epidendrum unless it be the habit of these beautiful Orchids. I have therefore ventured to include them in the genus.

The Barkerias are epiphytal Orchids with long fusiform pseudobulbs, which in their native country form dense tufts; each bears two to four leaves with a slender upright flowering stem arising from the apex of the pseudobulb. This bears a panicle of delicate and elegant flowers. The sepals are reflected, and the petals, which are broad, stand out like a pair of wings. The labellum is entire.

*Culture.*—These plants are natives of the west coast of Central America, where they are alternately exposed to torrential rains and extreme drought, hence they require a very copious supply of water during the period of growth, and a well marked period of rest during which no water should be applied to them. Some recommend that they should be simply affixed to blocks of wood, whilst others prefer to plant them in baskets, with little billets of charcoal and living sphagnum. The moss may be picked out with advantage at the approach of winter. During the growing period they are likely to suffer from want of water when they are placed on bare blocks, so that I prefer the latter method. They should be placed as near the glass as possible. I have found that they do best in the moist heat of the Cattleya house during the period of growth; but they should be removed to the Mexican-house as soon as this is completed, and the waterings gradually diminished. The leaves then fall. Some species flower before the fall of their leaves, and others after. No water should be given from the end of October until growth commences in spring. In winter the temperature should not exceed 55° or fall below 45°, and air should be given freely whenever the temperature renders this possible. *B. T. L.*

(*To be continued.*)

# Orchid Notes and Gleanings.

A very interesting incident has just come under my notice, which may prove to be of some educational value to Orchid importers and growers. Dr. Ward, of Southampton, recently imported a batch of Sophronitis grandiflora and very generously gave me a few pieces of it. I laid them aside for a few days, then potted them and suspended them from the roof of the house. About a week after I examined them more closely, hoping to see roots moving, or breaks starting, when, on one piece of six bulbs I discovered a pod of seed about as large and of the same colour as the freshest leaf. Now I cannot for a moment suppose that this is the only case where seed-pods have been found on imported Orchids. But the questions suggested by this event are—Who have seen them? and, What results followed?

Can it be possible that there was sufficient vital power stored up in the foliage and bulbs of this small plant to sustain the life and supply the natural requirements of the seeds after it was taken away from its native home, and sent here in a half-dried condition, and in such condition to remain until new roots are

thrown out to gather food, and restore the lost energies of the plant? Or is it probable that the enforced rest caused a suspension of organic life during the time of rest, and that when roots were formed and supplying sustenance to the plant, the organic forces again became active, and brought the seed to maturity? Or is it more likely that there is either no seed in the pod, or, if any, that it is void of germinating power?

I do not suppose that this seed-pod will awaken amongst Orchid growers such intense interest as did Mr. Pickwick's immortal discovery of the stone at Cobham amongst his friends. There is, however, some interest clustering around this event at present, but perhaps some one will as quickly solve the matter by saying, "Cut it off, and throw it away." *N. Blandford.*

VANDA CŒRULEA.

The difficulty attached to the growing of this species is doubtless the greatest obstacle that prevents its becoming common. In Warner's *Select Orchids*, p. 18, is a handsome figure of this species, and it has the honour of being figured in numerous other works. It is universally admitted to be a valuable and highly desirable Orchid; a fact to be accounted for, partly, because uncommon, but more by reason of its colour, which, although represented in a few different genera, is anything but of common occurrence. The sepals and petals are of a pale lavender, but subject to individual variation in the depth of its tint. The petals have the habit (and it is not a solitary instance in the genus) of turning downwards by twisting near the base, so that when level with, or below the eye, one can only see their backs. The comparatively small labellum is a deeper blue, with three longitudinal plates along its middle, which, with a yellow spot at the base, serve as guides for the fertilising insects, so necessary in the plant's economy in a wild state. A handsome flowering specimen may be seen in the Orchid-house at Kew, and we occasionally see it in other collections, though by no means common. *F.*

# The Flower Garden.

THE recent access of frost, and the rain have destroyed all tender plants in the beds, therefore these should be cleared and replenished with such plants as are suitable for winter or spring decoration. It is advisable at once to take up all tender plants, and such as are not in sufficient number for next year's requirements.

These plants should be carefully taken up, potted, and placed in cold frames or pits, where heat can be given according to their wants, they will then become established early. No time should be lost in propagating when stock is deficient.

To facilitate cuttings striking at this late period, they should be plunged in a moderate heat for about twelve or fourteen days. This is a good time to propagate the Calceolaria, Viola and Pansy. The propagation of all the tenderest kinds of plants will now in most places be completed, and much care will be required to keep them from damping off. Of course all should now be safely housed, and fully exposed to light and air when the weather is suitable. Careful attention should be given to remove all decayed flowers and foliage so as to make the garden as gay and attractive as long as possible. Strict cleanliness should be maintained at this season. Alterations should at once be decided on, that the work may be set about; as it is not judicious to defer work of this kind that can be done in autumn and winter till the spring. Road and walk making, turf laying and levelling, tree and shrub planting, Box edging, draining and trenching, and all such heavy jobs may now be accomplished. Spring and winter bedding-out plants which have been in the reserve garden to refill all the vacant beds in the flower garden will now soon come into requisition. *W. Smythe, Basing Park, Alton.*

# Plants and their Culture.

BOUVARDIAS.

THOSE that are still in the open border will soon need to be brought under cover; the few chilly nights of late have given us warning that the autumn frosts are not very far distant. We are just preparing a three-light pit for their reception, into which they will be planted straight away when lifted from their present position. They have been kept well pinched back, and are now a stocky lot of plants that will be invaluable for supplying cut bloom during the next three months.

SOLANUMS

that have been grown beside them, have had all their leading shoots beyond the berries pinched off; this will aid in perfecting the crop and cause less drain upon the resources of the plants when lifted for potting in a week or ten days' time. We have an abundant crop of berries, but they are rather later than usual. As they will not be wanted, however, until the Chrysanthemums are over, there is plenty of time before us in their case. All other winter and spring blooming plants that are still in the open ground should be taken up for potting without any loss of time; fresh root-action will then be gained before the dormant period is upon us.

PLANTS FOR FORCING.

Any needful additions to the stock should be obtained and potted up as soon as possible. Azalea mollis in variety are always valuable both for cutting and decorative uses on the plant. Rhododendrons, Kalmias, and Andromedas require to be renewed every season, whereas the Azalea just named does not need this extra trouble; the latter three genera are not, however, to be passed over on any account; they are each and all of great service in their turn, and particularly so if a large conservatory has to be kept gay. The Lilac, Charles X., is still one of the best kind for pot culture. Staphylea colchica is very distinct, and one of the nearest approaches we have to the Orange blossom in its season. Deutzia gracilis, if exhausted or otherwise not reliable, ought to be recruited by the addition of some young plants to the stock already in pots. Clematis culture in pots has been so fully demonstrated during the past few seasons that they can be thoroughly relied upon. The following are six good and distinct kinds, viz., Albert Victor, Lady Londesborough, Miss Bateman, The Queen, Vesta, and Stella. The Gueldres Rose (Viburnum Opulus) is another capital pot plant for the spring, and one, too, that is of a thorough lasting character.

WINTER FLOWERING EPACRIS AND ERICAS.

These, if not already fully exposed to the sunshine, should for the next fortnight have the full advantage of it. By that time all arrangements for their winter storeage should be completed, as a safeguard against heavy rains and frosty nights. Recent purchases of small Ericas will need the closest attention in regard to watering; in most cases their pots are crammed with roots, and if perchance an omission or two occur in the use of the water-pot no after-care will atone for the evil that has been wrought, and the consequent failure to develope their flowers. *James Hudson, Gunnersbury House Gardens, W.*

# Fruits Under Glass.

PINE-APPLES.

BEFORE cold and sunless weather comes upon us it will be well to proceed with and complete any rearrangement of the plants or work in connection with these plants that may be necessary. Our usual practice at this season of the year is to bring all the fruiting plants together into one compartment, where they can be constantly supplied with heat suitable to their requirements, of 70° or 75° at night, 75° to 85° during the daytime, at about 85° at the roots. We also endeavour to have those plants which are intended to give a supply of fruit from the end of next May until the end of July together. We have recently for these plants prepared compartments, in the first place by removing entirely the old plunging material; this is a most important matter in connection with good cultivation of these plants, because these beds, "although absolutely indispensable," are nevertheless, when permitted to become much decomposed, or otherwise to remain for a long period unchanged, become so full of worms as to render high-class cultivation almost impossible. Of all insects, or reptiles that infest Pine plants these are the most pernicious and destructive in their effects. Healthy, vigorous plants very soon become impaired, and the fruit as a natural consequence diminished in size and quality by their operations. By way of avoiding such consequences, we use as remedial means dry soot; this is scattered amongst the crocks at the time of potting the plants, and about the surface soil and rim of the pots, also beneath them in the bed, and occasionally use it in the water we give the plants. These means, in conjunction with using at the time of potting the toughest turfy loam obtainable, is the best way of dealing with this intolerable pest. In the case of plants which are loosened through their depredations, these should be made firm again by well ramming down the soil when it is in a fit state for this purpose. After the compartments to which I referred have been thoroughly cleansed, lime-whitened, and painted, if required, new tan to the depth of 18 inches, and 2 feet in some cases, is put into the beds, the bottom-heat is applied, and when the bed has reached about 80° the plants are plunged in it at about 2 feet apart always for Queens, and 2 feet 6 inches in the case of stronger and more robust growers. Our plants for this purpose have up till now been grown in pits with fermenting beds, and were potted into the fruiting pots —11 and 12-inch ones—the first week in August last. They are now placed in the pits as described above, where they will remain until such time as they have fruited, which doubtless will be by the end of next July. Our present temperatures, and for some time onward, in these pits, will range from 65° to 70° at night, according to external conditions, and from 70° to 80° in like manner during the daytime; the air in the place will be kept moderately moist, and early in the afternoon occasionally on fine days a gentle syringing overhead will be applied. The ventilators will be opened at from 75° to 80°, and finally closed for the day at about the latter point.

Successional plants in 6 or 8-inch pots may safely be wintered in these pits, and suckers recently removed from the parent plant should be firmly potted in tough fibrous loam in 5 or 6-inch pots. I keep these plants in pits having fermenting beds, with a gentle heat in them, and as near to the glass as practicable, and allow a range of from 60° to 75° at the present time and onwards until the end of the present month (October). *G. T. Miles, Wycombe Abbey.*

# The Kitchen Garden.

LETTUCE: ENDIVE.

FROM the sowing made about the middle of last month (of hardy Cabbage varieties) some should now be pricked out at the foot of favourable walls and on borders sloping south, and some may also be planted out in the open to grow on for placing under protection. Any spare frames which have lights free from much drip may be filled with seedling Cos and Cabbage Lettuce (hardy varieties) from sowings made the latter week in August. These will be of great value for spring use. The plants may be pricked out 6 inches apart, as in all probability it will be found necessary to draw before full grown, leaving the remainder more space to develope. Frames for this purpose should have a favourable aspect, and should be filled with light and moderately rich soil. Some plants should now be blanched, as Lettuces will soon be going back in quality.

PARSLEY.

In order to ensure a good winter's supply of the above a frame should now be filled with roots dug up from the open ground, derived from sowings made about May or June. Trim off most of the leaves when lifting and plant in nice soil. It is well to lay in the roots in trenches 6 inches apart and somewhat thickly. The frame should be kept a little close until the plants recommence growth, when the lights may be again removed until required. *G. H. Richards, Somerley Gardens, Ringwood.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Oct 5—Sale of Tuberoses Bulbs from Holland, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Crystal Palace Autumn Fruit Show and International Potato Show (four days)

WEDNESDAY, Oct 7—Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Stove and Greenhouse Plants, at Chelmeley Park, Highgate, by Mr J. C. Stevens. Sale of Orchids and Plants at the Castle Nurseries, Lower Norwood, by Protheroe & Morris.

THURSDAY, Oct. 8—Sale of Imported Orchids from Mr. Sander, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Oct 9—Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Oct 10—Sale of Bulbs from Holland, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.

THE green coloration of the leaves of plants is more or less characteristic according to the kind of plant, and more or less intense according to their structure, healthy condition, and especially in proportion to the amount of diffused light to which they are subjected. As to the kind of plant it is astonishing what a variety there is in the shade and intensity of tint. We are apt to speak, for instance, of "grass green" as if all grasses were of the same colour, but let any one compare the colour of Rye, to take only one instance, with that of the wild Barley (Hordeum murinum), and how great the difference will appear. The depth of the tint, again, varies, not only according to the general health of the plant and the conditions of its exposure to light of varying intensity, but also according to the internal structure and arrangement of the palissade and other chlorophyll-containing cells. We have already called attention to this matter in connection with the leaves of Orchids and of Conifers, and have indicated the relations between the physiological activity and movements of the leaves and the disposition and thickness of the chlorophyll layers; and have indicated the cultural suggestions which may fairly be deduced from these facts.

The whole subject is of extreme importance, and little more than the fringe of it has yet been studied, whether from the side of chemistry, physics, or anatomy. PRINGSHEIM'S researches have been alluded to in these columns, but it can hardly be said of them at present that they are matured sufficiently to be available for cultural purposes. The effects of various manures containing iron, and especially those containing ammonia or nitrates, on the colour of plants, are more tangible so far as the gardener is concerned, and both he and the farmer have at their disposal the truly magnificent series of experimental researches carried out by Sir JOHN LAWES and Dr. GILBERT. It is quite easy on the experimental grounds at Rothamsted to pick out, by the varying colour of the foliage, those plots which are treated either with a moderate, or with an excessive amount of nitrogenous fertilisers; quite easy to see the different effects of nitrogenous manures on grasses and on leguminous plants respectively. It is easy to see, moreover, that a duly adjusted admixture of nitrogenous and of earthy and alkaline ingredients, especially potash, is more generally beneficial than either nitrogenous manures or mineral fertilisers separately. The nitrogenous manures as a rule favour succulent leaf development, but are not proportionately favourable to the woody tissues, the mineral manures, speaking broadly, favour the development of woody fibre at the expense of the more succulent tissue, and accelerate the ripening of the seed. Such generalities as these are now beyond dispute, but of course much, very much more requires to be elucidated before we can be said to have got beyond the alphabet of the subject. Any further communication will therefore be of value, and from this point of view, the following paper, read before the British Association at Aberdeen by Dr. GILBERT, will be perused with interest*:—

"All who are accustomed to observe vegetation must have been struck with the great variety of shades of green which the foliage of different plants present. Without pretending to generalise further it may be stated that, at any rate so far as our common agricultural plants are concerned, they show somewhat characteristic shades of colour according to the natural order to which they belong—the Leguminosæ differing from the Gramineæ, the Cruciferæ, the Chenopodiaceæ, and so on. But the same plant will exhibit very characteristic differences, not only at different stages of growth, but at the same stage in different conditions of luxuriance, as affected by the external conditions of soil, season, manuring, &c., but especially under the influence of different conditions as to manuring.

"The Rothamsted field experiments have afforded ample opportunity for observations of this kind, and it has been quite obvious that in a series of comparable experiments with the same crop depth of green colour by no means necessarily implied a finally greater amount of carbon assimilation; whilst we have long ago experimentally proved that the deeper colour was associated with a relatively high percentage of nitrogen in the dry or solid substance of the herbage; and this obviously means a lower relation of carbon to nitrogen.

"Mentioning these facts to Dr. W. J. RUSSELL, who has devoted so much attention to the subject of chlorophyll, he kindly undertook to make comparative determinations of the amounts of chlorophyll in parallel specimens, in which we were to determine the percentages of dry matter and of nitrogen. Accordingly, Dr. RUSSELL spent a day at Rothamsted during the period of active vegetation, for the purpose of collecting appropriate samples which were taken from several differently manured plots of meadow-grass, Wheat, Barley, and Potatos respectively.

"The following table gives the results of some of these experiments; namely, the percentages of nitrogen, and the relative amounts of chlorophyll, in the separated gramineous and the separated leguminous plants in the mixed herbage of grass land; in specimens of Wheat grown by a purely nitrogenous manure, and by the same nitrogenous manure with a full mineral manure in addition; and in specimens of Barley grown by a purely nitrogenous manure, and by a mixture of the same nitrogenous manure and mineral manure in addition. It is to be borne in mind that the specimens were collected whilst the plants were still quite green and actively growing. It should further be explained that the amounts of chlorophyll recorded are, as stated in the table, relative and not actual; that is to say, the figures show the relative amounts for the individual members of each pair of experiments, and not the comparative amounts as between one set of experiments and another.

*Relation Between Nitrogen Accumulation, Chlorophyll Formation, and Carbon Assimilation* †

| | Nitrogen per cent. in dry substance. | Relative Amounts of Chlorophyll. | Carbon assimilated per acre per annum lbs | |
|---|---|---|---|---|
| | | | Actual. | Difference |
| *Hay.* | | | | |
| Gramineæ | 1.190 | 0.77 | . | . |
| Leguminosæ .. . | 2.473 | 2.40 | .. | .. |
| *Wheat.* | | | | |
| Ammonium-salts only | (1.227) | 2.00 | 1398 | —524 |
| ,, salts and mineral manure .. | (0.566 | 1.00 | 2222 | |
| *Barley.* | | | | |
| Ammonium-salts only | (1.474) | 3.20 | 1403 | —685 |
| ,, salts and mineral manure | (0.792) | 1.46 | 2088 | |

"It will be seen in the first place that the separated leguminous herbage of hay contained a much higher percentage of nitrogen in its dry substance than the separated gramineous herbage; and that, with the much higher percentage of nitrogen in the leguminous herbage, there was also a much higher proportion of chlorophyll. Under comparable conditions, however, the Leguminosæ eventually maintain a much higher relation of nitrogen to carbon than the Gramineæ; in other words, in their case carbon is not assimilated in so large a proportion to the nitrogen taken up.

"Next it is to be observed that the Wheat plants manured with ammonium-salts alone show a much higher percentage of nitrogen than those manured with the same amount of ammonium-salts, but with mineral manure in addition. The high proportion of chlorophyll again goes with the high nitrogen percentage; but the last column of the table shows that, with the ammonium-salts without mineral manure, with the high percentage of nitrogen, and high proportion of chlorophyll in the dry matter of the green produce, there is eventually a very much less assimilation of carbon. The result is exactly similar in the case of the Barley, the plants manured with ammonium-salts alone showing the higher percentage of nitrogen, the higher proportion of chlorophyll, but eventually a much lower assimilation of carbon.

"It is evident that the chlorophyll formation has a close connection with the amount of nitrogen assimilated, but that the carbon assimilation is not in porportion to the chlorophyll formed, if there be not a sufficiency of the necessary mineral constituents available. No doubt there had been as much or more, of both nitrogen assimilated, and chlorophyll formed, over a given area, where the mineral as well as the nitrogenous manure had been applied, the lower proportion of both in the dry matter being due to the greater assimilation of carbon, and consequent greater formation of non-nitrogenous substances."

* *Note on the Conditions of the Development, and of the Activity of Chlorophyll.* By Professor J. H. Gilbert, LL.D., F.R.S. (Read in the Chemical Section, at the meeting of the British Association at Aberdeen.)

† The figures in parentheses represent determinations on not fully dried specimens.

—— SATYRIUM CARNEUM.—We have to thank Mr. T. SMITH, of Newry, for a fine flower, albeit a little past its best, of Satyrium carneum, gathered in the garden of W. J. HALL, Esq., Narrowater, Co. Down. This species of Orchis is a native of the Cape of Good Hope. It forms a dense spike of a foot or more in length; the flowers, helmet-shaped, are less in length than the bracts, which partly enclose them; the colour is whitish-pink. It is somewhat tender, and requires some protection from frost.

—— THE SUGGESTED NORTHERN DAHLIA SHOW.—This venture may now be regarded as safely floated, with a fair prospect of a successful result. The committee of the York Floral Fête are willing to take it up and work it through, their estimable secretary has already prepared a circular shortly to be issued. In this circular it is proposed that the show shall take place on a day hereafter to be named in the spacious exhibition building at York, that the sum of £250 be offered in prizes, to include fruit and other cut flowers, in addition to Dahlias; and that a guarantee of £400 is necessary in order to secure the committee against loss. An appeal will therefore be made to florists in general and cultivators of the Dahlia in particular, and there should be no difficulty in raising the sum required. The annual dinner in connection with the York Floral Fête takes place on October 8, and no doubt advantage will be taken of that gathering to push into prominence the suggested Dahlia Show at York. It is also to be regarded as the northern section of the National Dahlia Show, which is a happy decision, as it does away with any apprehensions of hostility to the show at the Crystal Palace. Like the National Auricula Society, it will now, it is hoped, be represented by exhibitions both in the North and South of England.

—— INTERNATIONAL FRUIT SHOW, BUDA-PESTH.—An exhibition of fruits, both native and foreign, is to be held at Buda-Pesth, from October 15 to 30, at which money prizes, as also medals, will be awarded. Mr. WILHELM GILLEMOT, Gruppen Commissar, Landes Austellung, Buda-Pesth, will receive applications for space, and forward programmes of the arrangements.

—— EXHIBITION OF CHRYSANTHEMUMS AT DEVIZES.—This annual exhibition takes place this year on November 17, as usual, in the Corn Exchange, and it is worthy of special notice, inasmuch as it is of a purely benevolent character, promoted by a body of ladies who act as district visitors among the poor, and any surplus obtained is devoted to purely benevolent objects. A bazaar of useful and fancy articles takes place in connection with it, and good prizes are offered to growers of this popular autumn flower, All the exhibition arrangements are in the hands of Mr. THOMAS KING, The Gardens, Devizes Castle.

—— PLANTS FROM IRELAND IN FRUIT.—The warm summers of the last two years are remarkable for their effects in ripening the fruits of some rare plants in Ireland as well as in England. Miss C. M. OWEN, Knockmullen, sends us a shoot of Myrtus pennsylvanicus, bearing purplish-green fruits; and



FIG. 93.—ROCKERY AT BATTLE ABBEY. (SEE P. 424.)

Rubus occidentalis, cherry-red, sweet, Raspberry-like berries, of which the birds are, unfortunately, too fond. This should form a showy-looking Bramble in a warm corner of the garden.

—— PLANERA RICHARDI.—Sir C. STRICKLAND writes about this tree:—"If it be as durable as it is said to be why is it not planted in England more than it is? It has been known a long time, it seems to be perfectly hardy here (Yorkshire), and it is by no means very slow growing, and it ought to be worth more than Beech or Elm as a timber tree."

—— WOOLHOPE NATURALISTS' FIELD CLUB.—The last field meeting of the year will be held at Hereford on Thursday, October 8, for a foray among the funguses, when the Club will be honoured by the company of many distinguished mycologists. An evening meeting will be held in the Museum room, at the Free Library, on Wednesday evening, October 7, at 8.30, when the funguses brought there will be named and studied. Any collection of funguses for exhibition should be sent to Mr. CHAPMAN, at the Free Library, on Tuesday, or as early on Wednesday as may be convenient. The foray will be made on Risbury Camp and the park and lawns of Hampton Court. Members and visitors will leave the Barr's

Court station with the 9.25 A.M. train, to reach Leominster at 9.51, where carriages will be waiting to convey the visitors to Risbury Camp. After the excursion, and the completion of the necessary official business, a paper, entitled "Flamen pomonalis," will be read by Dr. M. C. Cooke, M.A., &c.; and another on "Some Further Remarks on the Origin of Domestic Poultry," by E. C. Phillips, Esq., F.L.S., &c. The following papers will also be read at one or other of the meetings:—1. "The Effect of Fungus Growth in Destroying Tree Life" will be introduced by Dr. Bull as a subject for discussion. 2. "Some Notes on British Puff-balls," by William Phillips, Esq., F.L.S., &c. 3. "On Polycistina, Ehr.," by the Rev. John E. Vize, M.A. 4. "Brefeld's Researches on the Ustilagineï," by Charles B. Plowright, F.L.S. 5. "On Pestalozzia, De Not.," by the Rev. John E. Vize, M.A. 6. "The Solution of a New Zealand Botanical Mystery," by Dr. Bull.

—— Salvia Greggii.—The habit, foliage, and general appearance of this new Salvia bear a strong resemblance to those of S. Grahamii. The leaves are small in both cases, but in the latter they are ovate and serrate, while in the former they are oblong, entire and narrowed at the base. The flowers are produced in simple or compound racemes, terminating not only the main axis, but all the numerous lateral branches by which a continual succession is maintained for many weeks in a greenhouse or cool conservatory during autumn and early winter. The corolla is of a clear, attractive deep rose colour, with the upper lip hairy and small, while the three-lobed lower one has the middle segment broad and reniform. The plant is figured in a recent number of the *Botanical Magazine*. It is a native of the mountains of northern Mexico, at an elevation of 10,000 feet, and must consequently be nearly hardy. A group of it in the greenhouse at Kew is noticeable for its slender, branching, leafy habit, and comparatively large attractive flowers.

—— Phylloxera Laws.—The kingdom of Greece is the last which has found it imperative in the interests of the vineyard culture—an important one indeed for the miniature monarchy—to forbid all trade with North and South America, Australia, Africa, the coast of Asia Minor, and the whole of Europe, with the exception of Holland, Belgium, Denmark, and the Scandinavian kingdom, in trees and plants of every kind, fresh fruits and their foliage, fruit juice, in natural or mixed state; flowering bulbs, and fresh fleshy roots of every description, Vine stakes which have been used in vineyards; and, lastly, hay in bundles. The regulation dates from July 5, 1885. As usual the restrictions are for the most part absurd and unnecessary.

—— Aponogeton fenestralis.—In popular estimation this has always been, and is likely to be, an interesting plant, judging from the number of visitors who make a point of seeing it when they visit Kew. This fact is further attested in several botanical works of note, such as the *Botanical Magazine*, t. 4894; *Flore des Serres*, xi., t. 1107—8; and Regel's *Gartenflora*, 1863, t. 387. Several plants have flowered at Kew this season, and one may still be seen in the fernery. This is evidence of its healthy condition, and speaks in favour of the cultural treatment it receives. The plants are plunged or immersed in a tub of water, the surface of which is always kept rippling by a gentle stream of water, conducted there by a syphon. Those who are acquainted with the Cape Pond-weed cannot fail to be struck with the similarity of the flowers of both, and notwithstanding the dissimilarity in the leaves of the two it is the only difference. The leaves of a Lattice-leaf plant have not formed the softer, parenchymatous tissue, so that the fibro-vascular tissue is developed like an open network. At one time it is said the natives used the farinaceous rootstock as an article of food, which is to be regretted, if still practised, as it would tend to exterminate a species, by no means plentiful.

—— Encephalartos Hildebrandtii.—Of the numerous species of Encephalartos cultivated under the proper name, or under that of Zamia, this is one of the more distinct. The leaves are pinnate, with lanceolate rather closely spiny serrate pinnæ, that become gradually smaller and shorter towards the base, till they are reduced to three spiny-toothed segments resembling little leaflets or pinnæ. This character, and that of the comparatively numerous spines on the pinnæ constitute the strongly distinctive features of this species when not in fruit. There is a handsome fruiting specimen amongst the unrivalled collection in the Palm-house at Kew bearing a number of cones of various sizes, but smaller than those of E. villosus, another allied species. E. Hildebrandtii is figured in the *Revue Horticole*, 1880, 456; and again in Regel's *Gartenflora*, 1877, p. 215. In the latter a whole plant, stem, and leaves, but without fruit, however, is represented. Even in this condition their Palm-like character should gain a wider acquaintance in the gardens of this country than they do at present. Many species of the Encephalartos could be conveniently housed where a large specimen of the more universally grown Cycas revolutas would be inadmissible on account of its spreading habit.

—— "The Arte of Gardening."—A correspondent writes:—

"At present I have in my possession a curious and interesting work of a still older date than the *Hortus Floridus*, viz., 1608. The titlepage announces it to be the 'Arte of Gardening, whereunto is added much necessarie matter, with a number of secrets; and the phisick helps belonging to each hearb, which are easily prepared. Hearunto is annexed two proper Treatises, the first intituled the marvailous goverment, propertie and benefite of bees, with the rare secrets of the honie and waxe: the other, the yearly conicitures verie necessary for hu-bandmen. To these is likewise joyned a tseatise of the arte of graffing and planting of trees. Gathered by Thomas Hill, Citizen of London. Imprinted by Edward Allde, London.' Besides the type matter it contained thirty-two pages of closely written manuscipt, and bound up with it is the *Scots Gardener*, in two parts, 'published for the climate of Scotland, by John Reid, gard'ner.' The first, by Thomas Hill, is dedicated to the Right Worshipfull Sir Henry Seames, Knight. In the preface we are told that, the ancient philosophers named the earth the mother of all plants and the manuring and dressing of it to be an exercise both virtuous and profitable, which the ancient Romans and diligent husbandmen did well observe, in that they from time to time did so painfully labour and diligently seek out the understanding and knowledge, not only of every kind of earth, but to dig, dung, orderly dress and cast into squ're and even beds every ground, and after the same they diligently learned the apt times which were most convenient to sow or plant in, according to the increase and decrease of the moone. When the seedes were thus orderly sowen and somewhat come up, then they thoroughly learned that the often weeding and watring of the young plantes did cause them the faster to come up. And in such places where the plantes grow thick together they, by their painfull industry learned to set them thinner, to the end they might the better increase and waxe bigger.' Then follows a description of how they diligently sought the best means to expell and destroy venemour and harmful beastes, worms, flyes, and such like. Amongst the helps against these enemies of the garden here is one against thick mists and frost:—'That if you bury the specked tode inclosed in a new earthen pot in the middle of your garden that the same defendeth it from the hurtful weather and tempests. Some also hang the eagle's feathers or the skin of the seacalf in the middle of the garden or in the four corners of the same as a prooved defence against tempests;' and mist and frost are to be banished by burning chaff, weeds or stubble in sundry places, so that the smoke may pass over the garden. It appears that the ladies of those days were more sensitive in regard to odour than those of the present day, for, at the conclusion of the cultural remarks on the Narcissus we read 'these flowers are greatly esteemed by many people for their strong sweet scent, though there be few ladies that can bear the smell of them,' &c."

—— Ealing, Acton, and Hanwell Horticultural Society.—On the 23d ult. the exhibitors at the exhibitions of the above Society, together with a large number of supporters, dined together at the Lyric Hall, Ealing, in celebration of the twenty-first anniversary of the Society, the first exhibition having taken place in 1865. The chair was taken by Mr. Richard Dean, who has filled the office of Hon. Secretary to the Society for the space of ten years; the Vice-Chairmen were Mr. George Cannon, of Messrs. C. Lee & Son; Mr. J. Roberts, Gunnersbury Park; and Mr. E. Chadwick, Hanger Hill House. An incident of a very agreeable character took place in the course of the evening by the presentation to Mr. R. Dean of a massive marble clock. The presentation was made by Mr. E. Fountain, The Elms Gardens, Hanger Hill. In addition, an illuminated address was presented to Mr. Dean, signed by sixty-seven subscribers.

—— M. Edouard Boissier.—We regret to state that M. Boissier, author of the *Flora Orientalis*, and one of the founders of the Jardin d'Acclimatation of Geneva, died suddenly last Friday, Sept. 25.

—— Frost in Devon.—Two degrees of frost on the morning of the 26th and 27th ult., and 6° on the 28th. This is the first time since 1874 that frost has occurred in the month of September. Marrows, Scarlet Runners, and French Beans, Dahlias, and Begonias, were blackened. The 29th was quite mild, with warm showers.

—— Gardening Appointments.—Mr. John Thomas, late Foreman at Petworth Park, Sussex, has been appointed Gardener to Lieut.-Colonel Harefield, Sunbury Court, Sunbury-on-Thames, Middlesex.—Mr. J. Ford, lately at Birdhurst, Croydon, as Head Gardener to Captain Elliot, Farnborough Park, Hants.—Mr. H. Forder, late Foreman at Park Place, Henley-on-Thames, has been appointed Head Gardener to Colonel W. Cornwallis West, Ruthin Castle, North Wales.—Mr. Walter Evans, late Gardener to F. Pine, Esq., Maidstone, as Head Gardener to J. A. Taylor, Esq., Sirensham Court, Tewkesbury.

## CLEISTOGAMOUS FLOWERS OF HOYA.

Whilst on the subject of Hoya and Asclepiads, I must make a protest against a repetition of the statement that the genus Hoya is to be numbered among the genera known to produce cleistogamous flowers (flowers close fertilised in the bud before expansion); but I believe the statement to be based upon a misconception or imperfect observation. I have never seen a cleistogamous flower upon any Asclepiadaceous plant, and it is a group I have paid much attention to, although I have seen what I believe have been mistaken for cleistogamous flowers upon Hoya and upon some species of Stapelia, Boucerosia, &c., and it merely amounts to this:—When a flower (perhaps the only one out of several in an umbel or cyme) has been fertilised, the corolla falls away and the calyx segments close up around the ovary, which is quite small, and in this state it will remain upon the plant for several weeks, or even months apparently unchanged. The pedicels of all the unfertilised flowers having long before fallen away, a person first observing it in this state, and afterwards noting that it developed fruit, would be very likely to think that the flower thus producing fruit was cleistogamous, since no corolla was seen; but had the so imagined cleistogamous flowers been examined, I believe no corolla, filaments, anthers, or pollen, would have been found inside them, nothing but the two carpels of the ovary. But for all this the case is interesting and very remarkable in this—that no rule appears to be followed, as I have had plants belonging to the Stapelia group flower and produce their fruit in the same season, that is to say, that after the corolla has fallen the carpels grow and swell out rapidly; but at other times the fertilised carpels remain dormant for a long time before they commence to grow out; and I have observed both cases to occur upon the same individual, namely, in a plant of Boucerosia europæa; one year it flowered and ripened its seed during the same autumn, another year the carpels of the fertilised flower remained perfectly dormant from about the middle of October until April of the following year, when they commenced to grow out, and the seed ripened in July or August. Why this is the case I am quite unable to guess; whether they do it under natural conditions or whether it is due to the treatment they receive under cultivation I cannot say. I treat my plants all alike so far as I can tell, but still it by no means follows that the conditions are always nearly the same, I will not say absolutely the same, for that is an impossible thing to arrive at, and there may have been some slight difference in the arrangement of the soil, causing it to hold more water one year than another, and so cause the carpels to develope or become arrested as the case may be; there was no difference in the soil itself, as I do not repot my Stapelias for several years together. *N. E. Brown, Herbarium, Kew.*

## FERTILISATION OF HOYAS AND OTHER ASCLEPIADS.

On p. 374 Mr. W. G. Smith repeats the somewhat erroneous statement he gave in 1882 in these columns (see vol. xvii., p 570) as to the manner in which these plants are fertilised. The "glutinous disc" to which he refers is not really glutinous, but is of a horny consistence, quite smooth, and very highly polished, but not in the least sticky. The manner in which the pollen masses are extracted is as follows:—The "glutinous disc," or "gland" of some authors, I prefer to term a corpuscle, since it is not a gland in any sense of the word, but is itself a horny secretion from the upper part of the stigma; there are five of these corpuscles in each flower, one to each stigma, for the Asclepiads present the great, and, so far as I know, unique anomaly, of having five stigmas and but two carpels! The stigmas are situated at the five angles of the gynostegium between the anthers, but are only visible externally in the shape of a very narrow fissure, which is wider and open at the bottom, the true stigmatic surface being at the inner and upper part of a cavity behind this fissure; at the top of the fissure, and continuous with it, is seated the corpuscle, smooth, shiny, and dark brown or black in colour. This corpuscle is rather a curious piece of apparatus; if it is carefully examined under a microscope and transverse sections of it made, it will be found to be hollow, with the cavity open at the base, closed above perfectly, and in front imperfectly, by the closely applied acute edges; where the edges meet they form a distinct fissure down the front of the corpuscle, and at the base the fissure widens out like an inverted V; of course all this is very minute, and scarcely, if at all, visible with the naked eye. Under a high power of the microscope a transverse section of the corpuscle exhibits a stratified appearance, which is due to the secretion of successive layers of the substance of which the corpuscle is formed.

The manner in which the corpuscle acts in entrapping flies, &c., and in causing them to withdraw the pollen masses is in this way. The fissure of the corpuscle (when this is in its proper position in the flower) is directly continuous with the fissure that leads to the stigmatic cavity, which fissure, as I have above stated, is widened out at the base. Flies, bees, &c., when crawling about the flower in search of nectar frequently manage to get their legs, antennæ, or proboscis in the widened opening of the fissure leading to the stigmatic cavity, and when they endeavour to move, and the movement is in an upward direction, as would be generally the case, the leg or other organ would be drawn up the rapidly narrowing opening, and be caught by the closely contiguous elastic edges of the stigmatic cavity, and although clasped pretty tightly the edges are so smooth that the insect easily drags the imprisoned part up to the top of the fissure, and thence into the fissure of the corpuscle, but once caught by this organ it is not so easy, and usually impossible, for the insect to get free, for, besides being more rigidly elastic, it is absolutely closed at the top, so that the part caught could not slip upwards, and so come out free; therefore the insect pulls the corpuscle away from its slight attachment to the stigmatic fissure, and with it the pair of pollen masses which are attached to its sides by shorter or longer caudicles. When pulled out from the anther-cells the pollen masses undergo slight movements, sometimes springing together, sometimes becoming slightly more divergent, and generally a slight amount of twisting also takes place; these movements are due to the rapid drying of the caudicles when exposed to the air. Sometimes, as stated by Mr. Smith, besides being held by the corpuscle, the leg or other part of the insect is embraced by the caudicles of the pollen masses, but this, according to my experience, happens but rarely. Should the corpuscle be more firmly attached than usual to the stigmatic fissure, and should the insect not be sufficiently strong to overcome the adhesion, it is either held there until it dies or only escapes by the loss of the whole or part of the captured limb.

I have witnessed both instances. On one occasion a small fly was caught by its foot and was not strong enough to pull the corpuscle from its place, and it kept twisting round and round until it escaped minus the whole of its tarsal joints which were left held in the cleft of the corpuscle. Although the pollen masses are most frequently extracted by means of the legs of insects I have seen them withdrawn by the proboscis, antennæ, and by single hairs upon the insect.

Having withdrawn the pollen masses, in order to secure fertilisation they must be placed in contact with the stigmatic surface, which, as previously explained, lies at the upper and inner part of the stigmatic cavity; this is easily managed. An insect crawling about a flower with one or more pollen masses attached to him, is pretty certain to get in such a position whilst doing so that one, or even a pair of pollen masses is placed in or at the mouth of the stigmatic cavity (that is, where the fissure widens out at its lower end), and the least movement on the part of the insect in the right direction causes them to slip in the cavity, and so smooth are they that they do this with great rapidity and suddenness; when once in, the same process goes on as in the manner of their original extraction, only in this case it usually happens that it is the caudicle of the pollen mass that is caught in the fissure, and in pulling itself away the insect forces the pollen mass as far up the stigmatic cavity as it can go, and then the caudicle breaks off, sometimes, though rarely, at the end attached to the corpuscle, but generally it separates at its attachment with the pollen mass, and then, often, the caudicle is dragged up the stigmatic fissure until it reaches and enters the cleft in the corpuscle seated at the top of it, and then another pair of pollen masses are extracted in the same way as the original pair were by the leg or other part of the insect. Sometimes a series of several corpuscles and caudicles attached to one another are found fixed upon an insect's leg, the caudicle of one pollen mass (after fertilising the flower by dragging the pollen mass into the stigmatic cavity) serving to withdraw another pair of pollen masses, the caudicles of which in their turn may repeat the process.

For a full and complete account the structure, development, and fertilisation of an Asclepiad flower, I would refer those interested in the matter to the late Mr. Corry's paper upon the subject, published in a recent part of the *Transactions of the Linnean Society*. It was somewhat remarkable that Mr. Corry and myself should, unknown to each other, have been working at the same subject at the same time, and have arrived at almost exactly the same conclusions, the ground gone over by each of us being nearly the same, except that I worked chiefly with the genus Stapelia and its allies, although also with Asclepias and other genera, whilst Mr. Corry dealt almost entirely with Asclepias; he also paid attention to the results of self and cross-fertilisation, which I did not do. *N. E. Brown.*

## THE ORCHID HOUSE.

### COOL ORCHIDS.

The weather has been cold for the last few days, and we have, in consequence, removed from this house to the Cattleya-house all the plants that have to be wintered there. I find the different form or position of the cool-house has much to do with its adaptability to preserve certain species of Orchids during the winter. For instance, when I had to grow the cool Orchids in a span-roofed house well exposed to the sun, many species did well there, which fail to pass the winter in good condition in our new house, which is a lean-to and facing north. Odontoglossum cirrosum, for instance, was always satisfactory in the span-roof, but it will not do at all in the lean-to with the same minimum temperature; half our plants were tried in the Cattleya-house last year, and the others in the cool-house. They did so much better with the Cattleyas, that we have this year removed them all there, where they occupy a position on the north side with O. vexillarium. O. cirrosum has more than doubled in price during the last year or two, it is doubtless not so plentiful as it was; I know that some growers have lost plants by keeping it in the cool-house through the winter. Ada aurantiaca has also been placed in the Cattleya-house. The white Masdevallia, M. tovarensis, has also had reserved for it a sunny position in the Cattleya-house; the plants are growing with great vigour. This pretty little species was rather over-rated, when it was scarce, and consequently expensive, but it is very useful to produce pure white blooms at mid-winter—a property that will prevent it being neglected. The space occupied by these plants has been filled up by giving the more hardy Odontoglossums, &c., more room, and this was a good chance to thoroughly clean the woodwork, and also the plants themselves. Red-spider has to be kept down by sponging, so also has greenfly. The latter is very troublesome indeed, in the cool-house. It clusters round the young growths as soon as they start from the base of the old bulbs, it also attacks the flower-spikes as they issue from the axils of the leaves. I do not know any better way to destroy them than by dipping the whole plant in tobacco, or soft-soapy water, or by using a brush dipped in the water to brush them off. I seldom go through the house without destroying several colonies of them with the fingers. Of course, after a thorough look over, as the plants are receiving now, they will not want any further attention for some time. If any plants require repotting, this should be done at once. I would rather pot cool Orchids, even at unseasonable times, than that they should get into bad condition by not being repotted. On this subject there is much difference of opinion. I have potted Masdevallias and Odontoglossums in every month in the year, and have been successful at all periods. Some good growers have stated that they ought not to be repotted during the summer months, but I have repotted hundred of plants during the months of June and July, and they have succeeded equally well with those repotted in spring or in autumn. Some persons may fancy that the hot dry days of June and July are so exhausting to cool Orchids that to disturb their roots at that time may do grievous harm, but that it is not so.

Cultivators of cool Orchids will have observed that slugs are rather fastidious in their tastes, and that they prefer the succulent young spikes of Oncidium macranthum to anything else. The plan we have adopted now with these Oncids is to fill a saucer with water, invert a pot in the water, and place the pot containing this Oncidium on the inverted pot. It is necessary to watch the plants narrowly for a few weeks at first to see that no slugs have been imprisoned in the fortress, as they cannot pass the moat either way. I fancy slugs are more voracious at this season than they are at any other time. It is, therefore, a necessary part of the cultivators's work to look for them every night with a good lamp. At present the temperature of this house ought not to fall below 50°. *J. Douglas.*

## TREES AND SHRUBS.

### RHUS COTINUS.

It is singular that this old plant should have so little attention paid to it at the present time, for certainly it is one of the most striking and beautiful shrubs in cultivation. It is perfectly hardy, and grows in almost any kind of soil. The flowers come out at the end of the branches, upon long hair-like footstalks, which divide and branch into large hair-like bunches of a purplish colour, whence the name of Wig Plant. These appear towards autumn, and are very striking when the sun is setting. I saw a fine specimen lately in the grounds of Benningborough Hall; since then I have seen several specimens in the beautiful and interesting grounds of Escrick Park, the residence of Lord Wenlock. I think nurserymen might do something in the way of increasing the spread of this and many other beautiful old plants. They are easily increased by cuttings, also by layers. *M. Saul, Holgate, York.*

### PICEA MORINDA.

In your description of this most ornamental of all the Spruces there is hardly sufficient prominence given to its pendulous character. It is not only curved in a downward direction, but droops, or weeps, as the enclosed shoots will show. Of course a good deal depends on soil and situation; but the long slender shoots, drooping back at right angles to the ground, without any curve, gives this tree such a drooping appearance that I have long designated it the Weeping Spruce. The cone illustrated on p. 393 is unusually even and regular for this Spruce. The majority of them are more or less irregular, as if a ligature of varying width were irregularly run round the cones. I enclose you several showing this tendency to uneven development. Can the rosin so plentiful on most of them be the cause of this? No doubt its sticky character resists growth to some extent; and possibly this, with its unequal diffusion, may be the cause of the unequal growth of different portions of the cone. I am pleased to endorse

all you say about the usefulness for ornament and the rapid growth of this Spruce. The effects of the light green shoots in the early spring described by you are so striking that this Spruce has also been called Candelabra Tree.

UNUSUAL FREE GROWTH OF CONIFERS THIS SEASON.

The dry cool summer now drawing to a close seems to have been favourable to the growth of most Conifers. Most of our trees have made larger growth and look more robust and verdant than usual. This applies to Firs, Spruce, Cedars, Silver Firs, &c. Different species or varieties of these have all done remarkably well, and several of them have produced unusually good crops of cones. This is especially the case with Abies Douglasii, Morinda, Abies Pinsapo and cephalonica, and the Atlantic and Lebanon Cedars. The cones, however, are not only abnormally numerous, but late, so much so that it seems doubtful if they will ripen. The Araucaria has also coned, but, as usual in the absence of male bloom, the seeds are useless. The abnormally free growth of the Conifers can hardly be the result of the dry season, as we mostly think the rainfall of East Anglia all too little for them; it is more likely to have resulted from the coolness of the past summer; as the trees are more verdant than usual, part of this no doubt arises from the length and vigour of the shoots. Such fine Pines as excelsa, Sabiniana, and macrocarpa have more of a semi-glaucous hue than usual, while the Atlantic variety of the Cedar is almost blue. *D. T. Fish.*

RHAPHITHAMNUS CYANOCARPUS.

In most works this plant will be found under its old but incorrect name of Citharexylon cyanocarpum. It is an interesting and pretty Chilian evergreen shrub with small Myrtle-like leaves, spiny branches, and tubular blueish flowers, which are succeeded by blue fruits about the size of a Pea, which are very ornamental. It has long been grown in the winter garden at Kew, planted out in one of the beds. The following account, however, is of a plant in the open air in the beautiful garden of Mr. Rashleigh, at Menabilly, in Cornwall. Beautiful flowering specimens were sent us for naming, and an enquiry elicited the following information :—"The plant is growing outdoors, and flowering freely. It is 11 feet high, and 7 feet in diameter at 3 feet from the ground, one of the branches being 8 inches in circumference. It produces a nice effect; is growing on a slope about 200 feet above sea-level, in a deep loamy soil, very much exposed to the north, east, and west winds. One of the greatest enemies we have here to vegetation is the wind, and this plant gets a fair share of it." A figure of this pretty shrub, drawn from Mr. Rashleigh's specimens, will appear in the *Botanical Magazine*. *G. N.*

# THE PROPAGATOR.

## THE PROPAGATION OF BEDDING PLANTS.

(Continued from p. 373.)

CALCEOLARIAS.—At this time of the year a general batch of Calceolaria cuttings of the kinds required for bedding next year should be made. When taking the cuttings the gross pieces should be passed over, and a selection made of the side-shoots of intermediate growth. The cuttings may be from 2 to 3 inches long, but each one must be made just below a leaf-joint. To keep the cutting firm in the pot it will only be necessary to cut off the two bottom leaves before dibbling in. About sixteen cuttings can be dibbled around the edge of a 24-pot, and eight in the middle. The holes made by dibbling should be filled up with dry sand.

After watering the cuttings they should be placed on a good ash bottom in a close cold frame. Here they must be sprinkled with a fine-rose pot morning and afternoon, and for ventilation the lights should be pushed down or raised from the back for an inch for an hour in the morning. They should also be shaded on sunny days, and every night a mat should be thrown across the frame. When the plants have well rooted the sprinkling overhead should be discontinued, it being then only necessary to water them as they become dry. All dead leaves should be removed, to prevent them damping other leaves near them. As the nights become frosty the frames must be protected with mats or other material.

Some few years ago it was noticed that Calceolarias were not much used for bedding in our parks and gardens. It was because the plants had died off, and marred the general beauty of the beds. This can, however, be prevented. In the first place spring-rooted cuttings must never be used for bedding purposes; if they are used the majority of them will die off after they have thrown up their first bits of flower. The proper plants to use are autumn-struck cuttings which have had the tops twice pinched out while in the cutting-pots. And these should not be taken out of the store pots and potted into other pots until about six weeks before they are bedded out. The roots must not be allowed to become pot-bound, because if they are in that state when knocked out of the pots the fleshy points of the roots will stick to the sides of the pots, and consequently it frequently happens that such plants when bedded out perhaps flower a little, but soon, and suddenly, wither and die.

The Calceolaria beds should be watered twice or three times a week in dry weather. They should not merely be sprinkled with a rose-pot, but should be well watered with a spout-pot.

Greenfly very frequently attack and spoil the plants in the frame if steps are not taken to prevent their ravages by lightly smoking them once a week.

The soil for the cuttings should be composed of loam, leaf-mould, and sand, well mixed together, and sifted through a ¼-inch sieve. The cutting-pots, which should be of 24-size, should be filled with this soil to within a ¼-inch of the top, and after the soil has been firmly pressed down the remaining space should be filled with a layer of sand. The soil should be well watered before the cuttings are dibbled in.

Some prefer to make up a cutting-bed for the Calceolarias in a cold frame, but when cuttings are rooted in pots they are perhaps more easily managed, particularly if only a small quantity be required. *T. O'B.*

## BEAN WEEVIL.

HAVING received, in the early part of the present year, a packet of seed Beans, a large portion of which



1 2 BEAN BEAN.

were infested by Bruchus rufimanus (fig. 94), I determined to sow a quantity of the damaged seed in order to ascertain the true extent of the mischief wrought by the beetles. I therefore selected twenty Beans, three of which had each been perforated by three weevils, five by two, and twelve by one only, and sowed them under the most favourable conditions for their growth and general welfare. In about a fortnight the young plants appeared, seemingly in no way the worse for the injury received by the seed. The growth was strong and vigorous, and the condition of the plants all that could be desired. When the time for fruition came round, however, a great change took place. The blossoms were scanty and small, the foliage faded and withered, and in several cases the plants died off without producing a single pod.

The first three plants, or those raised from seed pierced by three weevils, were naturally the least productive. One of these was altogether barren, while the remaining two bore but three pods between them, none of which arrived at perfection. The next five, grown from seed tenanted by two beetles only, were slightly more fruitful, bearing in all six pods, of which five reached their full growth. Two of these five plants, however, were barren. Upon the remaining twelve, the seed of which had but one perforation, I counted twenty-three pods, not more than ten of which arrived at maturity. Only one plant of this latter group was entirely unfruitful. It will thus be seen that the twenty plants bore among them but thirty-two pods in all, of which less than one-half came to perfection. The Bean in question, I should mention, was not one of the most freely-bearing varieties, six pods being the average yield of each plant. The difference, however, between the produce of the infested seed and of that sown at the same time, which was free from the weevil, proved beyond question that the presence of the beetle is highly prejudicial, not to the germinating qualities of the seed, which appear to be uninjured, but to the reproductive capabilities of the adult plant.

A striking feature in connection with the above experiment was that the plants raised from weevilled seed, with one single exception, altogether escaped the attacks of Aphis rumicis, from which scarcely another plant in the garden was free. From this I infer that the sap of the weakened plants was of too deteriorated a character to satisfy the fastidious tastes of the "colliers." *Theodore Wood, Freeman Lodge, St. Peter's, Kent, Aug. 21, in "Entomologists' Monthly Magazine."*

## PRIMULA FARINOSA.

FOR our illustration of this little gem (fig. 95) we are indebted to Mr. Scott Wilson. It is found on our Scottish mountains, as well as in Switzerland, and generally in deep, rich, moist soil, fully exposed to the light. The flowers are of a pale lilac colour, with the mouth of the tube forming a yellow eye. It grows well in boggy soil.

## FRUIT NOTES.

MUSCAT CHAMPION GRAPE.—This Grape is undeservedly neglected. The class for it at the recent Grape show at South Kensington was the only one that failed to attract exhibitors. The colour of the berries is to many an objection. Well finished bunches, however, often have the colour of tawny port; a colour not to be despised. The report is abroad that it is a difficult Grape to cultivate. It is extraordinary, considering how little the Grape is grown, how this calumny has been remembered. Muscat Champion will succeed with the same treatment as Hamburghs, and the two Grapes can be grown side by side. So far from being fastidious, I have seen fine bunches well coloured taken from the back wall of a vinery. Exhibitors fight shy of it, but it is quite within the bounds of possibility to produce largish bunches with as plump berries as those of good Gros Colmar and, as aforesaid, to deepen the colour of the epidermis. The flavour, however, is the reason why all should grow it. The raiser declared it to be a hybrid between Muscat of Alexandria and the Black Hamburgh. The flavouring, as well as the colour, bears out his statement, the large fleshy berries being richly charged with a delicate Muscat taste; in fact, the flavour is a mean between the flavours of the two parents. An old saying is, that God Almighty might have made a better fruit than the Strawberry, but it is certain that He has never done so; I humbly submit that man will find it difficult to get a better flavoured Grape than Muscat Champion. *C. A. M. C.*

PEAR BEURRÉ DE L'ASSOMPTION.

Herewith I send you fruits of this Pear, which in appearance and fine quality are of the first order, and could your readers see the splendid cordon tree it makes, and how freely it bears every year, they would, I am sure, also give it additional marks of excellence. I think it superior to Williams' Bon Chrétien, because it bears as well, keeps longer, and has not the musky or perfumed aroma of that variety, but is just as melting, with a flavour near akin to that of a good Marie Louise. In the new edition of his *Fruit Manual* Dr. Hogg quotes Mr. R. D. Blackmore as saying in reference to this Pear, "It is clumsy and ugly, has a bad habit of growth, and worse texture." My experience of it is of the very opposite description to this. *W. Wildsmith.*

GOLDEN NOBLE AND WALTHAM ABBEY SEEDLING APPLES.

I notice in the schedule of the Royal Horticultural Society, that at their exhibition to be held on the 13th and 14th inst., the above two Apples are classed as one and the same thing. Dr. Hogg, in his *Fruit Manual*, the greatest authority we have on Apples, describes them as distinct. I have Waltham Abbey Seedling, supplied to me by a leading nursery firm, corresponding entirely with the description in the *Fruit Manual*. Golden Noble I have many trees of. The two varieties are very distinct, and easily distinguished by any one with the least power of drawing comparisons. If Dr. Hogg in his *Fruit*

*Manual* is correct, why does the Horticultural Society class them as synonymous? And if the latter is right, then Dr. Hogg's researches are all wrong, and what is his Waltham Abbey Seedling? *P.*

Peach Konigin Olga.

This, one of the finest of the yellow-fleshed Peaches, is a seedling from P. Willermoz, obtained at the Pomological School at Reutlingen. Herr Rosenthal, of Vienna, says that it is an early variety, cannot be beaten for size and beauty, and must be considered a valuable addition to fruits. It possesses yellow flesh, somewhat reddish surrounding the stone, which is non-clinging. *Garten Zeitung.*

## PROLIFERATION OF FERNS.

(*Continued from p. 305.*)

Having described the different forms which proliferation in Ferns manifests, and its methods of adaptation to the conditions under which in plants of varied or diverse habit it is produced, whereby it effects success as a reproductive agency under each condition; and having also detailed some of the more prominent of the circumstances that clearly direct and define its distribution through the family, let us now see if any light can be thrown on the problems which occur to all observers as to its origin and utility. First in order is the question of its origin, and the nature of the cause, or causes, which first brought it about, and that maintain it. Possibly no direct and altogether conclusive reply can be given to this or any of the subsequent questions that will arise for whatever view the observer may take, he recognises at the same time certain other facts, varying in importance, which tend more or less to modify his conclusions.

It cannot be said that a feature which is so largely manifested in the order is abnormal, yet it is not a characteristic of the great majority of Ferns, and therefore not of the most truly normal state. Is it then a merely adventitious condition, the result of, say, constitution, situation of growth, surroundings, or other fortuitous circumstances of plant existence? If so, why does it appear in one species and not in another, which are growing side by side, and which often are closely allied, or more in one natural assemblage of species than in another? Why have Asplenia, for instance, as we have seen, developed a largely preponderating share of this feature over other genera or tribes? Any identity of relation or alliance of any character, with generic or tribal distinctions is not obvious, and the variations of physiognomy and constitutional disposition or tendency are generally the same, in both proliferous and non-proliferous species. Though the nature of the agencies operating in some of their phases of the question is, it must be confessed, obscure; in others the conditions of the environment, which, when of a character favourable to the result, obviously exercise potent and stimulating influence, point to a probable and rational explantion of the phenomenon. Of these conditions of the environment which potently affect the result, the chief is the degree and constancy of humidity. At the same time it must be remembered that we do not know enough of either the life history or the character, morphological and constitutional, of each species to determine clearly the questions affecting the operation of this influence; for it is to life history and general character that the varying state of the presence and degree of proliferation in plants connected by conditions common to all or by family affinity, must be ascribed. It is now generally admitted that the species which inhabit the earth at present are not all of equal antiquity, that though the majority may perhaps be in varying degree very remote in birth, the origin of many is relatively recent, while some are comparatively modern. Of this modern origin we are, or may if we choose, be ourselves witnesses, for in field, forest, and by wayside there is the evidence, open to all who observe and compare, and in some cases it is so obtrusive as to be recognised by the least observant or enquiring. What we call forms, varieties, and subspecies, are arbitrarily determined points in the slow progress from one state to another. In other cases, instead of this very gradual process of change or modification of form and general character, extending over several or many generations, the same result is effected abruptly by generation at birth, and thus unobserved. Fortuitous circumstances throw distantly related species together, when occasionally a nuptial alliance occurs, and the relationship is proved by a new species resulting from the union. Such, when we are the authors of, or know their history, we designate hybrids, and refuse specific rank to, but doubtless they sometimes originate spontaneously in Nature, and take their rank unsuspected and unquestioned by us. Therefore, in accepting the apparent proof that proliferation is indirectly due to atmospheric moisture, the difficulty encountered of two species alike in character and in their physical surroundings, in which the feature is manifest in one case and not in the other, may be with some probability explained by a possible difference in their age, which has allowed its development in the one and not in the other, because of the shorter period of time which has elapsed. But the period of origin is not the only question that might affect the issue. Change of physical surroundings would be equally potent, providing they were complete and durable as regards their influence on any particular species. Of this I shall describe a case presently where, probably from physical change over a large area, all the members of a single species occupying that area have become proliferous, while those beyond it remain still normal.



Fig. 95.—Primula farinosa. (see p. 436.)

Of the other conditions to which I have alluded that also in some important degree affect the issue, we have indeed indications, but their nature and mode of operating are, as I have before said very obscure. We recognise, for instance, from observation that plants which are remembered by certain features in habit of growth, structure, substance, physiognomy, &c., do not manifest proliferation, while plants with certain other features do so; and we conclude that there is a potent though hidden connection between these respective features and the absence or presence of the proliferate tendency. We observe also, as I have before described, that there is apparently a similar intimate connection between the possession and its possible utility to a species, for when the conditions of life and circumstances are such that it could obviously serve no useful purpose as a reproductive agency, as in the epiphytal division, it is not present. Should any reader feel disposed to protest I will at once relieve him by saying that I have no desire to press unduly this debatable point of a case of perfect adaptation to end or object, which, though it looks so exceedingly plausible, is perhaps more apparent than real, and is possibly due to other circumstances, among which not the least may be the greatly reduced degree and influence of atmospheric moisture in positions more or less distant from the surface of the ground. There is the fact, however, that, whatever be the reason, it does not occur, and that if it did occur the circumstances of growth are such that it would be absolutely wasted energy. But what I have said now is nearly all we know of the more subtle and complex agencies which, pertaining to individuals or to communities, either associated by race or by conditions of life, affect the issue of this question. These remarks apply chiefly to the first origin of proliferation and the agencies under which it came into existence in any particular instance. When once established, of course it was transmitted from one generation to another, and maintained, as other possessions are, by hereditary transmission.

With regard now to the influence exercised by humidity as an agency in producing and maintaining proliferation. Unquestionably proliferation is greatly fostered by the presence, and is in evident relation to the degree, of moisture, for where this condition most prevails in the natural habitats of Ferns there, in the species possessing those characters which it alone accompanies, it is most frequent and presents its freest development. It is more common in wet than in dry situations, and as affecting the degree of humidity, under forest shade than in full exposure to sun, in close dells and ravines than on more airy and exposed ground, near streams and brooks than beyond their influence, on the ground, than aloft on rocks and trees, at high altitudes than low; and, lastly, more frequent on islands than on continents with equal range of elevation; though in all these cases the result is qualified by the other circumstances to which I have just now alluded.

Taking the different forms of proliferation, however, humidity is not necessary in the same degree, nor with the same constancy and uniformity of operation to all. That form of bud-proliferation which I have characterised as aërial is most dependent on its constancy and abundance. Nearly all the instances of this, and especially such as display the character most conspicuously, occur in deep forests or near streams, chiefly but not exclusively in cool mountain regions, where mists are constant and the vapours ascending from the warmer lower regions are condensed, saturating all vegetation with moisture. The radicant and also the few tuberous species often

inhabit more exposed places, where, of course, the agency is less potent and uniform under the greater power of evaporation there exercised by sun and air; but these classes, too, are mostly confined to the same generally moist regions. A further proof of the influence is afforded by the relatively meagre development of the feature in the same species when they happen to occupy a comparatively or unusually dry situation.

The feature in such situations does not disappear entirely; it would take probably many generations to return to a non-proliferous state again, but the tendency to proliferate is greatly diminished, and the development retarded under the less congenial conditions. Again, it might be expected, if this hypothesis be correct, that, all other conditions being equal, an insular flora would be more freely and abundantly proliferous than a continental one; and this appears to be the case, but the evidence I can adduce on this aspect of the subject is, from the nature of the circumstances, very limited. Of the two floras which I am sufficiently acquainted with to express a reliable opinion one is insular and the other continental. In both latitude, topography, character of vegetation, &c., make them favourable cases for comparison. In the insular flora the number of proliferous species is quite two-thirds greater than that in the continental in relation to the total number of species in each. The preponderance is still greater in the much fuller development and increased number of the individuals affected in the insular case. Of course one instance of comparison such as this cannot be accepted as proof of it being a general rule, but the partial knowledge I possess of other floras leads me to believe it probable that were these as well known they would support the instance I have cited. One can only be a judge of the extent of proliferation in a flora by a thorough personal acquaintance in their native habitats with the whole of the species of that flora, for botanical specimens very imperfectly exhibit the extent of the feature in the wild plants, and cultivated collections are so partial as to be even less reliable for the purpose of forming a correct opinion of the entire flora. The prevalence of this feature or the relation to area, elevation, or physical conditions, can only be judged by observation on the ground.

So far I have dealt with general considerations alone. I will now describe a specific instance, to which I have before alluded as possibly the result of some physical or topographical change in the region where it occurs. This case is, perhaps, more clearly in the line of proof and convincing of the close relationship existing between proliferation in Ferns and abundant atmospheric humidity. It derives its great significance from the fact that it is a case of variation of feature in the same species, the variation accompanying clearly defined topographical limits, to which are due the essential atmospheric conditions in this instance which I have already described as an indispensable necessary in any case of proliferation. Though illustrated on a scale of great magnitude and extreme and unusual definiteness, the case is a rare one, but is not absolutely singular, for I remember another, though less prominent and important, yet, too, within its smaller limits as strictly and emphatically supporting this theory. This is an instance of a species with a wide vertical range that is proliferous at high elevations and non-proliferous at low, the atmosphere of the former being generally, as I have shown, more copiously and constantly humid than that of the latter, except under special limited conditions.

The chief instance, however, to which from this digression I return, is afforded by the Guianas, extending thence, if one may judge by a couple of specimens among the large set of this species in the Kew herbarium, to Panama and Mexico. There (in Guiana) the common large-leaved Shield Fern, Aspidium macrophyllum, Sw., presents two distinct states —a terrestrial and aquatic. The former is strictly confined to dry well drained ground in forests and half-open places, such indeed as it usually occupies over its very wide American range, while the latter is as strictly confined to the banks of rivers in the alluvial region of the country, where it grows on the banks and stumps of trees, and on branches that dip into the water. This latter is one of the most prolificly proliferous of all proliferous Ferns. Yet these plants are simply two forms of a very slightly varying widely diffused species, which are so generally identical, botanically, that if the young plants be removed from the surface of the one where they present such a striking and comical feature in growth, there remains no difference in aspect or feature to distinguish one from the other.

I have discussed elsewhere* how possibly this aquatic form originated, and how its characteristic feature was in the course of time produced, and what purpose in the life-history and economy of the plant it may have served, all of which I will not repeat here. There can, however, be little, if any, doubt that the terrestrial Fern, which is nearly universal in eastern and central tropical and extra-tropical South America is the older form, and that the proliferous state is a branch from it which has originated under conditions which affected only the limited area to which this state is confined. As illustrating the agency and fostering influence of humidity on proliferation, I think this species, with its proliferous and non-proliferous states, must be regarded as an important confirmative instance. Here are two plants of an absolutely identical type, but growing under more or less opposite physical conditions. In that subject constantly to exceptionally abundant moisture proliferation has reached an extraordinary development; in the other, under reverse conditions, or conditions in which the influence is much less, no trace of it is found.

The inference that humidity is the chief agency of those we are conversant with in bringing about and maintaining this feature in the section of Ferns which from other circumstances are open or disposed to exhibit it, may from this case and the other evidence I have adduced be accepted as reasonable conclusions. It is only apparently in certain plants and under certain circumstances which pertain specially to these plants that proliferation is possible, but though the plants and these other circumstances be altogether most favourable for the result, without an abundant and more or less uniformly constant degree of atmospheric humidity it never appears.

*G. S. Jenman.*

*(To be continued.)*



## SELECTING AND PLANTING FRUIT TREES.

FRUIT trees, or rather the sorts, sadly need weeding out, as there are many in the lists that are not worth growing; and instead of planting so many varieties, as some do, merely for the purpose of having a collection, it would be far better to increase the numbers of the most valuable kinds, as the fruit would be satisfactory, and disappointment and vexation avoided when the trees came into bearing. In making a selection the right thing is to pick out, not only those of superior quality, but such as by ripening one after the other afford a long and continuous succession; and as I have just had this to do for a gentleman who is furnishing a new garden, I repeat the list here, thinking it may be of use to others engaged in the same kind of work:—

### SORTS.

*Apples.*—Taking these first, and in the order of their ripening, those I recommend for culinary purposes are, Lord Suffield, Keswick Codlin, Stirling Castle, Cellini, Cox's Pomona, Waltham Abbey Seedling, Lord Derby, Ecklinville Seedling, Mère de Ménage, Bedfordshire Foundling, Blenheim Pippin, Alfriston, Warner's King, Dumelow's Seedling, Sturmer Pippin. Dessert kinds: Kerry Pippin, Welford Park, King of the Pippins, Ribston Pippin, Cox's Orange Pippin, Fearn's Pippin, Court Pendulat.

*Apricots.*—Hemskirk, Moor Park.

*Cherries.*—Culinary: May Duke, Morello. Dessert: Governor Wood, Frogmore Bigarreau, Black Eagle Bigarreau, Elton, Black Tartarian.

*Currants.*—Black: Naples, Lee's Prolific. Red: Red Dutch, Victoria, Wilmot's. White: Wilmot's Grape, Dutch.

*Figs.*—Brown Turkey.

*Gooseberries.* — Green: Glanton Green, Gretna Green, Pitmaston Green Gage, Walnut. Red: Champagne, Crown Bob, Forester, Ironmonger, Rifleman, Wonderful, Warrington. White: Whitesmith, Antagonist, Bright Venus. Yellow: Champagne, Criterion.

*Grapes.* — For early vinery: Black Hamburgh Madresfield Court, Foster's Seedling, Muscat of Alexandria, Buckland Sweetwater. Late vinery: Muscat of Alexandria, White Tokay, Gros Maroc, Lady Downe's, Alicante.

*Nectarines.* — Lord Napier, Elruge, Hardwicke Seedling, Humboldt Pine-apple, Rivers' Orange.

*Peaches.* — Alexander, Alexandra Noblesse, Dr. Hogg, Royal George, Bellegarde, Stirling Castle, Grosse Mignonne, Sea Eagle, Barrington, Walburton Admirable.

*Pears.*—Jargonelle, Beurré Giffard, Williams' Bon Chrétien, Beurré Superfin, Brown Beurré, Compte de Lamy, Louise Bonne of Jersey, Marie Louise, Doyenné du Comice, General Todtleben, Glou Morçeau, Winter Nelis, Bergamot Esperen, Josephine de Malines, Knight's Monarch, Beurré Rance, B. Clairgeau.

*Plums.*—Culinary: Prince Englebert, Pond's Seedling, Victoria. Early and late: Washington, Fellemberg, Orleans. Dessert: Green Gage and Bryanstone Gage, Kirk's, Jefferson, Reine Claude de Bavay, Coe's Golden Drop.

*Raspberries.* — Fastolf, White Antwerp, Baumforth's Seedling, Merveille de Quatre Saison.

The above list comprises the cream, and though there may be others as good, there are few, if any, better among the whole lot.

Now as to planting. The sooner this operation is carried out the better; for the earlier the trees get planted after the shedding of the leaves the greater chance do they stand of becoming established and breaking strongly in the spring.

### PREPARING FOR THE PLANTS.

As it is essential for their welfare that the plants should not be kept long out of the ground, preparation should be made for their planting, that all may be in readiness when they arrive, the first thing to be thought of being fresh soil; for, though fruit trees may do very well in the natural earth in some gardens, a little new loam is a great help in giving them a good start at the first. What suits most of them best is the top spit from some old pasture, as turfy sods cut there, or from the roadside where there are waste spots, are full of fibre, and this, as it decomposes, is most agreeable food for the roots, which revel in it, and search the stuff through and through, assimilating all they can find.

### PLANTING THE TREES.

Many planters, and especially young beginners, have a way of digging holes only just large enough to take the trees, instead of which they should have plenty of room for the roots to be spread well out, and the deeper and wider the ground is broken up the more freedom will they have to ramify, and the better will it be for the plants.

If fresh soil is provided, and there is a sufficient quantity of it, a sort of raised mound should be formed in each hole for standing the trees on, and as soon as these are placed in position, at the right height, and the roots regulated and laid in their proper position, they may at once be covered with the same kind of material, the next thing being to give a heavy watering to settle it about them, and prevent the bark shrinking.

As soon as the planting is complete the ground immediately round the trees ought to be mulched with some half-rotten littery dung, which is not only necessary to keep out frost during the winter, but to conserve the heat and moisture, and maintain the soil in a uniform condition till fresh roots are formed.

### STAKING AND TYING.

The supporting of newly-planted trees is a very important matter, as wind-waviog, or any motion of their heads, is most injurious; for though they may oscillate only in a small degree the strain and movement below is great, the leverage causing a wrenching of the roots from one direction, and a pushing or doubling up in another, while the friction or chafing they undergo rubs off any young fibres emitted. This being so, the trees or bushes should be staked and tied securely directly they are planted, and those placed against a wall fastened in their position; but in doing this allowance must be made for any sinking, or the plants will be hung up by their branches.

### CUTTING BACK THE HEADS.

Cutting back the heads of young fruit trees is one

* See *Timehri* for 1884

of the most injurious practices ever committed, and cannot be too strongly condemned, as it serves no useful purpose whatever, on the contrary, it greatly retards the progress of the plant; without the heading in, any healthy tree, newly transplanted, will fill its allotted space, on wall or trellis, or become large and established, in a quarter the time it will after the head is lopped off. Instead of the hard pruning, then, to which they are usually subjected, they should have their branches laid in, or left of their full length, except in cases where they are too crowded or misplaced for training, when they may be taken out to give proper room to the others. By adopting this course, and disbudding at the proper time, so as to leave the young shoots in the right place, it is astonishing what rapid strides a young tree will make in a couple of years; as, while making top growth and leaves, the roots are extending in a corresponding ratio to the heads, and the trees quickly become strong and fruitful. *J. S.*

## Home Correspondence.

**National Pear Conference.**—I quite agree with your correspondent "H. C." in saying that something more should be expected from the forthcoming Conference on Pears than a printed catalogue, as was issued as the result of the Apple Congress in 1883. I was very disappointed over that matter, as the thousands of young gardeners who from a variety of causes could not attend at Chiswick, reaped no practical advantage from it whatever; and this I take it should be one of the chief objects of such meetings. My proposition accords with that of your correspondent. The book should be issued in say twenty parts at 1*s.* each, or bound complete at about one guinea, and it should have copious coloured plates. This would bring it within the reach of all, and the gathering would confer a lasting benefit upon all grades of the profession. If the Royal Horticultural Society cannot see its way clear to do this, surely there is some enterprising firm who would do so, and with advantage to itself. The fact that the committee desire exhibitors to procure any varieties of Pears from their districts, which may not necessarily be grown by themselves, should render the Conference all the more representative; and it would be a pity, nay a disgrace, if results were not obtained commensurate with the extent of the exhibition. I may mention that I have already had several collections placed at my disposal in this district, and I hope to hear that the same kindly feeling and interest is being taken in other parts of the country. *W. G. Pragnell, The Gardens, Sherborne Castle, Dorset.*

**Fertilisation of Arum crinitum.**—With reference to my previous notes regarding the above, I may add that, having noticed during the past season the part in which this Arum entraps insects, I felt curious to find out if possible something regarding its secret histoy, but more particularly why insects are entrapped, for although the spathe remains open but for two days, it is truly surprising the number of flies that are lured into the cup-shaped prison at the base of the spathe, and from which they can never return. The position of the spathe when fully developed is oval-shaped, with the sides slighly incurved, the lower portion being involute, or formed into a sort of cup, the entrance to which is much contracted and almost filled up by the spadix. Outside the spathe is beautifully marbled, while the interior is of a flesh-colour, and thickly beset with fine silky hairs, which are incurved or bent towards the basal portion of the spathe, apparently as if to offer the least possible resistance to the ingress of insects. When open the plant emits a strong smell of carrion so powerful that it may be distinctly perceived at nearly two yards distance. This offensive odour is highly attractive to insects, especially flies, which alight on the broad distal portion of the spathe and creep along to the narrow entrance, and down into the cup-shaped base, and from which, owing to the incurved hairs, they can never escape. At mid-day, on June 29 last, I counted ten flies enter this Arum in five minutes, and seldom were there a less number than seven flies on the distal portion of the spathe at the same time. On dissecting one of the flowers, after being open for two days, I counted no less than thirty-six large flies and several smaller ones, dead, within the cup-shaped base. What surprised me most, however, was, that the flies had produced their offspring there, for numbers of the grub were creeping about within the prison, but all that time they were of too small a size to effect an escape. The powerful odour of putrid meat given off by the plant has a purpose of its own by enticing and deceiving flies to enter the basal or convolute part, and where, after finding escape an impossibility, their ova are deposited amongst the hairs at and around the base of the spadix, where they soon hatch, and the young maggots in wriggling about bring the pollen in contact with the stigma, thus playing an important part in the economy of the flower. I at first wondered why the flies, instead of their progeny, did not fertilise the flower as I concluded they most naturally would do when buzzing about trying to effect an escape. But this is now quite plain, as I found that the pollen was then not in a fit state for applying to the stigma, and would not be until some time after the spathe had shrivelled up and the insects within were dead. By the time, however, that the offspring of the flies are able to move about both pollen and stigma are in a proper condition for fertilisation to take place. *A. D. Webster.*

**Rose W. F. Bennett.**—We send you two flowers of W. F. Bennett Rose, which, as we presume you are aware, was sent out through Messrs. W. Paul & Son, of Waltham Cross, as agent for Mr. Evans, of Philadelphia. *John Cowan.* [The blooms sent were pretty in bud, but were semi-double, but we should like to see many more flowers, grown under varied conditions of climate, soil and culture, before venturing to pronounce any decided opinion on it. Ed.]

**Fruiting Pines in Small Pots, &c., at Dalkeith.**—In looking through the extensive and well-kept gardens at Dalkeith Palace, near Edinburgh, early in September, I was as much surprised as pleased to see two or three houses full of fruiting Pines in 8-inch pots. The plants, which were within a few inches of the glass, were very dwarf and sturdy, and were each swelling and ripening fine well developed fruit, averaging about 6 lb., though many of them would probably turn the scale at 8 lb.—a fact which proves conclusively enough that the majority of Pines are grown in unnecessarily large pots, inasmuch as the fruits which Mr. M. Dunn, the courteous and much esteemed gardener-in-chief at Dalkeith, secures from his plants grown in the size pots indicated above are everything that could be desired. It goes without saying that plants grown in 8-inch pots must be well grown and liberally treated from start to finish, and that in order to swell such finely developed fruits as those mentioned liberal and frequent supplies of some powerful fertiliser must be given at the roots in a liquid state. Perhaps Mr. Dunn would kindly supply the readers of the *Gardeners' Chronicle* with information on this point, and also say if the plants are grown entirely in loam, as they appear to be, as by so doing I am sure he would confer a benefit on many Pine growers, including the writer. I need scarcely say that Grapes and other choice fruits, as well as plants, are also well grown at Dalkeith, and that in one and every department there is ample evidence of presiding skill and good management—good cultivation, cleanliness, and neatness being observed everywhere within the precincts of the gardens and grounds. In front of the principal range of vineries is a good batch of Strawberries in pots for forcing purposes, and which promise to give a good account of themselves in due time. The flower-beds on the beautiful lawn in front of Mr. Dunn's house were quite gay with a variety of flowering plants, which, the colours being judiciously arranged, were very effective. From this flower garden, which, I may say in passing, is as large as that in front of many a country mansion, steps descend to the principal broad walks, through kitchen gardens, &c., the borders on either side of which were enlivened with flowering plants, whilst Dahlias, &c., in a square of ground east of Mr. Dunn's house, made a grand display. The crops in the kitchen garden are in fine condition, a long border in front of a south wall being well stocked with sturdy young plants of Lettuce for lifting with the soil adhering to the roots and transplanting into cold pits on the approach of frost. In front of this border, on a piece of ground sloping well to the south and east, I think, are growing a most promising lot of young pyramidally-trained Apple trees of the most approved varieties, which are, like the larger trees in another quarter of the garden close by, bearing heavy crops of clean, kindly-looking fruits. Altogether there is quite a large but select collection of Apples grown at Dalkeith, and Mr. Dunn is quite familiar with the names and qualities of the individual varieties, as the remarks which he made in passing through this department afforded ample proof, if proof were necessary. *H. W. Ward, Longford Castle.*

"Hortus Floridus."—The copy of *Hortus Floridus*, reviewed on September 12, does not belong to Mr. Hartland, and never did—it belongs to me, and it has been in my family for several generations, but I lent it to Mr. Hartland, as he was anxious to look over it. I am happy to find by Mr. Krelage's extremely interesting communication in the issue o September 26, that my *Hortus Floridus* has only a very few plates wanting, and that it is the rarest of the editions of this excessively rare book. Truly this old volume is an eloquent lecture on the wonders which the persevering care of plants can accomplish; for instance, the eyeless yellow and purple garden Pansy of 1614 is just three-quarters of an inch in diameter. *Cecil C. Woods, Chiplee, Blackrock, Cork, Sept.* 28. [Our valued correspondent, Mr. F. W. Burbidge, in reviewing the book, omitted to mention, quite unintentionally doubtless, that the book was not Mr. B. Hartland's property, but that of our correspondent. Ed.]

—— My copy of the *Hortus Floridus*, mentioned on September 12, has bound up with it the work mentioned on September 19, and the number of plates of fruits and flowers in both is 167. I should be extremely glad to know how many plates of fruits and flowers the added work should have. *Cecil C. Woods.*

**Early and Late Outdoor Chrysanthemums for Cutting.**—I grow more than a thousand of these, planted as far as I can against south walls, more for the purpose of obliging my neighbours, for wreaths, bouquets, &c., than for any use I have for them myself. I have lately been through much of Ireland, and cannot help regretting how limited the outdoor culture of Chrysanthemums is; while every owner of a greenhouse feels bound to have them indoors, but they are very rarely used as cut bloom. Lovers of flowers, especially in towns, thus deprive themselves of a great floral treat, when they cannot be had elsewhere. Splendid blooms can be grown against a south wall. One of our largest and most successful growers was surprised at the promising wealth of bloom I showed him yesterday, much finer and earlier than those I have in pots. *W. J. Murphy, Clonmel.*

**Country Growers and Town Salesmen.**—Under the above heading appeared in your last issue a complaint from (I suppose) a country private grower of the treatment he received from a firm of Covent Garden salesmen after consigning to them a number of Artichokes. I consider this to be on a par with many similar complaints I have read in your paper. I can quite believe that the Artichokes were not sold, but left among the refuse of the market, seeing that the growers of that vegetable, who are comparatively few in number, and have, as may be supposed, a better chance of selling—for they have a regular supply right through the season—have this year wasted hundreds of dozens after taking them to market, and great quantities were wasted at home. Now as to prices. I can safely say that good Artichokes have not averaged 1*s.* per dozen through this season for those that were sold, and after the limited demand was supplied the remainder were unsaleable at any price. I cannot understand "C." when he says Artichokes are not perishable, as for the purpose of sale I do not know anything much more so. I am a market gardener, and have been attending Covent Garden selling my own goods for over twenty years. I have seen many of the consignments from private growers, and can conscientiously say that as a rule the vegetables are great rubbish. I often fancy that many country private growers imagine that London is very badly supplied with vegetables, and that the public are glad to take anything they are kind enough to send them, whereas I believe no town in England is so well supplied with good vegetables, both home-grown and foreign, which

latter are not always as stale as "C." imagines, as they usually arrive as fresh and in as good a condition as goods from the provinces, or better. Has "C." noticed that there is no wholesale vegetable price list in your paper? In conclusion, is it likely that salesmen who are dependent upon their senders for their living should act with such a suicidal policy as "C." and some others would have the public believe? *W. Poupart, Marsh Farm, Twickenham.*

**Wood-paper Cuffs.**—I saw about five years ago some very curious-looking cuffs for ladies' wear, which, I was told, were made from the bark of trees; they were a trifle thicker than the white cuffs made of paper, and a very pretty light tan colour, perfectly smooth, like satin, and on the centre of each cuff there was a small bunch of very tiny blue Harebells nicely painted. I do not know whether they were of foreign or English manufacture, but they looked to me as more like some preparation of wood shavings than bark. *Helen Watney.*

**Crocus speciosus.**—This is well named "the showy autumn Crocus." It has been termed the fines of the autumn-flowering types, and it is deservedly styled so. Just now it is throwing up its large and rich bluish-lilac flowers, lined with dark purple, in the open ground. A clump of this beauty is just now throwing up its blossoms through a covering of Mignonette growing on the surface, which is just the thing for it, as it serves to support the blossoms, keeping them upright, and so showing them off to the best advantage; when without such aid the stems appear too weak to bear the flowers stedfastly upright, and a gust of wind lays them low on the soil. It is best to plant it deeply in some rich soil in a spot where it can remain permanently, and so be undisturbed, and flower in the autumn. It is a leafless flower, which pushes suddenly, and is seen in all its beauty under the brightness of the autumn sun. And yet in how few gardens can it be met with. *A. D.*

**The Nurserymen's Mutual Hailstorm Insurance Society.**—Allow me, through the medium of your paper, to bring before your readers a matter which will greatly affect their interests. It is well known that during the last few years nurserymen and market gardeners have invested a large amount of capital in the erection of glasshouses, and owing to the heavy cost of insurance, much of this is uninsured against the danger of hailstorms. I am prepared with a scheme whereby every *bonâ fide* market grower may insure his glass at 5*s.* per cent. per annum. (The usual charge for 21 oz. glass is 20*s.* per cent. per annum.) Not only may the ordinary risk of breakage by hailstorms be met by the premium I have stated, but if taken up heartily by trade growers generally throughout the country, at the end of every five years a handsome bonus may be given to every policyholder, and thus almost, if not quite, affording the security of insurance free of cost. I base these statements on the average injury to glasshouses in this country by hailstorms during the past twenty years. I have the details for working the society, but to avoid trespassing on your space will mention only a few leading features in the management. Each district shall have a local committee, themselves growers, who shall receive applications, inspect the houses proposed, and report to a central committee of growers in London, who will occasionally sit to transact such business as may arise. There shall be no paid agents, or commissions on money received. All work done by committees shall be honorary, which will require only a few hours in each year. All money belonging to the Society to be invested in Consols, and when about £5000 or £6000 have accumulated the interest will cover all working expenses. I know a gentleman well connected, and having considerable commercial experience, who is ready to act as secretary. I may state that I have no personal interest in this matter, more than any other grower who may ensure his glasshouses. I have stated my views to several of the leading market growers around London, who highly approve of them, being convinced of their soundness, practicability, and advantage to the trade, and with me are most anxious to have the society started forthwith. But as I cannot converse with many who are trade growers, I ask, as an initial step, that all the readers of the *Gardeners' Chronicle* who are trade growers, and are favourable to this mutual insurance scheme, will write a letter to me personally, that I may be able to judge of the amount of interest likely to be enlisted. *Geo. Beer, Chesswood Gardens, Worthing, Sussex.*

**Tokay and Foster's Seedling Grapes.**—I have read your remarks about the Foster's Seedling and Tokay Grapes at South Kensington, and, with all due deference to your opinion, I must beg to differ with you, for I do not think Mr. Allan's Grape the same as my Tokay. As I remember it, it was a longer, more even berry, not so round and lumpy as Tokay. I am sorry Mr. Allan could not send you berries of his to compare with mine. I remember when gardener at Astle Park, Cheshire, grafting Foster's Seedling on the Black Hamburgh; and, so far as I can remember, it had very much the appearance of those shown by Mr. Allan. I hope, all being well, to compare berries with him next year. You also say mine were identical with those shown as White Tokay. They are the same as those awarded the 2d prize, shown by Mr. Hollingworth, but not the same, in my opinion, as those shown by Mr. Roberts, and to which the 1st prize was awarded. I told Mr. Roberts at the time that his were not Tokay. I never saw Tokay which approached the colour his were, and they were a different shaped berry. Had I been judging I should have disqualified them, and had I exhibited mine I should have protested against them. However, I shall ask Mr. Roberts to send berries and foliage of his variety to the next committee meeting at South Kensington, and I will do the same, as I think it much the best way of clearing these doubtful matters up. *J. Wallis.*

**Disa crassicornis, Lindley.**—The plant which Mr. Burbidge enquires about on p. 374 under the name of Disa macrantha is D. crassicornis, and was figured in the *Botanical Magazine* a few years since at t. 6529 under the name of D. megaceras, and in the *Garden* under the erroneous name of D. macrantha, the true D. macrantha, Thunberg, being, up to the present time, an unknown plant. The copy of Mr. Sanderson's drawing represents larger and more highly coloured flowers than do the plates above quoted. The flowers certainly grow larger than the *Botanical Magazine* shows them, but whether they become as highly coloured as in the copy of Mr. Sanderson's drawing, or whether this is due to the imagination of the artist, I have no means of knowing. Certainly it is a very beautiful species, and will well repay all the trouble a cultivator may bestow upon it. *N. E. Brown.*

**Hardy Ferns, &c.**—In looking through a number of collections of hardy Ferns at several exhibitions during the present season, I have occasionally wondered whether this class of plants is as sufficiently known as it deserves to be. I do not mean to infer that any departure of a novel or striking character has taken place during the shows that have been held this season, for the exhibits of each season and, in fact, of most exhibitions, are of a strikingly similar character. There are a large number of species and varieties that might be used for the purpose, so that it does seem somewhat tiresome and disappointing that when a group of twelve hardy Ferns is put up for competition there should be three, five, or even seven varieties of Athyrium Filix-fœmina found amongst them. If the class is for six plants, then often I have observed four of this species; and when prizes are offered for four hardy Ferns there are two or three specimens of this same form. Now, I take no exception whatever to this charming species; some of the forms are beautiful in the extreme, whether of the plain, tasselled, or much divided varieties, all are deserving of culture, and all are worthy of being placed upon the exhibition stage; but as the number of hardy Ferns is so large, I do think it would be well that in this class the number of specimens of this species were considerably reduced. In showing stove Ferns a class is almost always provided for Adiantums, and it is well that it is so, for a plant of Adiantum cuneatum, beautiful and well grown as it may be, does not stage very well with a Dicksonia antarctica having a stem 6 to 8 feet high. This is perhaps putting an extreme case. My view is that, among the Adiantums put up for competition, whether in a separate class or in a group of stove Ferns pure and simple, there is not seen so much variety and diversity as may be met with in the various forms of A. Filix-fœmina. This being so, I venture to suggest that it would be wise and desirable that a class be formed for this species only, say six Athyrium Filix-fœmina, to include such as are most distinct, and that the other class of hardy Ferns exclude this form, or only allow one or two. I do not think it would be wise to banish any forms from our exhibition stages, but I do think it would be well if some means could be adopted so that greater variety both of species and genera were not only well cultivated, but staged at our shows, both for the education of the general public, and for the extended knowledge of many who hope by-and-bye to have charge of establishments where hardy plants of all sorts are grown. There are many hardy Ferns of most attractive appearance that are never seen in public competition, and I venture to remark that if some enthusiastic young grower would discard for a season or two the forms of Athyrium Filix-fœmina and grow other species of a very distinct character, and then stage them at one of our principal shows in a thoroughly well-grown and healthy condition, he would meet with an amount of success that would not only compensate him for all his labour, but would be far greater than he can hope to secure by showing them under conditions that rule at present. *W. Swan, Fallowfield.*

**Zephyranthes candida.**—"Ealing" asks whether "any one has tested the hardiness of this plant out-of-doors?" I have grown it so for many years, and also Zephyranthes atamasco—both flower profusely. I have had as many as sixty flowers on a small patch, and I have no doubt that wherever Sternbergia lutea succeeds Zephyranthes candida, as well as the larger atamasco, may be grown. *T. H. Archer-Hind, Devonshire.*

## Florists' Flowers.

### THE PINK.

THIS is a busy time with the growers of florists' flowers, and the lowly Pink must be attended to now. We have just planted ours out in the open ground, and those who have not yet done so should see that this is done at once. The plants will succeed in any good garden soil, moderately rich, and in proper condition at the time of planting. The plants may be put out about 8 or 10 inches apart; very small plants may not be allowed more than 6 inches between them. Any long straggling specimens should have small sticks placed to them to keep them in their places. Indeed, if the position is much exposed to winds, all the plants should be supported in this way. It will not do to plant them out if wireworm exists in the soil—the leather-coated grub is sure to find them if it is in the vicinity; this nasty grub feeds at night, and may easily be destroyed by watching for it with a light. A pair of each kind of Pinks should be potted into small pots, and wintered in frames, to make good any losses that may occur in winter.

#### FORCING PINKS.

These plants must now be lifted from the open ground, and be potted into the pots in which they are to flower. I have always advised taking the cuttings of these in April, and if this has been done the plants will be of large size, and fit to be potted into 6-inch pots. When the plants are potted place them in a frame; the lights may be kept over them for a few days, but not too close. They will speedily root into the new compost, after which the lights ought to be removed entirely in fine weather.

#### THE PENTSTEMON.

This is a capital late autumn flowering plant, and will continue to hold up its head bravely when more tender things have succumbed to frost; but it will flower longer and better if the seed-pods are picked off as soon as the flowers fade. The present is a good time to take cuttings, which will strike freely under a hand-glass, or in a close frame with bedding Calceolarias. They will root quicker over a gentle hotbed, but I do not think they make any the better plants for the next season. If the old plants are left in the borders, they pass through ordinary winters unscathed, and flower strongly and early the following season.

### The Phlox.

I have previously stated that the best way to cultivate this beautiful hardy plant successfully, is to take cuttings early in the year. March is a good month, each of these will produce one good spike the same season, either in pots or planted out. If they have been grown and flowered in pots, the present is a good time to plant them out in the open border, or if in beds, 20 inches apart; given a rich deep soil, they will produce splendid spikes the following season. Or if they are to be grown and flowered in pots the second season, they need not be potted until the spring, and 8 or 9-inch pots are the best sizes in which to flower them. The soil for potting ought to be light, to allow of free and rapid development of the roots.

### The Polyanthus.

With many persons the Polyanthus is a greater favourite than the Auricula. It is in all respects distinct, flowering several weeks earlier, and a bed or frame full of them rivets attention at once, owing to their distinct and brilliant colours. I was so pleased with the results of a frameful planted out in Mr. Brockbank's garden at Didsbury that I have planted a frame this season and potted up as many. I allude now to the laced type. The past season was very trying to them in this district; they were attacked by red-spider and green-fly simultaneously, and either of these is sufficient to cripple the plants. They were washed and cleaned, promising now to flower well. Our best plants last season were potted the last week in September; this year they were potted and planted out early in August; it was necessary to lift them to get at the red-spider. Plants of these, or the fancy kinds growing in beds or borders, may be left to themselves, except to dust some soot round the roots to keep slugs from them. Choice plants may even be watched at night with a lamp. I have seen plants quite cropped over with the leather-coated grub; this is very troublesome, as it is so fond of the leaves, and is not deterred by soot. *J. Douglas.*



## Notices of Books.

**Flore Complète de la Belgique, etc.** Par André de Vos. Mons: Hector Manceaux. 12mo, pp. 739.

It is impossible to criticise a work of this character in detail until one has become practically familiar with its use, or otherwise, in the field. No such delay, however, is required to form an appreciation of the author's method of procedure, nor of the general value of his work. We need not, therefore, hesitate to commend this little volume to the attention of all those who are interested in the Belgian Flora, or, indeed, in that of north-west Europe generally. In some respects it follows the plan adopted by Lamarck, and of which English botanists have an excellent example in Bentham's *Handbook of British Plants*. It consists of analytical tables offering a series of alternative characters, by means of a succession of which the pupil is rapidly led to the identification of the natural order, genus and species of the plant before him. Such a plan necessitates a certain amount of previous knowledge of the organisation and characteristics of plants, and it demands rigid accuracy on the part of the compiler, and strict attention on the part of the reader, else the latter may very readily wander from the right track, and each successive alternative, instead of bringing him nearer and nearer to the desired goal, will necessarily take him further and further from it. The strict attention requisite on the part of the pupil is at first rather irksome, yet highly beneficial as a mental discipline, provided that the tables have been drawn up with sufficient care for the pupil's wants. Such analytical tables, it seems to us, should, as a rule, include nothing that cannot readily be seen by the observer. To illustrate our meaning we may ask of what value in such tables are the details relating to the double generation of Conifers (*i.e.*, the production of corpuscula), and the division of the pollen-cells? And we may inquire how the pupil is to ascertain the presence or absence of a double set of vessels, or of an alternation of generation? These are points of first-rate importance, but they are not easily made out, and are quite useless for ordinary field use. But the objections that might be raised on this score are, partially at least, met by the fact that the work is intended for use by persons who have already some knowledge of botany, and, moreover, they apply merely to the larger groups, and not to the genera and species. In addition to the ordinary wild plants of Belgium, M. De Vos includes many of the more important hardy cultivated plants, which will render the work useful to gardeners and others desirous of gaining some information as to the plants they cultivate. Of course, it is impossible to enumerate a tithe of the hardy cultivated plants, so that selection was essential, and these, so far as we have seen, have been judiciously effected.

Reference is made in many cases to the most recent monographs of particular genera, and incidentally a great deal of information is given as to the geographical distribution of plants, the date of introduction, and the uses of those cultivated for economic purposes. Mention is even made of the principal insects and parasitic fungi injurious to particular crops, so that a very large amount of information on a great variety of subjects is condensed into a small space. Curiously enough we find but little reference to the structural adaptations to insect fertilisation, to which now-a-days so much attention is deservedly paid. Again, while the French and Flemish names are given, there is no attempt made to give the explanation of the classical names. We recognise, of course, that we have no right to expect this sort of information in an analytical flora, but M. De Vos has given us so much miscellaneous information that we can scarcely help asking for more. We hope the author will deem this a compliment rather than otherwise, for if his book were less valuable than it is we should not ask for more. As it is, M. De Vos has produced what we cannot but consider a most useful publication. It consists not only of a series of analytical tables and condensed descriptions of plants, but is a veritable encyclopædia in miniature. How so much matter can have been compressed into little over 700 small pages is a mystery. A word of commendation is also due to the printer and publisher for the excellence of the typography and the quality of the paper.

## SOMERLEY.

On the borderland lying not wide from that old hunting-ground of royalty, the New Forest, and the heathery downs of Dorsetshire, stands Ringwood, a quiet old-world town—a little busier than was its normal state before the advent of the South-Western Railway, and the subsequent junction with the Bournemouth line. The Avon flows lazily past the town, stopping the while to broaden out into shallow and deep meres very suggestive of jack, whilst the swifter parts are admittedly the feeding-places of fine trout and salmon.

Somerley, the residence of the Earl of Normanton, occupies an elevated position, hidden amongst woods, about three miles from the little forest town. The house itself is a plain, commodious, modern building, of brick and stone, and is not visible from any point of vantage until the onlooker is close to it. The position is a remarkably good one, but standing amongst trees which press in on it on every side, the most would not appear to have been made of it by the present proprietor. He, like so many more, has a certain reverence for the old trees surrounding his residence, and views with disfavour any schemes of improvement which would cause the sacrifice of his favourites. New species of either deciduous or coniferous are not common about the grounds, which are of great extent, so that we find much of the beauty of scene due to the fine development of indigenous timber.

The common Beech, a never-failing tree in districts chalky, or bordering on that or the Greensand stone; Scotch Pine, Maple, and in the "the bottoms" common forms of Oak, make fine timber. Quite remarkable were some Pines standing in a line alternating, mostly with Beech. The trees stood free on the edge of a declivity, where consequently the ground descended rapidly on one side, giving full exposure there, many of the specimens having a diameter of 3 feet at 4 feet from the ground, the massive rich red and almost smooth pillars associating and contrasting well with the yet larger Beeches. Some one, years gone by, had made a walk perfectly straight for some 200 or 300 yards, running close up to the stems, so that their fine proportions should not be lost in the general wildness of the wood.

The grounds which stretch around the house, on the generally level ground there, are rather intricately planted with shrubberies and a few solitary trees; there is a considerable quantity of greensward, and fortunately but few walks—only just enough for getting healthy promenades, without taking the visitor to every big tree and show objects in the place. On the south side of the mansion is a tangled declivity, which is overlooked from a terrace running on that side. This terrace is cold, severe, and quite unadorned, and appears with its natural surroundings of trees and shrubs just a bit incongruous, but we must not forget the dictum of the landscape gardener of a not distant date, that houses erected on ground near a declivity must seem to have their security made apparent, adding a terrace, walled, buttressed, and balustraded on the lower ground, the house being built first, and the sham platform made to account for the existence of the house at that point.

A stretch of velvety lawn, bounded by trees, with here and there a shrub or low tree, round-headed rather than "spiky," would be an improvement on the wild slope and its impending terrace.

Some considerable distance north from the mansion are five vineries, lean-to houses of an old-fashioned stamp, as seen in the methods for ventilating, paving, and construction; fairly good Grapes are now grown in them, and when the young Vines, which Mr. Richards, the present able gardener, has planted, come into bearing, the crops will be greatly improved. Good well coloured bunches of all the popular late kinds were seen in the later houses. Behind this range of vineries the usual sheds, Mushroom-house, stokehole, and offices are found, and still further to the rear, and shut in by trees on three sides, is a span-roofed vinery that was formerly a Peach-house intended to fruit early in the season; but which, owing entirely to the shade produced by the adjacent trees, turned out to be a failure for early work. It is now partly filled with some very strong canes of late keeping kinds that are certain to bring fine produce, and are likely to be heard of at our metropolitan shows at no distant date. One division of this house still remains planted with Peach trees, the wood, which has been cut back nearly as hard as would be done by gardeners at the winter pruning, the main idea being to plump up the bloom, *i.e.*, to cause their perfect development by cutting back in August when the chance of further growth being made had ceased. As seen in the second week in September, the experiment appeared likely to have the wished-for effect, and certainly there were no indications of the rear buds starting, which was of course to be apprehended.

Other houses in this area were a small stove filled with nice healthy young stock of useful furnishing plants. In this house we found some perfectly clean Gardenias, a large piece of Cattleya gigas and one of Dendrobium densiflorum, which bloom always well, and get only stove treatment. Some pits useful for Cucumbers, Pines, Tomatos, &c., fill up the space between the first-named range of vineries and the pleasure grounds; and so little was thought of the Vine roots extending beyond the border made for them, or of the need of sun-heat playing on the border, that the hinder walls of these pits were built on the sunny side of it. From the two instances mentioned, and there are others, the worst obstacle to good work in this portion of Somerley gardens would appear to be shade, either from buildings improperly placed, or from forest trees as improperly left standing. In another part of the Vine border a big Laurel has its position to the annihilation of the Vines for many feet on either side. It did not matter how much the Vines were given in the way of manure, the Laurel grew and prospered, but the Vines became smaller by degrees. In another there grew a mass of what is now Tree Ivy, as greedy a feeder on manurial good things. These masses of roots are

now enclosed within cement and brick walls, so that further wanderings are impossible.

On the lawn is an octagon-shaped house, planted in the middle with Camellias, which at the time of our visit were bristling with flower-buds, the sorts mostly being C. imbricata, C. Lady Hume's Blush; C. saccoi-nova, and Marchioness of Exeter. Flanking this house was a quadrilateral house, with tall upright sides filled with Roses on roof and sides, and another similar house on the opposite side of the octagon containing a great Stephanotis on the roof, and beneath it Begonias and other shade loving stove plants. Magnolia conspicua, the best variety, does splendidly at Somerley, and lives within winter protection; it is much used to cover buildings and unsightly walls, and occupies varied aspects with the advantage accruing of a long supply of flowers.

The flower garden, properly so-called, lies on the south side. It is small, but the beds are very numerous, causing the whole to represent a carpet-bed on a large scale, and requires about 20,000 plants to furnish it. Leaving the high ground on which the mansion is situated, a rather steep pathway leads down through the wood to the park. Here were found Portugal Laurels, that had grown into trees of 40 or more feet in height, and proportionately thick. Common Laurel grows less robustly, but both are picturesque additions to woodland scenery. Rhododendron ponticum grows wild everywhere, and was seen of all ages, from naturally layered bushes, 60 feet in circumference, to tiny yearlings.

A space of park land has to be traversed of about 400 yards, and the kitchen gardens are reached, lying warmly at the foot of the hill, and amongst a surrounding of solitary standing Oaks. This position has some advantages: it makes vegetable and fruit growing much easier than in exposed gardens, but late frosts are very common and destructive, and things are cut off earlier than on higher ground.

The area of the ground under fruit and vegetables is about 5 acres, and it is subdivided into several portions of singular form by intersecting walls, which latter give a great variety of aspects for fruits. The Fig grows well here, and Peaches ripen without glass protection, and it may be remarked that the wood gets quite matured without so much labour being necessary in laying it in close to the wall. By constant trenching and manuring, especially the first-named, the tilth has much improved, and is capable of supporting great crops of vegetables of the best quality, as witness Mr. Richards' triumphs in the classes for these at metropolitan and other shows. Yet we found fruit trees, such as espaliers, bushes, and pyramids, growing strongly, but mostly barren. The roots were in the hungry gravel of the subtratum, and, for want of sufficient labour, could not be transplanted. This is to be regretted, for the climate of Hampshire is well suited for fruit growing. Of the few that were not influenced by the bad soil may be mentioned the Ribston, clean in wood and fruit; and Cellini, equally good.

A short range of Peach-houses is found in the kitchen garden, and good fruit was being gathered in them, as well as very fine Tomatos, which latter were planted in short rows at right angles to the back wall, and 5 feet apart, the shade thrown on the Peaches being very trifling, and no way detrimental. Outside on the front wall Laxton's out-of-door Tomato was carrying a weight of 10 lb. of fruit per plant. A Plum wall planted with the usual kinds had produced a wonderful crop, but, except on a few, it was mainly over. Morello Cherries were equally fine, and these, like the Plums, had a large portion of the walls set apart for them.

We noticed some fine quarters of Brussels Sprouts and Cauliflowers; in the first May's variety took the lead for robust compact growth and firm Sprouts, followed by a selected variety from Messrs. Sutton; the kind of Cauliflower was Veitch's Autumn Giant.

Great care is evidently taken with the vegetable crops of all kinds, not alone for show purposes, which have special care, but for the ordinary supply. The light soil, when trenched, grows root crops of all kinds to great excellence, and clubbing and finger-and-toe (Anbury) disfigurements are unseen.

The surrounding demesne is of 4000 acres in extent, the home park being more than a mile in length, but much less in breadth. A few exotic trees, coniferous and others, were noticed, but nothing which calls for especial mention. *M.*

## FORESTRY.

### OCTOBER: PLANTING.

To be ready to take full advantage of autumn planting requires a little forethought and early preparation of the ground and materials, but where the instructions previously given in these columns have been acted upon everything should be in readiness by the middle of October, so as to allow the whole available staff under the forester's supervision to be employed in this important operation as soon as the nursery stock has arrived at a proper state of maturity to be safely removed. The advantages of early planting are so many, and now so well known, that one can only wonder why the practice is not more generally adopted. It is well known, however, that from one reason or another comparatively few planters adopt the early start, but defer this important work till the cold, drying winds of March arrive, and when the young plants are placed at the greatest disadvantage. In some cases it is certainly advisable to adopt spring planting—for instance, in dealing with cold, wet, retentive soils or peat bog; but these are few and peculiar, and should certainly form no excuse for the frequency with which the practice is adopted in various parts of the country.

Everything being in readiness, the next important but oft-neglected point is the selection of clean, healthy, well rooted and bushy plants, and such as are suitable for the situation and soil in which they are to be inserted. Dwarf, lanky, ill-grown, and badly rooted plants should at once be discarded, as they necessitate just the same expenditure in planting as others of good constitution and form, but never make profitable trees, and constitute a source of grievance to the owner and of annoyance to all who have been in any way connected with their removal.

The planting of upland or mountainous tracts also requires considerable forethought, and, above all, wise selection of the plants to be used. These should not only be small (small in proportion to such as are used in low-lying and sheltered situations) but chosen from such nursery ground as is well exposed and situated at a considerable elevation above the sea-level, for we can never expect plants that have been reared in a warm, sheltered, lowland nursery to succeed when planted on a bare, exposed mountain side, at least nearly so well as such as have been inured to it from their infancy. Lifting nursery stock is another matter of the highest importance, that should always be superintended by a careful, competent person, so that none of the barbarous treatment too often practised will be tolerated, and to which many of the failures in planting might be traced.

The plants should be lifted with a fork and raised clean out of the ground without racking and breaking the roots, for the preserving of these unimpaired is a matter of much importance for the plant's future welfare. As soon as lifted, and when not required for immediate use, the plants may be "laid in" and the roots carefully covered with a sufficient quantity of rather dry earth, but where it is at all practicable, as in a home nursery, it is well only to lift sufficient plants for one or two days' use—despatch in lifting and planting being a golden rule. Of course where plants are procured in quantity from a distance, immediate planting is out of the question, but under these circumstances they should be unpacked immediately on arrival and "sheughed" thinly, and if at all dry well watered so as to preserve them in as healthy a state as possible until such time as they can be planted. When received from a distance young plants are often allowed to remain in bundles, but this is a very objectionable practice and should only be tolerated where planting is to take place in a day or two. In conveying young plants from the nursery to their place of destination the roots should never be allowed to become dry. The slightest protection, even a mat or damp refuse straw, or hay, will prevent this.

### NURSERY WORK.

This is usually one of the busiest months in the nursery; for besides the autumn planting and transplanting, there will be the usual propagation by cuttings, layers, or suckers, the collecting, drying, and storing of tree seeds, formation of seed beds, and general pruning of all nursery stock. In collecting seeds it should always be borne in mind that those from medium-sized, healthy trees are preferable, those from young trees often proving barren, and from old trees weakly in growth, and usually difficult to procure. Coniferous tree seeds are unusually abundant this season; indeed, we cannot remember so rich nor generally so good a crop. Many rare kinds are now coning for the first time, such as Abies concolor, A. Pindrow, A. Pinsapo, A. grandis, Picea orientalis, &c., while hardwood trees and shrubs are in most cases well supplied with a heavy, healthy crop of fruits. As nursery borders become vacant they may, according as it is thought proper, be either deeply trenched and otherwise prepared for the reception of green crops during the following season, or where the soil has become too impoverished, receive a good top-dressing of leaf-mould or other necessary refuse, after which they may be planted with seedlings, varying the crop from Firs to hardwood or *vice versâ*. Be sure that all seeds of weeds have been destroyed in the compost heap before its application to the borders, as a neglect of this precaution will cause endless work throughout the following season. By turning the compost heap occasionally, so that fermentation may go on equally all over the mass, and by adding a slight addition of lime, the germinative properties of most seeds will be destroyed. *A. D. Webster, Penrhyn Castle.*

*(To be continued.)*

## The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON*
FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 30, 1885.

| MONTH AND DAY. | BAROMETER. Mean reading Reduced to 32° Fahr | BAROMETER. Departure from Average of 18 years | TEMPERATURE OF THE AIR. Highest. | TEMPERATURE OF THE AIR. Lowest. | TEMPERATURE OF THE AIR. Range. | TEMPERATURE OF THE AIR. Mean for Day | TEMPERATURE OF THE AIR. Departure of Mean from Average of 30 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition. Dew Point. | Hygrometrical Deductions from Glaisher's Tables 7th Edition. Degree of Humidity. Sat = 100 | WIND. Average Direction. | RAINFALL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sept. | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 24 | 29.91 | +0.14 | 56.5 | 47.0 | 9.5 | 50.7 | — 4.3 | 41.9 | 72 | N.W. | 0.00 |
| 25 | 29.70 | — 0.05 | 53.0 | 40.0 | 13.0 | 44.3 | — 10.5 | 41.9 | 92 | N.W. | 0.05 |
| 26 | 29.72 | — 0.03 | 51.2 | 35.5 | 15.7 | 42.1 | — 12.6 | 36.1 | 80 | N.NW | 0.00 |
| 27 | 29.73 | 0.00 | 47.4 | 37.2 | 10.2 | 41.7 | — 12.9 | 36.4 | 82 | N.W. W.NW | 0.00 |
| 28 | 29.83 | +0.11 | 52.5 | 37.0 | 15.5 | 43.6 | — 10.9 | 38.6 | 82 | N.W. | 0.00 |
| 29 | 29.59 | — 0.13 | 59.5 | 44.3 | 15.2 | 52.3 | — 2.1 | 51.1 | 94 | N.W. | 0.30 |
| 30 | 29.39 | — 0.33 | 60.8 | 48.5 | 12.3 | 54.2 | — 0.1 | 52.4 | 93 | S.W. | 0.06 |
| Mean | 29.70 | — 0.04 | 54.4 | 41.4 | 13.0 | 47.0 | — 7.6 | 42.6 | 85 | N.W. | 0.41 |

Sept. 24 Fine day.
— 25. Rain in morning, thunder between 1 P.M. and 3 P.M.; dull day
— 26 Fine and bright at times. Fine clear night.
— 27 Dull cold day and night.
— 28.—Dense fog in early morning, fine bright day, fine night.
— 29.—Rain from early morning till about 9 A.M., fine but dull afterwards.
— 30.—Dull day, slight rain in afternoon

LONDON: *Atmospheric Pressure.*—During the week ending September 26, the reading of the barometer at the level of the sea increased from 29.91 inches at the beginning of the week to 30.13 inches by 9 A.M., and decreased to 30.06 inches by 5 P.M. on the 20th, increased to 30.37 inches by 9 A.M. on the 22d, decreased to 30.05 inches by 1 P.M. on the 24th, increased to 30.09 inches by 5 P.M. on the 24th, decreased to 29.86 inches by 1 P.M. on the 25th, increased to 29.93 inches by 9 A.M. on the 26th, and was 29.87 inches by the end of the week.

The mean reading of the barometer for the week was 30.09 inches, being 0.09 inch higher than last week, and 0.13 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 67°.8, on the 23d, on the 26th the highest was 51°.2. The mean of the seven high day temperatures was 60°.3.

The lowest temperature was 35°.5, on the 26th; on the 21st and 23d the lowest temperature was 54°. The mean of the seven low night temperatures was 45°.3.

The greatest range of temperature in one day was 25°, on the 22d; the smallest, on the 21st, was 8°. The mean of the seven daily ranges was 15°.

The mean temperatures were—on the 20th, 54°; on the 21st, 56°.6; on the 22d, 55°.3; on the 23d, 60°.1; on the 24th, 50°.7; on the 25th, 44°.3; and on the 26th, 42°.1; of these the 21st and 23d were above their averages by 1°.1 and 4°.9, and the rest were below by 1°.8, 4°.3, 10°.5, and 12°.6 respectively—the 22d being the same as the average.

The mean temperature of the week was 51°.9, being 5°.2 lower than last week, and 3°.3 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 119°, on the 22d. The mean of the seven readings was 103°.6.

The lowest reading of a minimum thermometer placed on grass was 28°, on the 26th. The mean of the seven readings was 36°.3.

*Rain.*—Rain fell on three days, to the amount of 0.10 inch.

ENGLAND: *Temperature.*—During the week ending September 26 the highest temperatures were 69° at Cambridge, 68°.3 at Brighton, 68° at Truro; the highest temperature at Bolton was 61°.9, at Preston 62°, at Bradford 62°.3. The general mean was 65°.5.

The lowest temperatures were 31°.9 at Bolton, 32° at Hull, 32°.1 at Nottingham; the lowest at Plymouth was 42°.9, at Liverpool 38°.6, at Newcastle 38°. The general mean was 35°.8.

The greatest ranges were 35° at Cambride, 34°.9 at Nottingham, 33° at Hull; the least ranges were 21°.2 at Plymouth, 24°.7 at Liverpool, 26° at Newcastle and Preston. The general mean was 29°.7.

The mean of the seven high day temperatures was highest at Cambridge, 62°.7, at Truro 62°.3, at Nottingham 61°.4; and was lowest at Bolton, 55°.4, at Liverpool 56°.5, and at Newcastle 57°.6. The general mean was 59°.7.

The mean of the seven low night temperatures was highest at Brighton, 47°.2, at Truro 46°.4, at Plymouth 46°.3; and was lowest at Wolverhampton, 40°.9, at Hull 41°.1, at Bolton 41°.4. The general mean was 44°.4.

The mean daily range was greatest at Cambridge, 19°.5, at Nottingham 18°.9, at Wolverhampton 18°.5; and was least at Liverpool, 10°.6, at Preston 12°.4, at Bradford 13°.4. The general mean was 15°.3.

The mean temperature was highest at Truro and Brighton, 53°.1, at Plymouth 52°.9; and was lowest at Bolton, 47°.2, at Hull 48°.8, and at Wolverhampton 48°.9. The general mean was 50°.6.

*Rain.* — The largest falls were 0.80 inch at Truro, 0.78 inch at Bolton, 0.76 inch at Liverpool; the smallest falls were 0.01 inch at Brighton, and 0.03 inch at Nottingham and Leeds. No rain fell at Sheffield. The general mean was 0.30 inch.

SCOTLAND: *Temperature.*—During the week ending September 26, the highest temperature was 63°, at Perth; at Greenock the highest temperature was 58°.5. The general mean was 60°.1.

The lowest temperature in the week was 31°, at Perth; at Leith the lowest temperature was 38°.7. The general mean was 35°.3.

The mean temperature was highest at Leith, 51°.1; and lowest at Aberdeen, 48°.1. The general mean was 50°.3.

*Rain.*—The largest fall was 1.49 inch, at Aberdeen; the smallest fall was 0.08 inch, at Edinburgh. The general mean fall was 0.54 inch.

JAMES GLAISHER, F.R.S.

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SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, Sept. 28, 1885, issued by the Meteorological Office, 116, Victoria-street, London, S.W.:—The *weather* has been in a changeable condition generally, and during the greater part of the period it was very cold for the season. Falls of rain or hail have been very prevalent, while in many places (including London) showers of snow have occurred.

The *temperature* has been unusually low for the time of year, the deficit over the greater part of England and in the south of Ireland amounting to 6°. The maxima, which were registered on the 22d, varied from 58° to 62° in Scotland and Ireland, and from 64° to 73° in England. During the latter part of the week the maxima at many stations—even as far south as London—did not exceed 50°. The minima were generally recorded towards the end of the period, when the thermometer fell to 25° in "England, S.W." (at Llandovery), and to between 28° and 32° in all other districts except the "Channel Islands," where the lowest reading was 44°.

The *rainfall* has been less than the mean in the "Channel Islands," "Ireland, S.," "Scotland, W.," and over central, southern, and north-western England, but more elsewhere.

*Bright sunshine* has been more prevalent in most districts than it was last week, the percentages of the possible duration varying from 29 in "Scotland, N.," and 37 in "Ireland, N.," to 50 in "England, E."

*Depressions observed.*—At the commencement of the period a large depression far to the northward of Scotland was moving away north-eastwards, while the barometer was highest over France and our southern coasts. As this disturbance passed away pressure decreased decidedly in the eastern and south-eastern parts of our area, where some shallow depressions were formed, while it increased steadily in the west. The wind, therefore, veered from the south-westward or westward to north or north-west on our coasts, and in many places blew strongly, with much colder weather. These conditions continued, with but slight alteration, until the end of the period, when depressions again appeared off our western coasts, and the wind backed to the southward, with rapidly rising temperature.

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## Answers to Correspondents.

*** NOTICE.—We shall feel obliged by our correspondents who may require to have their Pears named sending them in a ripe condition, so as to ensure accuracy, and not to send more than six varieties at one time.*

CARNATIONS: *E. B. C.* There are many much better Carnations in the market. The colour of yours is not at all attractive, except as a curiosity. To "make anything by them" you had better apply to some leading florist.

CROCUS BULBS DISEASED: *C. W. D.* A reply shall be given when a careful examination has been made.

FERTILISATION: *A. D. W.* asks, Is it possible for a plant to be imperfectly fertilised by too small a quantity of pollen being applied to the stigma? To this we reply that nothing definite is known, but the probabilities are that it is so.

FLOWER GARDEN IN A COLD SPOT: *Pedro.* You do not say so precisely, but we think you require herbaceous plants of a dwarf habit, to flower from July onwards to February. Useful for the purpose are Violas of all shades, the dwarfer forms of Phlox decussata, dwarf Honeysuckle, pegged down Roses, as General Simpson, Souvenir de la Malmaison, Madame Desprez, and others which make long growth; Fairy Roses, Phlox setacea, P. Nelsoni, Salvia patens, Campanula pulla, C. p. alba, C. carpatica, Anemone Honorine Joubert, A. japonica, Colchicum autumnale and C. grandiflorum, Ajuga reptans, Androsace helvetica, A. sinuginosa, Statice limonium, S. tartarica, Plumbago Larpentæ, Gladiolus blandus, Lilium bulbiferum, L. Thunbergi, L. dahuricum, Aster Amellus, A. amelloides, A. dumosus, Helleborus niger, Erica Menziesia in variety, Fuchsia coccinea, Funkia ovata, F. subcordata, Gentiana cruciata, G. pneumonanthe, Myosotis in variety, Salvia argentea, Sedum fabarium, Stachys lanata, for its leaves; Stokesia cyanea, Zauchneria californica.

FUNGUS: *R. R. W., Borden.* The name of the fungus is Boletus edulis, a well-known edible species. A book on edible and poisonous fungi has been published by Mr. Worthington G. Smith. We think Messrs. Chatto & Windus are the publishers.

INSECTS: *T. S.* The caterpillars, which are so numerous at the present time (in this peculiar season), and which are eating the roots of various vegetables just under the ground, are those of the Dart moth, Noctua (Agrotis) segetum and exclamationis. Carefully move the soil round the crown of the drooping plants, when the grubs will be easily found, and must be stamped out. *I. O. W.—R. C. A.* The brown oval bodies found in the dried cow manure are the chrysalids of two-winged flies, which have made their escape already. We found also a very small midge, the larvæ of which feeds on decaying vegetable matter; and a number of small white mites. *I. O. W.*

NAMES OF PLANTS.—*C. F., Ilam.* Cattleya Loddigesii; Oncidium varicosum Rogersii.—*J. Rose.* 1, Aristolochia Sipho; 2, Saxifraga pellata. — *A. C. C.* Miltonia Clowesii. — *Castle Eden.* 1, Viburnum opulus; 2, a Hellebore, but as it is not in flower we cannot say which.

NAMES OF FRUITS.—*S. F. B.*: 1, Beurré d'Amanlis; 2, Triomphe de Jodoigne; 3, Gansel's Bergamot; 4, Duchesse d'Angoulême; 5, Van Mons Léon le Clerc; 6, Louise Bonne of Jersey; 7, Comte de Lamy; 8, Beurré Diel; 9, Flemish Beauty; 10, Passe Colmar; 11, not recognised; 12, Bergamotte d'Esperen.—*T. Irvine & Sons.* 1 and 3, Denyer's Victoria; 2, Jefferson; 4, Crosse's Dictator.—*T. E.*—Apple, Nonsuch; Plum, Ickworth Imperatrice.—*W. T.* 1, Fondante d'Automne; 2, Beurré Diel; 3, Vicar of Winkfield.—*H. Berwick. Pears:* 1, Beurré d'Amanlis; 2, Duchesse d'Angoulême; 3, Verulam; 4, Beurré Bosc; 5, Catillac; 6, Clairgeau. *Apples:* 1, Adam's Pearmain; 2, New Hawthornden; 3, not recognised; 4, Warner's King; 5, Stirling Castle; 6, New Hawthornden; 7, seedling—not Fearn's Pippin, not unlike Barchard's Seedling.—*R. Fennessy & Son.* 1, largest Apple, Gravenstein; 2, long conical, Sugarloaf; 3, small bright coloured Hawthornden.—*G. W. C.* The Crittenden Prolific Damson, raised by Mr. Crittenden of East Farleigh. This is the best variety grown. 1, New Hawthornden; 2, Automne Bergamotte; 3, Duchesse d'Angoulême; 5, Bergamotte Rouge; 6, Fondante d'Automne; unnamed Pear, Beurré Clairgeau.

PEAR LEAVES SKELETONISED: *C. Warden.* The leaves are eaten by the larvæ of the Pear Saw-fly—Tenthredo Cerasi—which eats away the soft part of the leaf, so that the veins and skin of the lower side only remain. For prevention, skin off the surface soil under the trees, to the depth of 3 or 4 inches, the cocoons being found seldom deeper than that. Working in lime and soot would be beneficial. Dusting the grubs on the leaves with powdered caustic lime, two or three times, at short intervals; tobacco-water and soft-soap, are likewise good remedies applied with a syringe.

PEAR TREES NOT BEARING: *S. A. S.* Your trees must be lifted, and replanted in loamy soil; and you had better, so as to save further trouble, put a concrete or cement floor, 4 feet square, under each tree at 2 feet deep.

STEPHANOTIS FLORIBUNDUS: *Stephanotis.* It bears fruit when grown in very warm houses, and the pod is very poisonous. We do not know if the poisonous principle is made any use of.

TEN-WEEK STOCKS: *F. Römer, Quedlinburg.* The Stocks, which were planted in a favourable position, gave rather more than 50 per cent. of double flowers, the plants being dwarf and the spikes of good quality. The colours were most varied and pleasing.

WHITE LAPAGERIA: *Perkins & Son.* It is certainly better in most respects than the old variety, the petals having more substance, the tube is slightly more expanded, and the petals somewhat more rounded at their points. With regard to its being freer, and opening better than the old variety, we rather think these results are due more to management and soil than anything else.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

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## CATALOGUES RECEIVED.

PAUL & SON, The "Old" Nurseries, Cheshunt—Rose Catalogue.

LAMBERT & REITER, Triez, Germany—Trees, Shrubs, and Roses.

JOHN WATERER & SONS, Bagshot, Surrey—Trees and Shrubs.

W. RICHARDSON & Co., North of England Horticultural Works, Darlington—Boilers, &c.

MORLE & Co., 1 and 2, Fenchurch Street, E.C. — Dutch Bulbs.

COMMUNICATIONS RECEIVED:—W. G. S.—E. S. T.—W. E.—H. G. J.—De B. C.—A. H.—T. S.—J. Smith.—J. B.—J. R.—W. Fowler.—P. M.—F. and A. D. & Sons.—J. Rose.—D. J.—B. Paffard. R. D.—H. Correvon. B. S. W. A. B.—A. D. B.—D. W.—Oakfield.—J. McL., Ayrshire.—A. M.—G. Watt.—Glasgow (shortly).

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# Markets.

*COVENT GARDEN, October* 1.

TRADE quieter, prices remaining about the same. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | 3 0 | Melons, each | 0 6 | 1 6 |
| Damsons, ½ sieve | 1 0 | 3 6 | Peaches, per doz. | 3 0 | 8 0 |
| Figs, per dozen | 0 6 | 0 9 | Pine-apples, Eng. lb. | 2 0 | 4 0 |
| Grapes, per lb | 0 6 | 3 0 | — St. Michael, each | 2 6 | 5 0 |
| Kent Cobs, 100 lb | 25 0 | 27 6 | Pears, per dozen | 0 9 | 1 3 |
| Kent Filberts, 100 lb. | 25 0 | 28 0 | per ½-sieve | 1 6 | 3 0 |
| Lemons, per case | 15 0 | 30 0 | Plums, ½ sieve | 1 6 | 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 5 0 | | Lettuces, Cab., doz. | 2 0 | |
| Aubergines, each | 0 4 | | Lettuces, English Cos, doz. | 3 6 | |
| Beans, Eng., per lb. | 0 4 | | Mint, green, bunch | 0 4 | |
| Beet, per dozen | 1 0 | | Mushrooms, basket | 1 0 | 1 6 |
| Brussel Sprouts, lb. | 0 4 | | Onions, per bushel | 4 0 | |
| Cabbages, per dozen | 1 6 | 2 0 | Spring, per bun. | 0 6 | |
| Carrots, per bunch | 0 6 | | Parsley, per bunch | 0 4 | |
| Cauliflowers, Eng. lish, per dozen | 2 0 | 4 0 | Peas, per quart | 1 0 | 2 0 |
| Celery, per bundle | 1 6 | 2 6 | Radishes, per dozen | 1 0 | 2 0 |
| Cucumbers, each | 0 4 | 0 8 | Small salading, per punnet | 0 4 | |
| Endive, per dozen | 2 0 | | Spinach, per bushel | 4 0 | |
| Garlic, per lb | 0 6 | | Tomatos, per lb. | 0 6 | 0 9 |
| Herbs, per bunch | 0 2 | 0 4 | Turnips, new, bunch | 0 6 | |
| Horse Radish, bun. | 3 0 | 4 0 | Veget. Marrs, each | 0 3 | |

POTATOS.—Magnum Bonums, bad trade, 50s. to 80s. Regents, 60s. to 80s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 18 0 |
| Arbor-vitæ (golden), per dozen .. | 6 0 | 18 0 |
| — (common), dozen | 6 0 | 12 0 |
| Arum Lilies, dozen .. | 9 0 | 18 0 |
| Begonias, per dozen | 4 0 | 12 0 |
| Bouvardia, dozen .. | 12 0 | 18 0 |
| Chrysanth., per doz. | 9 0 | 18 0 |
| Cyperus, per dozen . | 4 0 | 12 0 |
| Dracæna terminalis, per dozen .. | 30 0 | 60 0 |
| — viridis, per doz. | 12 0 | 24 0 |
| Erica, various, doz | 9 0 | 12 0 |
| Euonymus, in var., per dozen .. | 6 0 | 18 0 |
| Evergreens, in var., per dozen .. | 6 0 | 24 0 |
| Ficus elastica, each . | 1 6 | 7 0 |
| Ferns, in var., dozen | 4 0 | 18 0 |
| Foliage Plants, various, each .. | 2 0 | 10 0 |
| Fuchsias, per dozen | 3 0 | 8 0 |
| Lilium auratum, per dozen .. | 15 0 | 24 0 |
| — longiflorum, doz. | 9 0 | 18 0 |
| Marguerite Daisy, per dozen .. | 8 0 | 12 0 |
| Myrtles, per dozen. . | 6 0 | 12 0 |
| Palms in variety, each .. | 2 6 | 21 0 |
| Pelargoniums, scarlet, per dozen .. | 2 6 | 9 0 |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 |
| Arum Lilies, 12 blms. | 6 0 | 8 0 |
| Asters, 12 bunches . | 4 0 | 8 0 |
| Azalea, 12 sprays .. | 2 0 | .. |
| Bouvardias, per bun. | 0 6 | 1 0 |
| Carnations, per bun. | 6 0 | 9 0 |
| — 12 blooms .. | 1 0 | 2 0 |
| Chrysanth., 12 blms. | 1 0 | 6 0 |
| — 12 bunches .. | 4 0 | 12 0 |
| Eucharis, per dozen | 4 0 | 6 0 |
| Gardenias, 12 blooms | 2 0 | 4 0 |
| Lapageria, white, 12 blooms .. | 2 0 | 3 0 |
| — red, 12 blooms .. | 1 0 | 2 0 |
| Lilium longiflorum, 12 blooms.. .. | 4 0 | 6 0 |
| Marguerites, 12 bun. | 3 0 | 6 0 |
| Mignonette, 12 bun. | 1 6 | 3 0 |
| Pelargoniums, per 12 trusses .. .. | 0 6 | 1 0 |
| — scarlet, 12 trusses | 0 4 | 0 6 |
| Rhodanthe, 12 bun. | 6 0 | 9 0 |
| Roses (indoor), doz. | 1 0 | 3 0 |
| Stephanotis, 12 spr . | 5 0 | 9 0 |
| Tropæolum, 12 bun. | 1 0 | 1 6 |
| Tuberoses, 12 blms.. | 0 0 | 1 6 |
| Violets, 12 bunches | 0 0 | 0 9 |

## SEEDS.

LONDON: *Sept.* 30.—There is no change worthy of notice in the values of farm seeds: the trade is now getting quieter. Red Clover seed keeps firm: the supplies this season will not be abundant. Very moderate quotations prevail for Trefoil. Winter Tares are rather easier; the inquiry continues fairly good. Sowing Rye is steady. More money is asked for Rape seed. White Mustard sells at last week's rates. There is no variation in the trade for blue boiling Peas. The new Haricot Beans are good, and sell at reasonable figures. The new French Millet proves of excellent quality. Linseed continues strong. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

From Monday's report of business done at Mark Lane we learn that the receipts of English Wheat were light, and of foreign good. The former sold slowly at rates on a par with those of the preceding Monday, and foreign realised a partial advance of 6*d*. Flour maintained steady value, Beans advanced 6*d*. on the week, and Maize was firmly held. Grinding Barley met a moderate demand at steady value; middling grades of English malting Barley were rather lower. Oats were not quotably altered as regards prices, but there was rather more tone in the trade. Peas and Lentils continued unaltered.—On Wednesday the tendency was against the sellers of both English and foreign Wheat. For flour the market was quiet and unchanged. Barley, Beans, and Peas sold in retail quantity at unaltered rates. Oats were steady in value, with moderate sales. Maize was held for late value.—Average prices of corn for the week ending Sept. 26:—Wheat, 30*s*. 10*d*.; Barley, 31*s*.; Oats, 19*s*. 4*d*. For the corresponding period last year:—Wheat, 33*s*.; Barley, 32*s*. 2*d*.; Oats, 19*s*. 10*d*.

## CATTLE.

At Copenhagen Fields on Monday last an unusually large supply of cattle was on offer, the bulk of it of middling qualities, which were consequently a dull dragging sale, at rates in favour of buyers. Really prime qualities from their scarcity realised comparatively firm prices. Sheep were also a full supply, and fat coarse sorts sold slowly at easier rates. Calves were a dull sale. The pig trade was steady. Quotations:—Beasts, 3*s*. 10*d*. to 4*s*. 6*d*., and 4*s*. 8*d*. to 5*s*. 2*d*.; calves, English, 4*s*. 4*d*. to 4*s*. 10*d*.: Irish, 2*s*. 6*d*. to 3*s*.; sheep, 3*s*. 8*d*. to 4*s*. 4*d*., and 4*s*. 10*d*. to 5*s*. 6*d*.: pigs, 4*s*. to 4*s*. 8*d*.—On Thursday trade was quiet, and Monday's prices were not maintained without difficulty. Business in sheep was very quiet, and inferior sorts ruled in buyers' favour. Calves were dull, and pigs decidedly lower.

## HAY.

Tuesday's Whitechapel Market report states that the weather checked the trade, which was dull. Quotations:—Clover, prime, 80*s*. to 110*s*.; prime second cut, 85*s*. to 107*s*.; inferior, 60*s*. to 75*s*.; hay, prime, 65*s*. to 92*s*.; inferior, 36*s*. to 60*s*.; and straw, 28*s*. to 39*s*. per load.—On Thursday there was a moderate supply on sale. The trade was quiet, and prices were easier for straw (29*s*. to 31*s*.). — Cumberland Market quotations: — Clover, best, 95*s*. to 102*s*. 6*d*.; second, 60*s*. to 90*s*.; hay, best, 80*s*. to 90*s*.; second, 50*s*. to 70*s*.; new, 67*s*. to 80*s*.; and straw, 30*s*. to 36*s*. per load.

## POTATOS.

The Borough and Spitalfields Markets reports state that best qualities maintained fairly steady value, inferior sorts being dull and irregular. Quotations:—Regents, 60*s*. to 80*s*.; Magnum Bonums, 50*s*. to 80*s*.; Early Roses, 70*s*. to 80*s*.; Hebrons, 100*s*. to 110*s*. per ton.—The imports into London last week consisted of 182 bags from Boulogne, 12,253 from Hamburg, 70 barrels 5 baskets from Rotterdam, and 1336 sacks from Stettin.


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|---|---|---|---|
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| ,, ,, | 2 | 6 | ,, |
| ,, ,, | 5 | 0 | ,, |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| ,, ½ ,, | 20 | 0 | ,, |
| ,, 1 ,, | 37 | 6 | ,, |

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LIGHT BROWN FIBROUS PEAT, 5*s*. 6*d*. per sack; 5 sacks 25*s*.; sacks, 4*d*. each.

BLACK FIBROUS PEAT, 5*s*. per sack, 5 sacks 22*s*.; sacks, 4*d*. each

COARSE SILVER SAND, 1*s*. 9*d*. per bushel; 15*s*. per half ton, 26*s*. per ton in 9-bushel bags, 4*d*. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s*. per bushel.

SPHAGNUM MOSS, 8*s*. 6*d*. per sack

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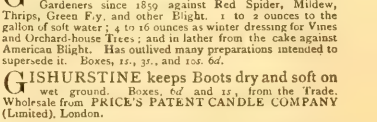
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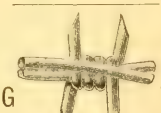
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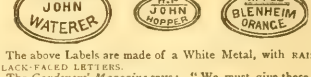
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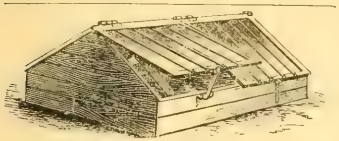
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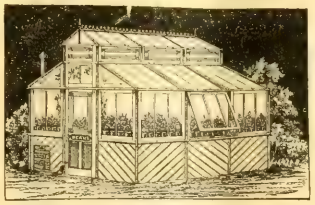
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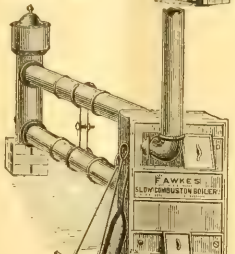
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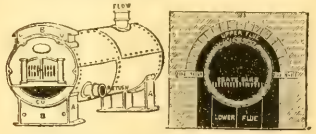
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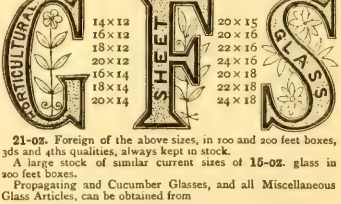
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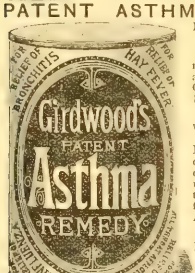
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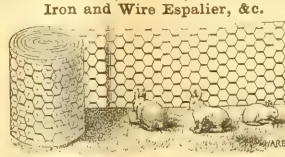
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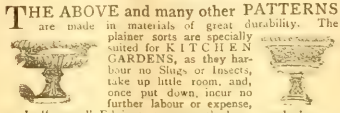
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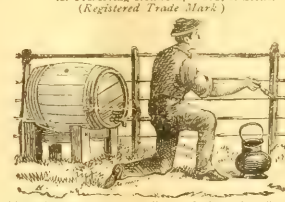
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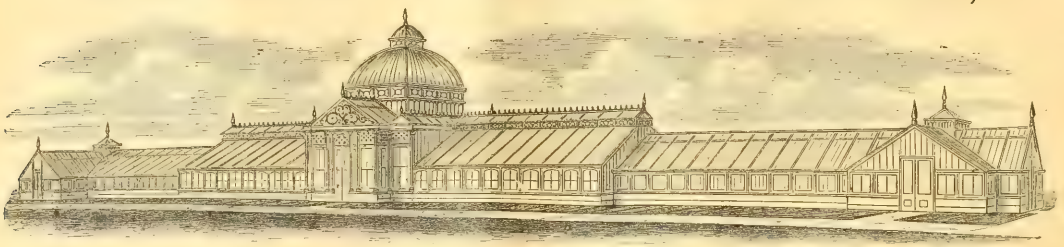
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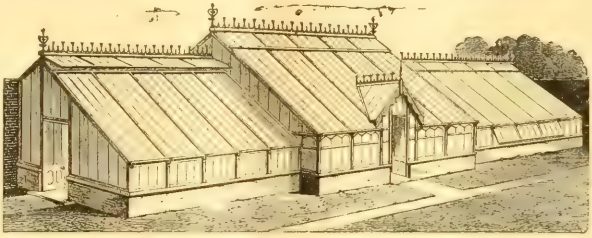
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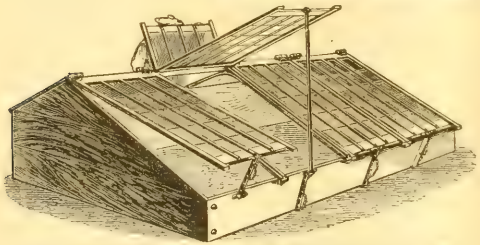
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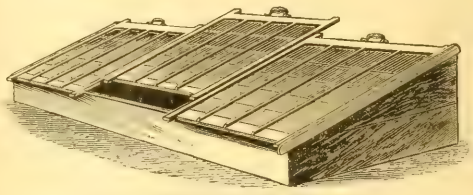
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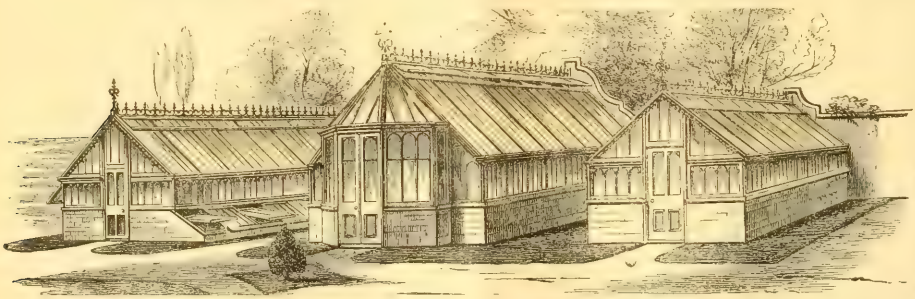
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THE

# GARDENERS' CHRONICLE.

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NOTICE!—COMMITTEE MEETINGS, Fruit and Floral, at 11 A.M. in the Conservatory, on TUESDAY NEXT, October 13.

SHOW of APPLES and PEARS, OCTOBER 13 and 14. Open on the 13th at 1 P.M.; on the 14th at 10 A.M.

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Notice of intention to Exhibit to be sent to Mr. A. F. BARRON, Secretary, Royal Horticultural Society's Gardens, Chiswick, on or before October 14.

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The NINTH ANNUAL EXHIBITION will be held on TUESDAY and WEDNESDAY, November 10 and 11, 1885. Schedules are in course of preparation, and will be forwarded when ready on application to T. JACKSON, Hon. Sec.

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BASKETS and LABELS supplied.

**Floral Commission Agency.**

A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of choice CUT FLOWERS in any quantity. A. Hill having had a large personal experience as Salesman in Covent Garden Flower Market for many years, is thus enabled to obtain the Highest Market Prices. Account Sales sent daily. Bankers and good Trade references. All Consignments to be addressed as above. Boxes, baskets, and labels supplied.

WANTED, a small regular Supply of Winter CARNATION FLOWERS in variety.

GEORGE EDWARDS, Balham Nursery, London, S.W.

WANTED.—Anthericum liliastrum; Double Daisies, various; Helleborus niger, altifolius, angustifolius; Tropæolum Hermine Grasshoff, Gloire de Boudeaux, bicolor, fl.-pl., Bowdon Beauty; double Primroses; Old Blue Polyanthus; Single White Hepatica, red, Barlowi, lilacina; Trolius napellifolium, Fortunei, fl.-pl.; Zonal Geranium, West Brighton Gem; Dahlias, show, John Henshaw, Georgiana; fancy, Miss Annie Melsome; Verbena, Shakespeare

H. CANNELL AND SONS, Swanley, Kent.

WILLIAM DENMAN, SALESMAN and HORTICULTURAL AGENT, Covent Garden, W.C., has now a DEMAND for EUCHARIS, ROSES, CALLAS, GARDENIAS, GLADIOLI, BOUVARDIA, CHRYSANTHEMUM, and other CUT FLOWERS in any quantity.

NOTICE.—WANTED, EUCHARIS, Yellow ROSES, STEPHANOTIS, TUBEROSES, BOUVARDIAS, CARNATIONS, and other Choice Flowers, for which there is a good demand now.—A. HILL AND CO., Floral Commission Agents, 52, Hart St., Covent Garden, W.C.

WANTED, Standard and Pyramid BAYS and LAURUSTINUS; also large DRACÆNAS, green or coloured.

E. COOLING, Mile Ash Nurseries, Derby.

WANTED, the "ORCHID ALBUM," by B. S. WILLIAMS. Second-hand, in good preservation. Apply, stating price, to 92 Letter Box, Dumfries.

**Sixpenny Telegrams.**

CARTER, LONDON, has been the Registered Telegram and Cable Address of James Carter & Co. for many years, and all communications addressed to Carter, London, by this means are delivered to James Carter & Co., ensuring best attention.

237 and 238, High Holborn, London, W.C.

RICHARD SMITH AND CO., NURSERYMEN and SEED MERCHANTS, Worcester, beg to announce that their Registered Telegraphic Address is

"SMITH, WORCESTER"

TELEGRAMS.—To enable our Friends to send Telegrams as cheaply as possible, we have Registered at the Head Office our Address thus—

"NUTTING, LONDON."

NUTTING AND SONS, Seed Merchants, 106, Southwark Street, London, S.E.

**The Sixpenny Telegrams.**

PETER LAWSON AND SON (Limited), Edinburgh, respectfully inform Correspondents that their Registered Address for Telegrams from all parts is "LAWSONS, EDINBURGH."

NOTICE.—Our Registered Telegraphic Address is "PERKINSON, NORTHAMPTON."

THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

SIXPENNY TELEGRAMS.—In order to allow these increased facilities for telegraphic communication to be taken advantage of, L. & S have Registered their Telegram Address, which is "LAIRD, DUNDEE."

W. P. LAIRD AND SINCLAIR, 73, Nethergate, Dundee.

**Telegrams.**

CONFIDENCE CHESTER is now our Registered Telegraphic Address for Telegrams from all parts. JAMES DICKSON & SONS

(*Old Established Nursery and Seed Business*),

CHESTER.

WHITE CHRYSANTHEMUMS in Bloom. Splendid Plants of Mrs. Cullingford and Madame Desgrange, full of flower, 18s. per dozen; twelve choice varieties, early flowering sorts, same price. Package free for cash with order.

EDWIN COOLING, Derby.

T. PEARCE, FLORIST, Hayes, Kent, has for Sale a quantity of NEAPOLITAN VIOLETS—good, strong, and well-established Plants, in bloom. Price on application. Remittance with order. On rail free.

PAUL'S NURSERIES, Waltham Cross, Herts (entrance from Waltham Cross Station). — Purchasers of ROSES, FRUIT TREES, ORNAMENTAL TREES, EVERGREENS, BULBS, &c., are invited, before purchasing, to inspect the stock at the Waltham Cross Nurseries, half an hour from London, Great Eastern Railway. Priced CATALOGUES free. WM. PAUL AND SON, Waltham Cross.

DUTCH FLOWERING BULBS.—HYACINTHS, TULIPS, CROCUS, &c. Priced Descriptive CATALOGUE post-free on application.

IRELAND AND THOMSON, Seedsmen and Nurserymen, 20, Waterloo Place, Edinburgh

**Ornamental Plant Nursery.**

JULES DE COCK, Ghent, Belgium, offers to the Trade:—AZALEAS INDICA, MOLLIS, and PONTICA; DEUTZIA, CAMELLIA, FERNS, PALMS, and SPIRÆA JAPONICA, in large quantities.

CATALOGUE free on application.

CAPE BULBS—CAPE BULBS. Capetown Botanic Gardens.

TRADE ORDERS now receivable for the coming season. Lists on application. RETAIL—Collections only, our own selection, from £1 upwards. ED. HUTT, Sales Dept.

CARNATIONS and PICOTEES.—First-class Cultural Certificate, Manchester, 1885. All the finest named varieties grown, my selection for cash, 6s. per dozen. Send for CATALOGUE.

R. LORD, Florist, Holebottom, Todmorden.

**Eucharis amazonica.**

G. NICHOLS, Park House, South Place, Kennington, S.E., has a large lot of flowering bulbs of the above, in 24-pots, to be sold cheap, lease expiring. Price on application.

FOR SALE, President STRAWBERRY RUNNERS. Apply

W. MANN, Mogden, Isleworth.

LOVEL'S STRAWBERRY RUNNERS, Strong, healthy, and well-rooted.

Sample of Plants, 3d. Price LIST free.

W. LOVEL AND SON.

Strawberry Growers. Driffield.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey

NEW STRAWBERRIES.—Laxton's King of the Earlies and The Captain.—These sterling novelties can with confidence be recommended. 200 trade and market firms already supplied. Strong runners now ready.

T. LAXTON, Seed Grower, Bedford.

## SALES BY AUCTION.

**Dutch Bulbs.**
Every MONDAY, THURSDAY, and SATURDAY.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68 Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'Clock precisely, about 800 lots of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other ROOTS from Holland, in excellent quality, lotted to suit the Trade and private Buyers.
On view morning of Sale, and Catalogues had.

**Thurday Next.**
10,000 WHITE ROMAN HYACINTHS.
10,000 DOUBLE AFRICAN TUBEROSES.
Important to Market Growers,

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE of BULBS on THURSDAY NEXT, October 15. The Tuberoses are unusually large, varying in circumference from 5½ to 8½ inches.
On view morning of Sale, and Catalogues had.

**Deptford, S.E.—Evelyn Estate.**
The land being sold for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Land, on MONDAY, October 12, at 2 o'Clock, in suitable lots, 2½ Acres of CHAMPAGNE RHUBARB ROOTS, and ½ an Acre of KALE.
Now on view. Catalogues of Mr. H. HICKS at the Estate Office, and of the Auctioneers, 67 and 68, Cheapside, E.C.

**Tuesday Next.—Established Orchids**
IMPORTANT UNRESERVED SALE of a fine COLLECTION of ESTABLISHED ORCHIDS, the whole of which are in the best possible health.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from H. W. Lowe, Esq., who is leaving Sydenham Hill, to SELL by AUCTION, without reserve, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, October 13, at half-past 12 o'Clock precisely, the first portion of his valuable collection, consisting almost entirely of specially selected varieties, including a large number of well-grown CATTLEYAS, comprising LABIATA, fine varieties of GASKELLIANA, IRIANÆ, MOSSIÆ, MENDELII, GIGAS, SANDERIANA, HOLFORDI, SKINNERI, and others; LÆLIA ANCEPS (fine specimen), L. PURPURATA; PHALÆNOPSIS STUARTIANA and SCHILLERIANA, CYPRIPEDIUM STONEI, LÆVIGATUM, BOXALLI, ROEZLI, SEDENI, &c.; DENDROBIUM WARDIANUM, JAMESIANUM; ONCIDIUMS, a large number of ODONTOGLOSSUM CRISPUM (Alexandræ), selected from the best importations, and amongst which are many beautiful varieties; O. ELEGANS, HALLI, and EDWARDI; VANDAS, &c.
May be viewed the morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

**Upper Clapton, E.**
EXPIRATION OF LEASE.
The whole of the NURSERY STOCK, Green and Variegated Hollies, 1000 Oval-leaved Privet, 2000 Euonymus, 300 Aucubas, Climbers, an assortment of clean-grown Fruit Trees, a few large Azaleas and Camellias, two GARDEN ROLLERS, MOWING MACHINE, LIGHTS, &c

MESSRS. PROTHEROE AND MORRIS will SELL the above, by AUCTION, on the Premises, The Nursery, Northwold Road, E., near the Clapton Station, Great Eastern Railway, on TUESDAY, October 13, at 12 o'Clock, by order of Messrs. Offord & Son.
Now on view. Catalogues on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

**Wednesday Next.—Camellias, Azaleas, and Roses.**

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 14, at half-past 12 o'Clock precisely, a consignment of CAMELLIAS, AZALEAS, PALMS, FERNS, and FICUS, from Belgium; 500 standard ROSES, from an English Nursery; home-grown LILIES, DUTCH BULBS, and various other PLANTS and BULBS.
On view morning of Sale, and Catalogues had.

**Sunbury.**
Four minutes' walk from the station, L. & S. W. Railway.
Two days' UNRESERVED SALE of young and thriving NURSERY STOCK, the whole of which has been carefully prepared for transplanting, by order of Mr. John Dawson, who is relinquishing the business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hawthorne Nursery, Feltham Hill Road, Sunbury, on WEDNESDAY and THURSDAY, October 14 and 15, at 12 o'Clock precisely each day, without reserve, the whole of the choice and thriving NURSERY STOCK, in fine condition for removal, including 50,000 Border Shrubs, an unusually fine assortment, consisting of 2000 variegated and green Hollies, 7000 bushy Aucubas, 2000 Laurustinus, 10,000 common and Portugal Laurels, 500 Sweet Bays, 10,000 green and variegated Box, 2000 Thuiopsis borealis, choice Conifers, comprising 500 Thuiopsis dolobrata, 2000 Chinese Arbor-vitæ, Retinosporas, Thuias, and Yews; a capital assortment of Fruit and Ornamental Trees, hardy Climbers, and thousands of Young Stock suitable to the Trade: also one GREENHOUSE, two FRAMES, Hot-water PIPING, and BOILER. May now be viewed.
Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.
N.B.—The Auctioneers desire to call particular attention to this sale, the stock being remarkably well grown, and in splendid condition.

**Friday Next.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 16, at half-past 12 o'Clock precisely, a fine importation of CATTLEYA GASKELLIANA, in good condition, and containing many large masses; CŒLOGYNE PANDURATA, a grand specimen of this curious and beautiful Orchid; LÆLIA PRÆSTANS, a fine lot of this rare Lælia; also

| | |
|---|---|
| Cattleya Dowiana. | Miltonia candida. |
| ,, Dormaniana. | Oncidium Marshallianum. |
| ,, superba splendens, Rio Negro variety. | ,, bicolor. |
| ,, Holfordi. | Sophronites grandiflora, finest variety. |
| Cypripedium Stonei. | Vanda Lowi. |
| ,, niveum variety. | ,, Hookeri. |
| Stanhopea Wardi, rare. | Zygopetalum Gautieri. |
| Burlingtonia fragrans. | ,, aromaticum. |

All in first-class condition. Also a fine importation of the rare LÆLIA MONOPHYLLA, received direct; and a consignment of SOPHRONITES and LÆLIA PURPURATA.
On view morning of Sale, and Catalogues had.

**Canterbury.—Expiration of Lease.**
GREAT UNRESERVED CLEARANCE SALE of 16 Acres of remarkably well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Kinmont & Kidd to SELL by AUCTION, on the Premises, The Vauxhall Nursery, Canterbury, about eight minutes' walk from either of the Canterbury Stations, on MONDAY, October 19, and three following days, at 12 o'Clock punctually each day, without reserve, in consequence of the expiration of lease, about 16 Acres of unusually well-grown NURSERY STOCK, in capital condition for removal, and offering exceptional advantages for procuring Trees and Shrubs for immediate effective planting. The stock will include thousands of Conifers and Evergreens, ranging in height from 1 to 8 feet; 500 Laurels, 2 to 4 feet; 2000 Spruce Firs, 2 to 5 feet; 4000 Rhododendrons, 2 to 5 feet; 13,000 Ornamental and Forest Trees, comprising 5000 Poplars, 2 to 10 feet; 2000 Larch, 4 to 6 feet; 2000 Limes, 8 to 12 feet; 700 fine Purple Beech, 5 to 12 feet; 1000 Filberts, 4 to 10 feet; 19,000 clean-grown Fruit Trees, consisting of 10,000 Standard, Pyramid, and Trained Apples, 5000 ditto Pears, 2000 ditto Plums and Damsons, 1500 ditto Cherries, Peaches, and Nectarines, 10,000 Standard and Dwarf Roses, of all the best sorts; and large quantities of other stock.
May be viewed. Catalogues may be had on the Premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

**Waltham Cross.**
IMPORTANT SALE OF WELL-GROWN NURSERY STOCK.
To Nurserymen, Builders, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Rumsey to SELL by AUCTION, on the Premises, Joyning's Nursery, ten minutes' walk from Waltham Cross Station, G. E. Ry., on TUESDAY, October 20, at 12 o'Clock precisely, a large quantity of beautifully grown NURSERY STOCK, which is in excellent condition for removal, including 3500 Laurels, 1 to 3 feet; 1500 Portugal Laurels, fine specimen Conifers, 1000 Flowering Shrubs, 500 standard Flowering Trees, 1000 London Planes, 8 to 15 feet; 1500 Ornamental Trees of sorts, 6000 standard and dwarf Roses of all the leading varieties, 1000 Roses in pots, for forcing; 1000 Bouvardias, in 48 pots, of the best kinds; Ferns, and other stock.
May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

**Lee, S.E.**
IMPORTANT to the TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. North & Son to SELL by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., about a mile from Three Railway Stations, on WEDNESDAY, October 21, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, comprising 2000 small Aucubas for pots; 4000 fine bushy Laurels of sorts, from 1 to 5 feet; 2000 oval-leaved Privet, 4 to 5 feet; 2000 Irish Ivies; 1000 Ivies of sorts; 4000 green variegated Euonymus for potting; 3000 Currants and Gooseberries; 1000 Standard and Dwarf Roses; 500 large Aucubas, 3 to 4 feet high and through, splendid specimens; 1000 Hollies and Yews, 2 to 4 feet; specimen Conifers in variety; 2000 Erica hyemalis, gracilis, caffra, and others, in 48 and 32-pots; and other MISCELLANEOUS STOCK.
May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

**Putney, S.W.**
IMPORTANT CLEARANCE SALE in consequence of the Expiration of the Lease.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Mahood & Son to SELL by AUCTION, on the Premises, The Windsor Nurseries, Putney, S.W., on TUESDAY and WEDNESDAY, October 27 and 28, the whole of the well-grown NURSERY STOCK; 5000 beautifully grown Hollies, all recently transplanted; 5000 Ivies; many thousands of Shrubs; the erections of Eight GREENHOUSES, numerous PITS, and all the HOT-WATER APPARATUS.
Further particulars will appear next week.

**West Wickham.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Cook to SELL by AUCTION, on the Premises, The Nurseries, West Wickham, on THURSDAY and FRIDAY, October 29 and 30, a large quantity of valuable and well grown NURSERY STOCK, all carefully prepared for transplanting.
Further particulars will appear next week.

**Flowering Orchids.—Special Sale.**

MESSRS. PROTHEROE AND MORRIS beg to give notices that their NEXT SALE of the above will take place on TUESDAY, October 27, for which they will be glad to RECEIVE ENTRIES as EARLY AS POSSIBLE.

**This Day, Saturday.**—(Sale No. 6988.)
PLANTS from Ghent, BULBS from Holland.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., this SATURDAY, October 10, at half-past 12 o'Clock precisely, a consignment of choice named CAMELLIAS, AZALEAS, RHODODENDRONS, DRACÆNAS, PALMS, and other PLANTS from Ghent, also 800 lots of first-class DUTCH BULBS in variety.
On view morning of Sale, and Catalogues had.

**Dutch Flower Roots.**

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.
Catalogues sent on application.

**Wednesday Next.**—(Sale No. 6990.)
SPECIAL SALE OF ORCHIDS IN FLOWER.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 14, at half-past 12 o'Clock precisely, a COLLECTION of ORCHIDS in FLOWER, including twenty-four fine plants of Lælia autumnalis atrorubens, L. Turneri, L. anceps, Cattleya Gaskelliana Cypripedium Spicerianum, Odontoglossum Alexandræ, O. Andersonianum, O. bictonense album, Oncidiums, Dendrobes, Sophronites, Mesospinidiums, &c.; also 250 lots of good ESTABLISHED and IMPORTED ORCHIDS from Messrs. Shuttleworth, Carder & Co., a small consignment of ORCHIDS received direct from Trinidad, &c.
On view morning of Sale, and Catalogues had.

**Valuable Established Orchids.**

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 15, at half-past 12 o'Clock precisely, the COLLECTION of ESTABLISHED ORCHIDS formed by the late Frederick Collins Wilson, Esq., of Waltham Cross, including two good plants of the true autumn-flowering Cattleya labiata, C. Mendelii, fine variety; Angræcum sesquipedale, C. Speciranum, three growths; C. caudatum, and C. roseum; Vanda tricolor, V. suavis, Dendrobiums of sorts, Odontoglossums, Oncidiums, Phalænopsis, &c.
On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No 6892)
ESTABLISHED and IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 15, five lots of fine ESTABLISHED ORCHIDS, from a well known private collection, including fine specimens of Oncidium Sanderæ, Angræcum descendens, Cattleyas, Odontoglossums, &c. Also about 250 lots of ESTABLISHED and IMPORTED ORCHIDS, from Mr. J. E. Bonny, including many rare species.
On view morning of Sale, and Catalogues had.

**Thursday Next.—Staines, Middlesex.**
To GARDENERS, FLORISTS, and OTHERS.

MESSRS. WALKER AND LAYTON will SELL by AUCTION, on THURSDAY NEXT, October 15, at the "Angel" Hotel, Staines, at 6 o'Clock, the Old Established FREEHOLD FLORIST'S PREMISES known as "Cullen's Nurseries;" together with the GOODWILL and STOCK-IN-TRADE.
Particulars of the Auctioneers, Egham, Surrey.

**Whittington Nurseries, 2 miles from Lichfield.**
SALE of a well-grown and vigorous NURSERY STOCK, at the above widely known Nurseries, of several thousands of Trees and Shrubs, including Standard and Pyramid Apples, Pears, Plums, Nuts, and other Fruit Trees, part in a bearing state; Spruce, Austrian and Laricio Pines, Oak, Ash, Elm, Beech, Sycamore, Chestnut and other Forest Trees; a large variety of Deciduous and Evergreen Shrubs, Hybrids and other Rhododendrons, a beautiful lot of Ivies, and Laurels, together with a choice selection of Cedrus, Cyprus, Junipers, Pinus, Retinosporas, Thuias, Yews, and fine Coniferæ, Clematis, &c.; a glorious lot of Maréchal Niel, Gloire de Dijon, Reine Marie Pie, Reine Marie Henriette, Gloire Lyonnaise, Climbing Devoniensis, and other favourite Roses: together with Camellias, Stove, Greenhouse, Seedling, Bedding, and other Plants, forming altogether one of the most attractive Nursery Stocks ever offered in the Midland Counties.

MR. GEORGE MARSDEN will SELL the above by AUCTION, by order of Mr. Holmes, at Whittington Nurseries, on WEDNESDAY, THURSDAY, and FRIDAY, October 21, 22, and 23, commencing at 10 o'Clock each day.
Conveyances will meet all the early trains up to 10 o'Clock each day, at the "Trent Valley" and "City" Stations, Lichfield.
For the convenience of purchasers, any lot or lots can remain on the ground until March 1, 1886.

**Great Sale of Planes.**

MR. WILLIAM RUMSEY'S SALE on OCTOBER 20, contains the finest stock of PLANES ever offered by Public Auction.
Catalogue of Sale on application to Joyning's Nurseries, Waltham Cross, N.

**Cart House Lane Nursery, near Woking Station.**
IMPORTANT SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. WATERER AND SONS have received instructions from Mr. Richard Collyer, whose lease is expiring, to SELL by AUCTION, on the Premises, as above, on TUESDAY, October 27, and two following days, commencing at 12 o'Clock precisely on each day, the FIRST PORTION of the well-grown NURSERY STOCK on the above land, in excellent condition for removal, having all been moved within two years, comprising a great variety of very fine Ornamental Evergreen Trees and Shrubs, including many Specimen Trees, 20,000 Green and Variegated Standard and other Hollies, 2 to 9 feet; 20,000 Yews, from 2 feet 6 inches to 7 feet; several thousand Common, Caucasian, and Portugal Laurels, Retinospora, Picea, Thuia, Cupressus Lawsoniana and erecta, Thuiopsis, Privet, and Rhododendrons; 5000 Spruce Firs, 2000 Half-Standard and Standard Roses of the choicest varieties, 60.0 Manetti Stocks, 6000 Crab and Plum Stocks, 15,000 Birch, Poplar, Ash, and Chestnut Trees, 2 to 12 feet; and other Stock.
The Auctioneere would draw the special attention of purchasers requiring plants for ornamental and effective purposes to this Sale, as the whole of the lots, including the Specimen Trees and Shrubs, are in perfect condition for removal.
May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at their Offices, Chertsey, Weybridge Station, and High Street, Walton-on-Thames, Surrey.

**IMPORTANT SALE**
OF
**SHRUBS, FOREST TREES, ROSES,**
*FRUIT TREES and HERBACEOUS PLANTS,*
AT
**John Stewart & Sons' Nurseries, Broughty Ferry, N.B.**
On WEDNESDAY, October 21.
**A. MONCUR, Auctioneer.**

TO BE DISPOSED OF, with Immediate Possession, a genuine SEED, FLORIST, and JOBBING BUSINESS, Nine Plant-houses, all heated on the most modern principals; a moderate quantity of Land, and an eight-roomed Dwelling-house, which may be had furnished. Situated in the main thoroughfare of a rising town, 20 miles from London (population 20,000), on the L. B. & S. C. and S. E. Railways, main lines.
J. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE DISPOSED OF, an old-established SEED BUSINESS (thirty years), at Rhyl, N. Wales. Commodious House, Shop, and Warehouse. Situated in a central part, and near the Railway Station, which is on the main line between Chester and Holyhead. The present owner retiring.
Further particulars on application to Mr. J. JONES, 50, Kinmel Street, Rhyl, N. Wales.

**Thornton Heath.**

In a prominent position. Good locality. Capital opening for a Beginner.

WELL ESTABLISHED NURSERY. Acre of Ground. Five Greenhouses. Lease 42 years. Rent only £12. No Stock.

Terms and particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

**To Nurserymen, Florists, and Others.**

TO BE LET or SOLD, on very advantageous terms, WILLS' NURSERY, situate in the Fulham Palace Road, Hammersmith, comprising an area of an acre and a half. There are several Hot-houses very efficiently heated by hot water on the premises. This Nursery would be invaluable to a Florist as a growing place for market, being so near Covent Garden; or the property, held for an unexpired term of sixty-six years, can be purchased.

Particulars on application to W. M. M. WHITEHOUSE, 25, Charles Street, St. James's, S.W.

TO NURSERYMEN and OTHERS.—The Proprietor of a good Nursery, 32 Acres in extent, situated on the high road, one mile from a county town, is desirous, from age (74), to give up business. No reasonable offer will be refused, either in the form of an Annuity or Purchase.

Further particulars on application to H. B. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDENS and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

WILLIAM CLAPHAM,
SHAW HEATH, STOCKPORT,
*LANDSCAPE GARDENER and ROCK ARTIST.*

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Alban's, where work can be seen. Tufa formation, Sandstone, Natural Rockwork to suit any locality.

**The Official Report of the Committee of the Orchid** CONFERENCE, held at the Royal Horticultural Society's Gardens, at South Kensington, on the 12 and 13 May, 1885.

THE ROYAL HORTICULTURAL SOCIETY will issue, about the end of the present month, a Full Report of the above.

This Report in book form of octavo size, and containing about 150 pages, will be distributed to all Fellows of the Society as a number of the Journal, and it will embrace:—

1. A Report of the proceedings of the Conference, including a Paper read by Mr. H. J. Veitch, F.L.S., on the Hybridisation of Orchids, with illustrations; and a Paper by Mr. James O'Brien, on the Cultivation of Orchids.
2. Botanical and Horticultural Reports by Henry N. Ridley, Esq., B.A., F.L.S., Natural History Museum, South Kensington, and F. W. Burbridge, Esq., F.L.S., Trinity College Gardens, Dublin.
3. An Alphabetical List of the Genera of Orchids.
4. A Catalogue of the Exhibitors and Exhibits.

It is proposed to admit a limited number of first-class Advertisements; and, as a large sale is anticipated in addition to the number of copies to be distributed, it will be a specially valuable medium for Orchid Growers and Manufacturers of Orchid Pots, Baskets, Rafts, &c., as well as to Fruit and Seed Growers, Florists, Horticulturists, Garden Implement Makers, &c.

Advertisements will be inserted in all issues at one price.

The Scale of Charges will be as follows:—

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All applications for Advertisement Spaces must be made to ADAMS AND FRANCIS (Advertisement Agents to the Royal Horticultural Society), 59, Fleet Street, London, E.C.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN that an ADDITION will be made to the PENSION LIST of this Institution in JANUARY NEXT. All persons desirous of becoming Candidates are requested to send in their applications to the Committee on or before November 4 next, after which day they will not be received. Preference will be given, in accordance with Rule 6, to those applicants (or their widows) who have been fifteen clear years on the books of the Institution.—By order,

E. R. CUTLER, Sec.,

20, Spring Gardens, London.—October 5, 1885

Printed Forms of Application can be obtained from the Secretary.

**To Landscape Gardeners and Others.**

THE METROPOLITAN ASYLUMS BOARD are prepared to RECEIVE TENDERS for LAYING OUT and PLANTING the GROUNDS of the Northern Hospital, now in course of erection at Winchmore Hill, N.

A Plan and Specification may be seen at the offices of the Architects, Messrs. PENNINGTON AND BRIDGE, 8, John Street, Adelphi, W.C., between the hours of 10 and 4 o'Clock, where and when Printed Forms (upon which only tenders will be received), may be obtained upon a deposit of £2 2s. being made, which will be returned upon the receipt of a *bonâ fide* Tender. Tenders duly sealed and endorsed "Tender for Laying-out, &c., Grounds of Northern Hospital," are to be delivered at the Offices of the Board, 37, Norfolk Street, Strand, W.C., by or before THURSDAY, the 15th instant.

The Board do not bind themselves to accept the lowest or any tender.—By order, (SIGNED), W. F. JEBB, Clerk.

37, Norfolk Street, Strand, W.C.—October 3, 1885.

PALMS, specially Hardy Grown for Cool Greenhouses and Dwelling-houses.—Latania borbonica and Seaforthia elegans, splendidly foliaged, 90 inches high, 12s. per dozen; sample plants, 1s. 3d.; same kinds, 12 inches high, 25s. per 100; sample 12 for 4s. All packages and parcels post-free. Postal orders to GARDENER, Holly Lodge, Stamford Hill, N.

LIVERPOOL EXHIBITION, 1886.

*Patron*—The QUEEN.

*President*.—H.R.H. The PRINCE OF WALES.

*Chairman*—DAVID RADCLIFFE, Esq., Mayor of Liverpool.

A few PLOTS in the EXHIBITION GROUND will be allotted to HORTICULTURISTS and NURSERYMEN desirous of EXHIBITING OUTDOOR GARDEN WORK.

Apply to the SECRETARY, 115, Exchange Buildings, Liverpool.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

APPLE and PEAR CONGRESS.—To be held in the Waverley Market, Edinburgh, on NOVEMBER 25 and 26, 1885, and following days.

The Council of the Royal Caledonian Horticultural Society intend to hold a SPECIAL EXHIBITION and CONFERENCE on APPLES and PEARS, in connection with the SOCIETY'S NEW WINTER or CHRYSANTHEMUM SHOW, on November 25 and 26, 1885.

To assist them in making the Exhibition and Conference a complete success, the Council respectfully solicits the hearty co-operation of all Fruit Growers,

Those who desire to contribute Fruit for Examination and Information, or otherwise to help the objects in view, will receive gratis, on application to the Assistant Secretary, Mr. WILLIAM YOUNG, 18, Waverley Market, Edinburgh, the Official Circulars and Forms, and all other particulars.

JOHN STEWART, Hon Sec,

Edinburgh, October 1, 1885

FARLEYENSE—FARLEYENSE—FARLEYENSE.—500 large plants to select from, many of them 2 feet through. Prices according to size.

App'y, G. YOUNG, Florist, St. Albans.

MR. DODWELL'S GRAND CARNATIONS, the finest grown. 2000 Plants, including Seedlings of this autumn, to be Sold for the benefit of the Prize Fund of the UNION CARNATION and PICOTEE SOCIETY.

Special terms to the Trade. Particulars on application.

Address—HEAD GARDENER, The Cottage, Stanley Road, Oxford.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s. BARR AND SON, King Street, Covent Garden, W.C.

**Fruit Trees and Roses.**

LAING AND CO.'S Stock of Fruit Trees, Roses, Shrubs, and Ornamental Trees is in prime condition for Transplanting. Prices are low. Early orders solicited. LIST on application.

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

**The Two Gems of the Season in Early Peas.**

MR. BURBURY desires to draw the attention of the Trade to these two PEAS "EARLY KENILWORTH" and "WILLIAM the CONQUEROR"—the latter forming an excellent succession to the former. They are both Blue Marrows of the greatest excellence. The stock is about 2 bushels.—Apply to printed testimonials, price, &c., to W. BURBURY, Florist, &c., The Crew, Kenilworth.

Notice.

H. LANE AND SON'S New Descriptive CATALOGUE of ROSES, FRUIT TREES, RHODODENDRONS, Conifers, Trees, Shrubs, Forest Trees, &c., free on application.

The Nurseries, Berkhamsted, Herts.

**The New White Hardy**

PASSION FLOWER, "CONSTANCE ELLIOTT," good plants.

HEDERA MADEIRENSIS VARIEGATA, the best Silver Variegated Ivy in cultivation, fine stuff.

Prices on application.

THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Novelties.

CUPRESSUS LAWSONI ERECTA ALBA, novelty.

,, ,, robusta, novelty. For description, see my Catalogue of spring, 1885

,, ,, Silver Queen, novelty.

CHIONODOXA SARDENSIS, novelty, awarded a First-class Certificate in London, March 24 1885.

SPIRÆA PALMATA ALBA, novelty, awarded a First-class Certificate in London, June 17, 1882.

THYMUS HANUSCHOSUS FOL. VAR, novelty. For description see my Catalogue of spring, 1885.

Prices on application.

A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

FOR IMMEDIATE DISPOSAL, a few hundred bushels of Johnson's selected Purple-top SWEDE and Green-top Scotch Yellow TURNIP, crop 1885; grown from stock seeds. Prices on application—Apply to GEORGE ELSOM, Seed Merchant, Spalding.

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FRUITING TREES in POTS. GRAPE VINES, FIGS, PEACHES, &c. Well-trained trees for walls, with fibrous roots, from Osborn's stock.

The choicest ROSES. STAKALE for Forcing. Inspection invited.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

FOR SALE.

4000 GOOSEBERRIES, 3 years, good, Crown Bob,
10,000 LAURUS ROTUNDIFOLIA, 2 yr., 1 yr., cut back.
10,000 LAURUS CAUCASICUM, 2 yr., 1 yr., cut back.
20,000 LIGUSTRUM OVALIFOLIUM, 1 ft. to 4 ft., bushy.

Prices, very low for cash, upon application to

J. B. BUTTERFIELD, Waltham Cross, or Stands 49, 50, and 51, New Flower Market, Covent Garden, W.C.

FRUIT TREES.—Fine healthy stock of extra-sized trees. Horizontal and Dwarf-trained APPLES and PEARS, Dwarf-trained APRICOTS, PEACHES, PLUMS, and NECTARINES; Standard and Pyramidal PEARS and PLUMS. Fruiting trees, in pots, of APRICOTS, PEACHES, NECTARINES, and FIGS. Prices on application.

D. S. THOMSON AND SONS, The Nurseries, Wimbledon.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may *now* be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

**Pelargonium.**

VOLONTÉ NATIONALE ALBA.—All who were unable to procure this splendid new Geranium in May should do so at once. Nice healthy Plants in pots now ready, 5s. each, free by post. Awarded First-class Certificates, Royal Horticultural Society, Royal Botanic Society, Crystal Palace, Manchester, and the principal shows of the season. Sample flowers forwarded on application.

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ROSES—ROSES—ROSES—Splendid Plants of the following and other fine varieties, in 7-inch pots, 24s., 30s., 36s., and 42s. per dozen:—Maréchal Niel, Gloire de Dijon, Cheshunt Hybrid, Devoniensis, Duke of Connaught, Homer, Isabella Sprunt, Madame Lambard, Madame Willermoz, Niphetos, Étoile de Lyon, Perle des Jardins, Safrano, &c. Our Roses are well known to be the finest and healthiest in the country. Complete LISTS of varieties in stock will be sent on application.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool.

Telegraphic Address—"COWAN, LIVERPOOL."

**To Nurserymen, Seedsmen, and Florists.**

DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C. Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs for sale at the above address from August up to end of Dec. in each year.

**"Irradiating the Present, Restoring the Past."**

A COMPLETE and ORIGINAL "LITTLE BOOK" of DAFFODILS, in its revised form, for 1885. *Price 1s., post-free.* There are a number of original Illustrations; and the Daffodils are the very first-opened Bulbs to be got, Ireland being so *genial* to the r cultivation. Over 130 sorts to select from. Early planting and early opening of Bulbs should give good results. Advantage offered by no other House in the Trade.—WM. BAYLEY JR. HARLINGTON'S Old Established Seed Warehouse, 24, Patrick Street, Cork.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 12s. per dozen plants, 120 per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3s. 6d. per dozen plants, 7s. 6d. per dozen clumps.

Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 25pf., free.

Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

**Autumn Planting**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.

The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

**New Catalogues.**

CHARLES TURNER'S New and Descriptive CATALOGUES for the season are now ready, and may be had post-free on application, viz:—

A CATALOGUE of DUTCH and other BULBS.

A CATALOGUE of ROSES, FRUIT TREES, VINES, and all kinds of HARDY TREES and SHRUBS.

A CATALOGUE of CARNATIONS, PICOTEES, and PINKS.

The Royal Nurseries, Slough.

**Vines—Vines—Vines.**

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. each.

The Vineyard and Nurseries, Garston, near Liverpool.

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VIOLETS—sweet Violets.—Marie Louise, Victoria Regina, Belle de Chatenay, 6s per dozen, 40s. per 100; Patrie, Comte Brazza, White Neapolitan, 12s. per dozen; twelve distinct varieties, package paid, 7s. 6d. per dozen; small plants, free by post, 3s. 6d. per dozen. The above are the best and most useful Violets in cultivation, have been grown in large clumps, and are now full of flower; it planted at once will ensure flowers all winter and spring.

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BMALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, GREVILLEAS, VINES in Pots, &c. An inspection is invited.

Trade CATALOGUES forwarded on application.

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HERMAN BUDDENBORG, BULB GROWER, Hillegom, near Haarlem, Holland (formerly BUDDENBORG BROS.), begs to inform his numerous Friends in Great Britain that he has established himself under his own name, and on his own account, as BULB GROWER, NURSERYMAN and SEEDSMAN; and kindly solicits the continuance of the same patronage and confidence as was entrusted to him for so many years. He will be pleased to receive the Wholesale Price LISTS of his Commercial Friends, and will mail his own free on demand.

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*SEE NEW CATALOGUE.*

APPLES, PEARS, PLUMS, CHERRIES.—All the finest varieties.—Pyramids, 9s. and 12s. per dozen; Standards, 12s. per dozen; Dwarf-trained, 15s. and 18s per dozen.

CURRANTS.—Black, Red, White, 12s. per 100, 2s. and 2s. 6d. per dozen.

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GOOSEBERRIES, 15s. and 20s. per 100, 2s. 6d. and 3s. per dozen.

STRAWBERRIES.—All the most reliable croppers. Strong runners, 2s. 6d. per 100; in 2½-inch pots, 10s. per 100; in 5-inch pots, for forcing, 25s. per 100; Laxton's New King of Earlies and The Captain, 2s. per dozen.

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Tea-scented and Noisettes, 15s. per dozen; 100s. per 100.
Beautiful Mosses, 6s. per dozen.
Climbing varieties, for Rockeries, Arbours, &c., 6s. p doz.
The above are all our own growing, and will grow and flower much better than Roses grown in a good climate and rich soil.

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*ORNAMENTAL and DECIDUOUS SHRUBS,*

**RHODODENDRONS and AMERICAN PLANTS.**

Fine quality, low prices. See New Catalogue.

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TULIPS, various colours, 5s. per 100; CROCUS, 1s. 6d. and 2s. per 100; SNOWDROPS, 2s. 6d. per 100. BORDER HYACINTHS, 16s. per 100; NARCISSUS, 5s. per 100; 500 assorted Spring Bulbs for 12s.; 1000 for 21s.

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**BEAUTIFUL FLOWERS for GARDENS.**

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SPLENDID PHLOXES, PENTSTEMONS, PINKS, PANSIES, in the finest varieties, 3s. 6d. per dozen.

HARDY HERBACEOUS PLANTS.—The most showy sorts, 3s. per dozen, 21s. per 100.

CARNATIONS and PICOTEES.—Good exhibition sorts, 6s. per dozen plants; fine Clove and Border Self varieties, 4s. per dozen—all from layers.

LILIES.—Candidum, Orange, and Tiger Lilies, 3s. per doz.

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**A GAY CONSERVATORY.**

CINERARIAS and HERBACEOUS CALCEOLARIAS, 1s. 6d. per dozen, from stores, our own fine strains.

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SPIRÆA JAPONICA, DIELYTRA SPECTABILIS.—Fine clumps, 5s. per dozen.

AZALEAS.—Ghent, mollis, pontici, or indica, all with buds, for forcing, 18s., 24s., and 30s. per dozen.

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36 Hyacinths, distinct colours.
50 Tulips, single early.
50 Tulips, double.
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30 Narcissus, incomparabilis.
24 Narcissus, Poeticus.
50 Anemones, double.
400 Crocus, in 4 distinct colours
100 Ranunculus, double.
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Hyacinths, 12 in 12 splendid named varieties.
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Crocus—
100 in 10 fine named varieties.
Narcissus, Polyanthus.
12 in 4 finest named varieties.
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Jonquils—
6 double, sweet-scented.
6 single, " "
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12 Choice Ixias.
12 " Sparaxis.
12 " Oxalis.
12 Grape Hyacinth (H. botryoides).
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HALF OF EITHER OF THE ABOVE FOR 12s. 6d.

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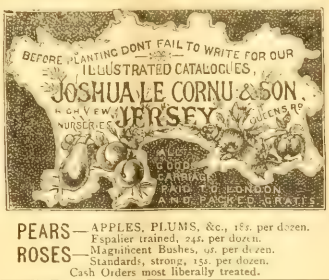
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PEARS—APPLES, PLUMS, &c., 18s. per dozen. Espalier trained, 24s. per dozen.
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We simply wish to say that we have many thousands of lovely little Plants, and of the best strain in the World. 1s. 6d. per doz., 10s. per 100, post-free. In small pots, 2s. 6d. doz., 18s. per 100.

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*September 21, 1885.*

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Beautifully Illustrated CATALOGUE of Choice Flower-Roots, Roses, Fruit Trees, Strawberry Plants, &c., free on application.

**DWARF ROSES.** Hybrid Perpetual, in splendid variety, fine plants, per doz., 10s. 6d.; per 100, 63s. Carriage free.

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*BULB MERCHANTS and NURSERYMEN,*
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With Special Low Prices of the following:—

150,000 Yellow CROCUS.

IRIS KÆMPFERI—in about twenty different shades of colour. This grand Japanese Iris is hardly yet known in this country, but should be grown by every lover of flowers. It is by far the largest flower of this family, with most striking colours. We offer well established English-grown Roots.

IRIS GERMANICA, in great variety. This collection contains twenty-four different shades of colour. Also many other varieties of Iris.

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15,000 NARCISSUS, Orange Phœnix.—The grand Double White Daffodil.

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**NARCISS and DAFFODILS.**

30,000 GLADIOLUS COLVILLI, The Bride, pure white variety, perfectly hardy. Should be planted in autumn. Also good for forcing.

50,000 SCILLA SIBIRICA.—This charming rich Blue variety is now as cheap as the Snowdrop, to which it makes a good companion and contrast.

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SEED AND BULB MERCHANTS,
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*SUPERB QUALITY.*
The Pick of Holland.
*Prices very moderate.*
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Reliable always. *Address in full—*
F. & H. DICKSON & SONS,
The Queen's Seedsmen,
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# TURNIPS
AND
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We are in a position to make very low prices for above, all grown from our own select stocks.

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Wholesale Seedsmen,
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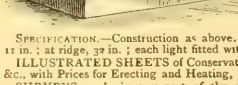


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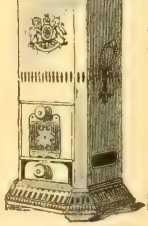
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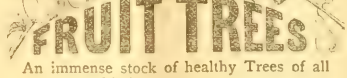
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PLANES, 14 feet and upwards.
POPLAR CANADENSIS NOVA, 12 to 15 feet.
,, BOLLEANA, 8 to 10 feet.
SYCAMORE, Common, 14 to 15 feet.
,, Purple, 15 to 16 feet.
,, Variegated, Standards, 10 to 12 feet.

### Weeping Trees.

BEECH, Weeping, Pyramids and Standards, 10 to 12 feet.
,, Weeping, Purple (true), Standards, 8 to 10 feet.
BIRCH, Young's Weeping, Pyramids, 10 to 12 feet.
,, Young's Weeping, Standards, 14 feet.
ELMS, Weeping, Standards, 10 feet stems.
HAZEL, Weeping, Standards, 8 to 10 feet.
LARCH, Weeping, 6 to 10 feet.
POPLAR, Weeping, Standards,
SOPHORA JAPONICA PENDULA, Standards, 8 to 9 feet.

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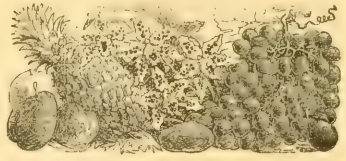
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THE

# Gardeners' Chronicle.

*SATURDAY, OCTOBER* 10, 1885.

## EDMOND BOISSIER.

IN our last issue we had occasion to mention the death of this eminent botanist on September 25, at Valeyres, his country seat, near Orbe, Switzerland. The importance of his services to botany and horticulture is so great that some fuller account of his career will be called for by our readers, while some tribute of acknowledgment and gratitude, however inadequate, is due from those to whom he rendered such valuable service.

Edmond Boissier resembled George Bentham in his devotion to botanical science, especially systematic botany, and like Bentham, his means allowed him to pursue the science of his predilection, while his freedom from professional or other official duties enabled him to prepare works of great magnitude, such as require uninterrupted application and patient care and devotion. Boissier was born in Geneva in 1810, and in early youth showed indications of his attachment to botanical pursuits. This attachment was naturally fostered and developed by the tuition and encouragement of the elder De Candolle. In 1837 Boissier visited Spain for the purpose of collecting and studying plants. The first results of this expedition were manifested in the publication of descriptions of new species and subsequently in the issue of a splendid work, *Voyage botanique dans le midi de l'Espagne pendant l'année* 1837. This work was issued in two quarto volumes, with numerous plates and references to the geographical distribution of the species. It was in his Spanish travels that Boissier met with Abies Pinsapo; and by means of seed collected and transmitted by him, this superb tree was first introduced into this country, as is testified in a letter now before us in which he mentions the despatch of seeds to Lindley at the Horticultural Society in 1839. The tree was found in the moutains of Granada, forming forests at an elevation of 4000 to 6000 feet, and flourishing in places where the snow lies for four or five months in the year.

Boissier's appetite for botanical travel was not appeased by his Spanish expedition. In 1842 he visited Asia Minor, and in 1848 he travelled in Syria and Egypt. The outcome of these travels was first seen in the shape of detached publications devoted to the description of the new species found by him in his journeys. These "diagnoses" paved the way for the complete and elaborate *Flora Orientalis*, a work in five large octavo volumes, which occupied the author from 1867 to 1881. This is a work which students of the flora of the Levant, and horticulturists concerned in the plants derived from Eastern Europe and Western Asia, find indispensable. This may be understood when it is said that the limits of the *Flora Orientalis* include Greece, the Adriatic Islands, Dalmatia, European Turkey south of the Balkans, the Crimea, the Caucasus, Egypt, and Asia Minor, Persia, and Affghanistan up to the British frontier, and Southern Turkestan.

Of this immense area Boissier investigated the flora. As we have seen, his own travels were wide, and his own collections extensive, but neither would have sufficed for the region in question. By the collection of specimens from other travellers, from his own richly stocked library, and his relations with the principal botanists of Europe, Boissier was enabled to elaborate this vast *Flora*, not as a compiler, but as an original observer, examining and comparing for himself all the available material. The consequence is that we have in the *Flora Orientalis* a singularly clear, well-balanced series of botanical descriptions, in which the critical judgment, no less than the industry of the author, are conspicuously revealed.

Boissier was in no sense a Darwinian. To the last he expressed his belief in the existence and essential immutability of species. In spite of this many forms originally considered by him as distinct species, and published as such in the "diagnoses," were relegated by him to the rank of varieties in the more matured and elaborated *Flora*. In another point Boissier differed from most of the leading systematists. In one sense this is a mere technical detail, but it is important also as an indication of his mode of thought and of the views he entertained as to the nature of species. Every plant, we may explain, according to Linnean ordinance, has two names, one generic, the other specific. These names are assigned in the first instance by the discoverer or describer of the particular plant, and which henceforth bears in botanical books a third name—that of the author of the species, thus, Nymphæa lutea, Linnæus. In course of time, from the examination of better material, or from more complete investigation, or other cause, it may be considered necessary by some botanists to alter the name of the plant by putting it into another genus and consequently giving it another generic name. Thus, in the instance above cited, Smith proposed the genus Nuphar as distinct from Nymphæa, and in consequence in most books the plant now stands as Nuphar luteum of Smith, Nymphæa lutea of Linnæus being cited as a synonym. The rule generally followed is to adopt the name proposed by him who has placed the particular species under what is, or what is assumed to be, the right genus, and to attach to the designation of the plant the name of the botanist in question, not that of the original describer of the plant, whose name, however, finds a place in the synonymy. But Boissier and a few others, considering species to be unchanging, naturally attached more importance to the specific, or as they consider the invariable, than to the generic characters, and consequently to the specific rather than to the generic name. Such persons consider that more importance pertains to the man who describes a plant for the first time than to him who puts it into its right place in the system, and that, therefore, it is an act of justice to retain his name for the combination of words constituting the name of the plant, even though the combination in question is not the one framed by him. Thus in the case above cited Boissier writes "Nuphar luteum, Linnæus *sub* Nymphæa," because he attaches more importance to the original discovery, or, in this case, to the delimitation of the species, than to its more correct allocation. One great objection to this practice is the fact that it attributes to Linnæus an opinion he could not possibly have had, since the genus Nuphar was published subsequently. Again, it is most desirable that it should be known that the suffix of the name of any botanist to a specific name is merely for purposes of identification and for greater facility of reference, and that of itself it confers neither credit nor discredit on any particular botanist. Hence the question of justice or injustice has really no place at all in the matter.

But to revert to Boissier's main work, we must not omit to mention his monograph of the species of Euphorbia in De Candolle's *Prodromus*—an excellent sample of his powers, and which was accompanied by the publication (separately) of a series of excellent illustrations. In his botanical work Boissier received much assistance from George François Reuter, a friend for forty years—one who accompanied him in his travels, and who, up to the time of his death, in 1872, was his constant companion and assistant. Reuter was, in fact, to Boissier what Bornet was to Thuret.

But while his life's work was devoted strictly to scientific botany, Boissier sought recreation, and occupied his leisure in gardening. He took great interest in the culture of alpine plants, of which he had a fine collection at Valeyres, and he was one of the founders of the Society for the Protection of Alpine Plants and of the Jardin d'Acclimatation at Geneva presided over by M. Correvon.

M. Boissier took much interest in the proposed Primula Conference, and had promised, in a letter to the present writer dated only a few weeks since, to communicate some observations on a weevil which attacked the primulaceous plants in his garden, and on the best means of destroying it. Orchids also were cultivated by M. Boissier, who possessed one of the few collections of these plants in Switzerland. M. Boissier's communications to this journal were only occasional, but we frequently had the privilege of consulting him, on behalf of our readers or ourselves, upon Eastern plants; and his last letter, received only a short time before his decease, lies before us unanswered.

His death removes from us almost the last of the great systematic botanists of that particular school, and such is the course of events that we do not at present see by whom the work is to be carried on in the future, but it is so essential that we do not doubt that eventually successors will be found to take up the work.

# New Garden Plants.

## CATTLEYA LUCIENIANA, *n. hyb. nat.?* *

A LOVELY Cattleya, with the bulbs and leaves of Cattleya Harrisoniana, and a flower much like that of Cattleya Isabellæ, Rchb., but much darker and richer in colour. The rather narrow sepals and petals are of a fine brown, most beautifully enlivened by a wash of purple. The lip is trifid. Its side-laciniæ are blunt triangular, the mid-laciniæ cuneate cordate emarginate, of the richest purple, the disc between the side-laciniæ having red keels. The side-laciniæ are pale yellow, with thick reddish veins. Column white, with purple lines on side, and numerous small points of purple. The front side of the column is whitish-yellow at the base, with numerous purple lines around the border of the fovea. One might take it for a dark Cattleya Isabellæ, and so I did on first sight; the lip, however, has the anterior lacinia granulate, and the inner base of the column is broken up in keels. There can be no doubt its parents are Cattleya Forbesii and guttata or granulosa. It is dedicated with pleasure to M. Lucien Linden, who kindly sent it to me. *H. G. Rchb. f.*

## ANGRÆCUM APICULATUM (*Hook.*) DORMANIANUM, *n. var.*

This is said to be very few-leaved, so that I highly appreciate the receipt of a leaf nearly a span long, and much in the way of those of Angræcum apiculatum Kirkii, unequally bidentate at the top, much cuneate at the base. It has a one-sided raceme, with flowers like those of A. apiculatum, but smaller, with deep vermilion-flaked ovaries and vermilion tops to the sepals. Having observed the variability of Angræcum apiculatum Kirkii I feel pretty sure that Mr. Dorman's plant belongs to this species. I feel great pleasure in dedicating this rare thing to my excellent correspondent, Mr. C. Dorman, of The Firs, Lawrie Park, Sydenham. As to this Angræcum, I had it from Mr. F. Sander. *H. G. Rchb. f.*

* *Cattleya Luciениana.*—Caule ac foliis Cattleyæ Harrisonianæ. Bat.; sepalis petalisque ligulatis obtuse acutis, labelli lacinia laterali bus triangulis obtuse acutis antrorsis, venis superne incrassatis, lacinia mediana cuneato-oblonga emarginata supra præsertim dense papuloso linea mediana disci interlacinias laterales plurifariam nata; columna basi antice pluricarinata. *H. G. Rchb. f.*

## SOLDANELLA ALPINA.

A DAINTY little plant, familiar in gardens forty or fifty years ago, but which had well-nigh disappeared, save from botanic gardens, till it shared in the *renaissance* of hardy plants which has happily set in. It is not uncommon in the higher pastures in Switzerland, where its dark green coin-shaped leaves and fringed slaty-blue flowers always attract attention. It is of easy cultivation in pots in rich but light loamy soil, or on the rockwork beneath the shelter of stones, where the plant can secure the moisture it needs.

Our illustration (fig. 96) is one of a series by Mr. Scott Wilson, taken "on the spot," and will be appreciated for its faithfulness.

There are two or three other species all much alike. S. minima is a reduced copy of S. montana, and there are white varieties of the latter occasionally seen in cultivation.

## GARDEN ROSES.

THERE has always existed a sort of quiet feud between botanists and florists, the former regarding the latter with some degree of horror as an awful intermeddler in his province, taking flower after flower into his hateful embraces, altering its character so that its own mother would not know it, and creating dire confusion in his nomenclature and arrangements—even the sacred ground of Orchids not being safe from his insidious attempts; and hence, in speaking of the florist's work he has various satirical phrases to express his dislike, and "damns with faint praise" his choicest work. [Darwin's researches and theories have altered this state of things. ED.] On the other hand, the florist looks upon a large portion of the botanist's demesne as "Weeds, sir, weeds;" wonders how people can go into ecstacies over a thing it requires a microscope to see, or which may be picked up in any hedgerow. Let the two walk together through a Rose show; the former will be dragging almost the arm out of the socket of his brother, while he bids him look at the simple beauty of Rosa rugosa or berberifolia Hardii; the latter is pulling his friend in the opposite direction to admire the full bloom beauties of a Marie Baumann or La France, or the golden cup of a Maréchal Niel, and asks him if it is possible that he does not see far greater beauty there than in those poor simple weeds.

The former have received an accession of strength of late years from those who are neither botanists nor florists, but who imagine themselves to be æsthetics, although the greater portion of them have as much claim to the title as they have to being readers, who skim over the monthly and quarterly Reviews, and think they can then talk on any subject under the sun; they have introduced the worship of the Sunflower, and the extravaganzas of "Patience" or "The Colonel" are not so much of exaggeration as some would imagine. These good people go into ecstacies over a single Dahlia, and condemn as barbarous the most finished show or fancy flowers; they condemn our Marie Baumann, Charles Lefebvre, &c., to hopeless perdition, and ask us to go into ecstacies over the wild Rose or some of the single Roses which are to be found in some gardens. When, then, we continually hear the cry for garden Roses, it is as well to look at the matter fairly, and see what it is that is wanted, or what persons mean when they cry out for garden Roses.

If there is one quality more than another for which a garden flower of any description is valuable, it is that of the length of its flowering period, and it is in this quality that so many of the exhibition Roses excel. And although the term hybrid perpetual is a misnomer, and the French one, *hybride remontante*, much more correct, yet it is amongst this class that we must look for Roses when they are so valuable, after the true Rose season is over, and we can in chill October, and even in November, gather for them a very respectable bouquet.

There are three divisions into which what are called garden Roses may be divided roughly: 1st, single-flowered Roses; 2d, the Moss, gallica, and hybrid China sections, which are in fact usually called summer Roses; and those exhibition Roses which by their vigorous growth and freedom of

flowering deserve the title. And with regard to the first of these, there are no doubt some very pretty and ornamental flowers. Such, for instance, is the yellow Persian Brier, a rich golden flower, blooms profusely when the plant is well established, but somewhat capricious; then there is the very pretty berberifolia Hardii (fig. 101), the Japanese Rosa rugosa, and rugosa alba. These, and others, will be discoursed upon by my friend Mr. Girdlestone, in the *Rosarians' Year Book* for 1886. Suffice it to say now, with regard to them, that while very pretty they are very evanescent, and when cut very rapidly fall. I remember some years ago a very lovely stand exhibited at a local show, which was entirely composed of the wild Dog Rose; it was very graceful and elegant, but, alas! before the great body of visitors came the flowers had passed away, and the judges were much taken to task for having given the 1st prize to such a faded exhibition. So also do I well remember a sound rating I once received from a lady because I had awarded a 1st prize to a breast spray, because there was a single Rose in it. I bore the rating meekly. It was in vain I said we had to judge by what things were at the time, not by what they might have been or would be.

The second class of Roses which come under the term garden Roses are those which are sometimes called old-fashioned Roses, and are mostly of the sections I have already mentioned. It is difficult, I think, to call the Moss Roses decorative; very beautiful they are in the bud, but open they are then sprawling, ill-coloured flowers. We all love the Moss Rose, but it is only for its bud and its sweet perfume that we love it. Then there is, again, the pretty little De Meaux, and the mossy variety of it. These ought not to be absent from the garden, although they can hardly be regarded as decorative. There can be no doubt that some of the hybrid Chinas, &c., such Roses as Chenédole, Charles Lawson, the old Cabbage, Blairii No. 2, Madame Plantier, &c., are very decorative objects when you get good plants of them, but then they all come into flower when the garden is full of Roses; they come in with a rush, dazzle and delight us by their beauty and perfume; but then they pass away, no second bloom of any kind is given forth by them, and in vain do we look for a flower after the rosy month of June is over. Moreover, I think we have amongst the hybrid perpetuals Roses which equal them in form, colour, and perfume, while they also gratify us by producing blooms at various periods until frost sets in.

The National Rose Society has done good service with regard to the hybrid perpetual, and Tea Roses, by giving a list of those which, although not exactly to be regarded as exhibition Roses, are highly decorative for garden purposes, and it is amongst these that I believe the real garden Roses will be found. So many persons who grow Roses follow out the directions which are given on the subject of culture, and especially on pruning, that the Roses in their gardens are formed on the model of exhibition roseries; the plants are kept dwarf, cut back tolerably hard from year to year, and thus do not develope into those large proportions which those who call out for garden Roses consider necessary; but there is no reason why this should be so. Take any vigorous growing hybrid perpetual or Tea, and instead of pruning hard, endeavour to make a bush of it, and there is no reason whatever why you should not succeed in having a grand decorative plant, and with good and well developed flowers on it. I remember some years ago seeing at Major Denniston's, at Roslea, on the Clyde, a bush of La France: it was at least 6 feet through, and about the same in height: it was one mass of flower, and yet so good were they that a dozen blooms from it obtained the 1st prize for the best twelve of any one Rose at the Helensburgh Rose Show—a sufficient proof that a decorative plant need not be full of "rubbishy" blooms. I have a plant of Souvenir de la Malmaison in my own garden which is thirty-three years old, it has been cut tolerably hard, as may be imagined, from the fact that it is even now not more than 3 feet high; it had this autumn upwards of 150 blooms upon it, and with a little care many of these might have been placed in a stand of 48's, although at its best it is not what is strictly called an exhibition Rose; and there are such Roses as Madame Isaac Periere, and Madame Clemence Joigneaux, of which it may be safely said you can make any sized plant you like of them; so vigorous is the former that a friend of mine, Mr. Williams, of Alderminster, near Stratford-on-Avon, has distributed plants of it among his parishioners to train up their houses, where its fine blooms will add greatly to the charm of the village. On going round my small garden this morning (October 2)even after all the cold frosty nights and drenching rains with which we were visited last month, I find that I can gather fairly respectable blooms of such varieties as Baroness Rothschild, Jules Margottin, White Baroness, Edward Morren, Captain Christy, A. K. Williams, &c. I need not say that what we ordinarily speak of as "dear old-fashioned Roses," have nothing but leaves on them.

And what shall be said of the Tea Roses? My Tea bed is now full of flower, notwithstanding the boisterous and severe weather to which they have been exposed. I can gather a sheaf of them any day I like, and it should be remembered that some of the very best exhibition Roses amongst them are also the most vigorous growers; take, for example, Marie Van Houtte: this is quite vigorous enough to be made a pillar Rose, and yet what can be more exquisitely lovely than it is? Then Madame Lambard is one of the best growers and the freest autumnal bloomer that we have, while its varieties of colour make it something remarkable. I have cut from the same branch a flower of brilliant red and another pure yellow, and this I think is one of its great charms. Perle des Jardins, Bouquet d'Or, Rubens, Comtesse Riza du Parc, Jean Ducher, are all varieties that are now giving their third series of blooms, and they are as vigorous as Roses need be; and, in fact, where Teas can be grown in the open they are of all classes that which gives the most enjoyment for the longest time, blooming early and late.

If then these statements are deserving of consideration, the conclusion that might be drawn from them is this—that no garden ought to be without some few of the summer-flowering Roses, moss and others; and that where space is of no moment, a goodly number of them may be grown, and treated in any manner that one likes; but that those whose space is limited will do well to rely for garden decoration on the more vigorous growing of the hybrid perpetuals and the Teas, as giving them a longer period of blooming, and at the same time beautiful and lasting flowers. *Wild Rose.*



Fig. 96.—Soldanella alpina. (see p. 456.)

## THE HOME OF LÆLIA MONOPHYLLA (Hook.).*

During a recent collecting trip in the St. Andrew's mountains it was my good fortune to meet with this exquisite little plant in fine condition and in fair quantity. The elevation at which it grows is some 4500 feet above sea-level, in a temperature of 65°—66° Fahr. (mean annual). The stems and lower branches of trees, covering a ridge trending from east to west, were for the course of some half a mile bearing numerous specimens of the plant in full flower. It appeared to prefer the naked or slightly moss-covered stem to the knaurs or places containing decomposing vegetable matter, usually the favourite resting-place of many of the native Orchids. It would appear to be freely reproduced from seed, as young plants were present in various sizes from a quarter of an inch upwards. In its young state, and even when mature, unless in flower, it would often be mistaken for young plants of the common and more widely distributed Tetramicra montana, Grisebach. The sparingly sheathed scape varies from barely 2 inches to more than 6, and the leaves from 2 to 4 inches, while the whole plant sometimes measures 1 foot in length, bearing flowers of a size corresponding to its vigour. The plant was well figured and described by Sir Joseph Hooker at t. 6683, *Bot. Mag.*, but though the figure without doubt correctly represents the plant as seen under cultivation, it gives but partially its habitual characteristic of pendulous growth as seen under natural conditions in its native home, in the shady primæval forest.

It was noticed that plants were seldom found at a

* *Synonymy.*—Lælia monophylla, N. E. Brown, *Gardeners Chronicle*, vol. xviii., p. 782; Trigonidium monophyllum, Grisebach, *Fl. Brit. West Ind.*, p. 629; Oncidesmia monophylla, Bentham, in *Gen. Plant.* vol. iii., p. 526. (From *Bot. Mag.*)

greater height from the ground than about 10 or 12 feet, a fact which would apparently indicate that it requires protection from the influences of sun and wind, to which it would be exposed if growing at a greater height. The plant at present has been found in but two localities, about 6 or 8 miles apart, at similar elevations, and though it would thus appear to be extremely local in its habitat, the possibility is that it will in couse of time be also met with in other parts of Jamaica situated under the same conditions as to elevation and temperature. *J. H. Hart, Superintendent Government Cinchona Plantation, Jamaica, September*, 1885.

## "THE MOTE."

THE Mote Park, near Maidstone, is the residence of the Dowager Lady Howard de Walden. In proceeding from Maidstone to the gardens the visitor passes an ornamental lake, well stocked with waterfowl, which forms a very attractive feature. Where a large establishment like this has to be regularly supplied with fruit and vegetables the means at the command of the gardener have to be very liberal, and they are so here. The ranges of fruit-houses are very extensive; but it is necessary to make additions to them, and the work has been entrusted to Messrs. Foster & Pearson, Beeston, Notts, who are carrying out the details of the work entrusted to their charge in a very able manner.

The most noticeable object in the hothouse department is a range of five vineries containing excellent crops of Grapes. The late house is planted with Lady Downe's, Alicante, and Gros Colmar. The next house is a Muscat, then a house for early Hamburgh; next a house of well-coloured Muscats; and lastly, a house that has but recently been planted with Black Hamburgh. The young Vines have made very even and vigorous growth, and are carrying their first crop of splendid bunches; but it is of the older Vines that a lesson might be learned most useful to the members of the ancient craft. When Mr. Davies took charge of the gardens, experienced Grape growers were of opinion that the best thing to do with the Vines (which had got into bad condition) was to grub them up, remake the borders—of course at considerable expense and loss of time—and replant with young Vines. This arrangement did not quite meet with the ready approval of the new gardener; he thought it would be better to try what could be done with the old Vines; and with no more expensive alteration than good surface-dressings judiciously applied, and careful management of the internal arrangements of houses—a good system of ventilation, watering, sprinkling the paths and surface of the borders, &c., the Vines are now bearing large crops of as good grapes as need be placed upon any table. Here, then, I think a lesson may be learned, that it is not always well for gardeners to make changes of a too radical kind, nor to put their employers to expenses which may be unnecessary; but Mr. Davies is evidently a master of Vine culture, as in another house we find a set of young Vines in pots grown from eyes during the present season, and their appearance suggests that next year they will be laden with a heavy crop of Grapes; and if further evidence be wanted, here is another house containing a lot of pot Vines in fruit that had been grown from eyes last year. The Vines are in 13-inch pots; and they have borne on an average 18 lb. of Grapes. Some of the bunches that have been cut weighed 3 lb., and others hanging on the Vines promise to make good the statement made to me by Mr. Davies to the effect that when such heavy crops are grown on pot-Vines the Grapes do not colour well, but the flavour is excellent.

Peaches and Nectarines are also well grown. There are several long houses, mostly lean-to, devoted to their culture; they are neither lofty nor wide. Most cultivators have found out by experience that large houses are not the best for fruit culture, and for Peaches wide and high houses mean a loss of capital. Mr. Davies considers Royal George the best Peach. Barrington is also grown for a late one, and of this I saw some superb specimens, which would have a very fine appearance on the dessert-table. The three Nectarines most esteemed are Pine-apple, Violette Hâtive, and Stanwick Elruge. The trees in pots were in excellent condition, and had a fine effect placed in a single row alongside the path. We have grown our Peaches and Nectarines on the same principle as they are grown here; that is, some planted out, and a greater variety in pots. It is very interesting indeed to grow and prove new or scarce kinds in pots; in some cases the fruit from pot trees is not only more beautiful, but of better quality.

Large quantities of Melons are also grown; the houses for these have much steeper pitch than one usually sees. The Melons succeed quite as well in such houses during the summer months, and in winter they do well in these, when the fruit would be worthless from houses with roof-lights at an angle of 45°. Some young plants were being prepared to be planted as soon as the crop at present ripening is removed. These would bear fruit of good quality to ripen at Christmas. The varieties grown are hybrid Cashmere and Eastnor Castle.

Stove and greenhouse plants are grown in many houses, the plants mostly of small size, suitable to the requirements of such a large establishment. In one hothouse I found some very fine plants of Eucharis amazonica; the largest and best was grown in a 12-inch pot; there were nine spikes of flowers on it, and from seven to eight flowers on each. This large plant had flowered three times in a year, the small ones twice in the some period. The healthy condition of the plants led to a conversation on the recent losses in some gardens from disease. We seemed agreed on the point that the probable cause of some losses was in the management of the plants; and since I was at The Mote one good grower called here, and as our plants had the same healthy appearance I was asked if we had ever had any disease, and as I replied in the negative he remarked it was his opinion that disease was only a creation of the brain of some cultivators. [It is, however, only too real. ED.] I may remark that the Eucharis dislikes to be disturbed at the roots. When the bulbs have been parted out separately and repotted, they very often decay at the roots, some die, others take a long time to recover, and it is only by great care in watering, and also in other details of the management, that they ultimately recover themselves and grow again into good flowering specimens. It is needless to say that the decaying bulbs soon become infested with fungoid growths, which may be considered a disease by some, but which is doubtless only the natural result of decay. [There is not the slightest doubt that the mites eat the healthy bulbs. ED.]

An important feature is the collection of Orchids in course of formation; some of the choicest species, and varieties of species, have been purchased, and it is very interesting indeed to an Orchid fancier to notice the recently imported plants, and to make a comparison in the mind's eye of those in his own and others collections. Here in the Mexican-house are a few plants of Cattleya Lawrenceana, one of them with a strong sheath. The white Lælia anceps, purchased from the immense importations landed in London in the spring, is doing as well here as I have seen it anywhere, but the growths have been rather disappointing. The bulbs were very plump when purchased, and I expected to see many flowering-sheaths, but we have none. I saw none here, nor have I seen them anywhere else as yet. I see they are again making a fresh start. Utricularia Endresii was nicely in flower, and the pendulous spikes of pale bluish flowers are quite charming. A fine plant of Zygopetalum crinitum was expanding its distinct and beautiful flowers, three strong spikes on one plant. Fine masses of Mormodes luxatum eburneum, one of them flowering, all developing fine bulbs. This is a very beautiful Orchid, and should be grown in every select collection. Schomburgkia Lyonsii is represented by two plants, one showing two spikes, the other one. Oncidium crispum gratidiflorum is forming good bulbs, which are certain to produce good spikes next year. This is a splendid Orchid. Odontoglossum bictonense roseum is a very beautiful form of the species. This, by the way, does best in a cool house, but it was doing well here. Barkeria elegans was also in flower; it is a charming little plant, with very beautiful flowers.

In the warmest house Trichocentrum albo-purpureum was diffusing its sweet perfume; it has curious but not pretty flowers, with brown sepals, petals of a purple tint, and lip white. The pretty little Ionopsis paniculata was well furnished with clusters of bluish-mauve flowers. A large mass of Coryanthes macrantha had flowered; it had been placed near the roof-glass just as it had been imported. The plant formed a large, irregular, roundish mass; probably inside was the ants' nest, on which this curious product of the vegetable kingdom subsists; one large black ant crawled out from the interior while I was looking on it.

I found in another part of the garden a fine collection of show Auriculas, and also a very choice gathering of the best named Amaryllis. One seldom sees better grown bulbs than these were, and I found the whole of them in a cold frame from which the lights had been removed to expose the plants to sun and air. In such an extensive garden as this one might linger over the choicest treasures of many lands, and fill pages of descriptive matter.

I had just time to take a hurried run through the hardy fruit garden, and what I saw there made me envious. Apples and Pears were a good crop, and the quality of the fruit was such as cannot be excelled in any other county. The choicest Apples and Pears are grown on oblique cordons; these were loaded with fruit, where they had been protected in the spring by close netting. Not always does the protecting material save the crops, and knowing this, I inquired what material had been used? It is obtained from Cornwall, and is termed Eddy's No 3 shading. Where no protection had been given to the trees many had failed. On a wall facing east some upright cordons were loaded with splendid fruit. The varieties, such as Williams' Bon Chrétien, Marie Louise, Emile d'Heyst, and Durandeau were very remarkable, the last having the finest looking fruits. The garden has suffered much from drought, and the crops of vegetables and fruits have been kept up to a high standard by much and judicious labour expended on watering. *J. Douglas.*

## LESCHENAULTIAS.

THE Leschenaultias—or more properly Lechenaultia, after the French botanist M. Lechenault—are most distinct and charming greenhouse plants, that are perhaps in danger of being lost to cultivation altogether. The genus seems to be peculiar to New Holland, from whence they have been introduced during the last sixty years, and they have been cultivated during that period to a high state of perfection. At no period during the last half century have they been so much neglected as they are now. One visits garden after garden and nursery after nursery, and in none of them are such plants as these placed in a prominent position. So much are they kept in the background, or not kept anywhere, that young gardeners are likely to grow up quite unaware of the fact that such plants are in existence. I believe Messrs. Low, of Clapton, Messrs. Veitch, of Chelsea, and perhaps other large firms, could produce most of the species now in cultivation, but perhaps they are seldom called on to do so, and gentlemen in the trade cannot afford to grow to any large extent plants that that there is no demand for. The whole genus consists of easily cultivated plants; being natives of New Holland they are greenhouse plants, and their cultivation may be summed up in a few sentences. They will form either large or small specimens according to the amount of pot-room they receive. I have grown and flowered nice little specimens in 6-inch pots; but if these are intended to be grown on into large specimens, the plants must be repotted before they become anything like root-bound, or are checked in their free growth. Let us suppose a healthy young plant of any of the species is growing in a 5 or 6-inch pot, and that it is ready to be repotted. The potting soil ought to be two parts of turfy peat and one part of decayed turfy loam, a good sprinkling of coarse silver sand, some leaf-mould, and broken up charcoal. Drain the pots well, for in this consists the future well-being of the plants. Over the drainage put some fibre from which most of the peat particles has been beaten out with a stick. Pot the plants into 7 and 8-inch pot, without disturbing the ball of roots much, and ramming in the compound moderately firm. In shifting a plant from one pot to another, the roots ought to be more on the wet than the dry side; the potting soil must not be too dry, and when the plant has been potted place it in a light airy place in the greenhouse, but do not be in a hurry to give any water. In dull cold weather water might not be required for a week, in dry hot weather it might be necessary to water them in twenty-four hours. When I was a young gardener, I was often troubled to know how often a plant should be repotted. Hard-wooded plants, such as these, require considerable experience to deal with them in a satisfactory manner.

One plant may grow away freely, and another under the same conditions act quite contrary to that.

Suppose the plants do grow away freely, and that they are repotted in March: they would have to be shifted into larger pots in July or August, which would give them a chance to be well established before the winter, and they would require repotting again in March of the following year. By that time they will be large healthy specimens in 12 or 13 inch pots. The most troublesome of the insect pests which attacks the leaves and shoots is greenfly. It is the same colour as the leaves, and clings to them so closely that it is sometimes not observed until mischief is done. The plants when small may be dipped in tobacco-water, or fumigated. The shoots must be tied out, and regulated with neat sticks, else they hang over each other, and form heaps or thick clusters. L. formosa was the first introduction. It was sent to this country in 1824, and immediately became popular. It forms immense masses of scarlet flowers, and when well grown is a very showy greenhouse plant. Since that date many fine species have been introduced from the Swan River colony—L. biloba in 1840. The variety major is one of the most beautiful and distinct of greenhouse plants, but it cannot be induced to grow into a nice bushy specimen; the shoots grow in an upright position, and in tying them out they will snap off at a joint. They do not form a bush unless the young shoots are constantly stopped. Some twenty years ago this plant was quite a pretty feature in collections of stove and greenhouse plants at the London exhibitions.

L. splendens and L. arcuata were discovered by Drummond in the Swan River colony, who sent seeds to Messrs. Pince, of Exeter, who raised plants, and first flowered them in England. L. splendens is a very handsome species, speedily growing into a well-formed bush; its brilliant scarlet flowers are very effective. Those who would be desirous of growing a collection might add L. Baxterii, L. oblata, L. laricina, and L. glauca—that is, if they are all in cultivation, and to be obtained in the usual way of trade. *J. Douglas.*

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Continued from p. 421.*)

Ashburton and Buckland.—Before leaving Totnes we had an indication of the proximity of the mining industry, in a large wooden platform with a tramway adjoining it, near the "Plains" in that borough, upon which ore was spread out; but at Ashburton, a district stated to yield not only slate, but also umber and other metallic ores, but little seemed to be doing in this way. In a country of water-power, however, mining makes comparatively little show beyond a big wheel and the chimney of the pumping-engine by the side of more or less overgrown heaps of waste, that may be conspicuous on the horizon, as is the deserted "Druid" mine, on the road from Ashburton to Buckland: there is none of the smoke-blackened absence of vegetation that marks the reign of coal and steam. The little town of Ashburton, with its North, East, and West Streets, meeting at a point that has on a Wednesday to do duty as a cattle market, with its large, neatly restored church, and its "Latin school," is as quiet and as clean as Totnes; and one feels no difficulty in believing in the authenticity of the doorway and leaden pump of "Tudor Buildings" in North Street, said to date from A.D. 1490, though admittedly restored. On askingthe verger if there were "any brasses in the church" we got the reply, "Oh, yes; there's two chandeliers!" Round the church is a fine young plantation of Conifers, such as Cupressus macrocarpa, Thuias, &c., that seem obviously in air and soil that agrees with them. One of the peculiarities of South Devon that at once strikes a geologist, is the fertility of almost all the soils into which the various rocks disintegrate, whether slate, limestone, or granite.

Leaving the well-kept garden of the "Golden Lion," in which we heard that neither Pears nor any but bush fruits were abundant in the district, we started next morning for the special pride of the Upper Dart, the Buckland Drives, through the property of B. J. P. Bastard, Esq. Leaving the high road rather less than 2 miles north of the town, we found ourselves in a new country, a land of Heather and dwarf Furze, of Musk Mallow and Devil's-bit Scabious, of Scotch Firs, limestone crags, and woodants' nests. Our road ran at a considerable height above the level of Ashburton or of the Dart; but above it, on our right, the ground sloped rapidly upwards for several hundred feet more. Clambering up one remarkable crag, known as Answell Rock, where it seemed as if some giant quarryman had been recklessly hurling down a heap of angular blocks of grey limestone, we gained a magnificent prospect from its summit. Around was a carpet of crimson Heather, broken here and there by ghostly patches of its dead stalks, that bleach so remarkably, or by a grey mass of stone overgrown with Reindeer moss (Cladonia rangiferina) and other lichens: to the north, were the heights of Buckland Beacon, with its altar-like summit, Rippon Tor and Hey Tor, the latter in the mists of distance; and in front wound the silver streak of the Dart among the wooded slopes of Holne Chase and Buckland, some 800 or 900 feet below our feet, whilst beyond appeared those characteristic heaps of granite, the "tors," that crown the otherwise gently rounded hills of Dartmoor. Descending to a little stone bridge over a tributary streamlet, dashing down amid rocks and Ferns, beneath a grove of trees where—

"Hard by, a cottage chimney smokes,"

we reached Buckland Court, Mr. Bastard's residence, the gardens of which were our primary destination. The kitchen garden, facing south, has been established only two years, and the gardener, Mr. Leach, who received us with every courtesy, has many thieving enemies to contend with from the surrounding woods. He has good soil and plenty of peat and leaf-mould within reach, whilst a stream runs through the garden, with a straight course which, though planted with Osmunda and other Ferns, is certainly an opportunity for beauty neglected. There had been a good crop of Raspberries, Strawberries, and Peas, though the latter were now suffering from drought, and here, as elsewhere in South Devon, Fears were a failure. The fine Lilium auratum that had been out for two years, and the large clumps of Fuchsia, were enough to cause envy in the heart of a Londoner; and, though his flower-garden is overshadowded by trees, and he has but little glass, Mr. Leach has Pentstemons and Gloxinias that would be a credit to a place where gardening was of more account than it is in "the garden of England."

Glancing at the carved wooden chancel-screen in the church we re-entered the woods, where Woodruff, Periwinkle, and many Ferns and lichens, luxuriated under the shade of some exceptionally fine, straight-stemmed young Yews, mixed with Birch and other timber. Large clumps of Blechnum, with fronds 15 inches in length; of Lady Fern, over 3 feet high; Lastrea Oreopteris, and a carpet of Whortleberry, the curious tufts of Usnea barbata, and many other lichens and mosses, the berries of the Rowan and the Gueldres Rose, lent their charms to the path that led us down to the romantically beautiful banks of the Webber, or Webburn, which is undoubtedly the most beautiful of the tributaries of the Dart. Through a thick wood, and without actual cascade, this typical torrent scrambles over rounded ledges of moss-grown rock in silver foam, swirls round a black pool, where the sunlight through the leaves glances upon yellow shingle, to rush in an amber torrent through a space a few inches wide between two immense boulders, and then recommences its succession of foaming fall, still pool and rushing, bubbling torrent, again and again, for 2 or 3 miles of descent. It reminded me of no spot so much as of Stock Ghyl, below the Force; but then the distance thence to Ambleside is trifling compared to this long woodland panorama of beauty.

Here we found ourselves now upon granite, where pink and white felspar crystals glistened as the water distilled over them from the dripping mosses and Ferns of the slope above, and now upon black or dark grey Devonian slate or limestone, where the Golden Saxifrage (Chrysosplenium oppositifolium) flourished under a similar dripping well, and where the Lady Fern sent up fronds that we found by measurement to be 4½ feet in length. Holly, small-leaved Lime and Alder, were plentiful hereabouts, and upon the leaves of the Lime was a gall very similar to that well nigh universal on those of the Alder.

Following the Webburn down to its confluence with the Dart, we enjoyed the union of two classes of beauty to produce a third. The woodland stream came dashing from beneath a stone archway into a far broader, shallower stream, coming from between slightly sloping banks of barren moorland, and flowing here over a low-lying shelf of slaty rock that jutted out into mid-channel. Here on a healthy patch, just at "the rivers' meet," we found our first specimens of the lovely little Ivy-leaved Bell-flower (Wahlenbergia hederacea).

From the bend which it makes on receiving the Webburn, the Dart enters upon a new stage in its beauty. For the next mile its course is virtually a winding gorge, with ground rising rapidly on either side to a height of several hundred feet. The now shallow stream, shrunken by drought, left bare patches of the granite sand that it had coarsely ground off the rocks of the moor, and over some of these now empty pools we noticed the red leaf-stalks of the Coral Linden (Tilia corallina). Meanwhile, as we were gradually convincing ourselves that what appeared like mere shrubs on the opposite hills of Holne Chase were indeed full-sized Oaks and Birches, the latter flecked, here and there, with autumnal yellow, with slow and solemn flop of wings, two herons sailed overhead on their way up stream. At various places the rocks on either side of the river, though thickly grown with trees, overhang precipitously, as at the well-known "Lover's Leap;" but, after leaving the Buckland estate near the prettily-situated Holne Bridge, the remaining 2 miles of the return walk to Ashburton is comparatively uninteresting. Remembering, however, that Charles Kingsley was a native of the village of Holne, some 2 miles off among the moors, we cannot help feeling that it is not strange that he retained through life so strong a love for moorland beauty. *G. S. Boulger.*

(*To be continued.*)

## INTERNATIONAL POTATO EXHIBITION.

### Trial Culture of Seedling Potatos, 1885.

By permission of the Royal Horticultural Society the seedling Potatos entered for the International Exhibition have, as in former years, been grown at Chiswick under the superintendence of a sub-committee. Mr. A. F. Barron has carried out the views of this sub-committee to their complete satisfaction, and they have made a report that will serve as the basis of action for the judges at the exhibition.

The seedlings sent for trial were forty-two in number; they were planted in good time on a well-prepared plot of ground, fully exposed as regards light and air, but having the advantage of shelter sufficient to ward off light spring frosts. They suffered no check from frost, and throughout the season there has not been seen upon the shaws the slightest sign of disease. But the long-continued droughts with frequent low night temperatures delayed growth, the early liftings being in many cases insufficiently matured for a sufficient comparison of merits. The later liftings were for the most part satisfactory; rain had improved the crop without causing injurious second growth, but a few sorts were noted as so far promising as to be worth special attention next year.

From the forty-two sorts in the trial, four were selected for the highest award in the garden, namely, three marks for heavy cropping, and three for high table quality. The names of these are:—

*Faith* (Fenn).—Top growth neat, tubers white, round, neat, uniform, ripening early. One of the best in the trial.

*New Fluke* (Ironside).—A white kidney in the style of the Old Fluke, but with a finer skin and a bolder form, the tubers being mostly of exhibition standard. Crop heavy, and quality fine.

*General Gordon* (Fidler).—A white round in the way of Schoolmaster; top growth strong, tubers handsome.

*The Colonel* (Johnson).—A capital white-skinned variety in the style of the Old Fluke; rather late, but in every way first-rate.

The following were found to be productive and worthy of commendation for the present, but the awards made were not sufficiently high to bring them within the range of Certificates in the present season:—Salisbury (Ironside), General Gordon (Fletcher), Charity (Fenn), Reading Giant (Fidler), a great cropper; Bountiful (Fidler), Farmer's Pride (Hill), Emblem (Ross), Snow Queen (Fidler), White Beauty (Ironside), extraordinary heavy crop; King of Russets

(Lye), a heavy cropper, of good quality, in the way of Adirondack; Burton Hall Favourite (Johnson), May Queen (Dean), likely to be especially useful for early produce.

## A COMMON EDIBLE MUSHROOM: AGARICUS RUBESCENS, P.

AT the present time our pastures, grassy roadsides, and woodlands are everywhere ornamented with fungi. Some of these plants are no doubt poisonous, some are worthless or non-edible, whilst a large number are not only edible but delicious adjuncts for any table. It is not so difficult as many persons imagine to distinguish the edible from the non-edible species. A fungus eater must, however, have a correct knowledge of the characters of the fungi he eats and possess the capability of properly understanding the meaning of descriptive words. As fungi themselves are now easily procurable, it has been suggested that four or five of the most typical and most common species should be illustrated and described in this paper. The illustrations, engraved by the writer from Nature, are meant to assist readears of the *Gardeners' Chronicle* in clearly realising the descriptions. The essential points necessary to be correctly observed are printed in italics.

Agaricus rubescens, P. (figs. 97 and 98), *grows in woods* in the late summer and autumn; it does not, as a rule, grow in fields or open places. The top is *foxy or rusty-brown*, and *covered with warts*: the stem is brownish-buff, the gills are *white*, changing to *pale buff when bruised*; the stem has a *ring* or *collar* round its middle or near the top, the base of stem is *bulbous*, and warm brown in colour. The fungus is *scentless*, or nearly so, and almost tasteless, or slightly unpleasant when raw. On cutting or breaking a specimen the flesh changes to a pale *red-buff* or *burnt sienna*, or foxy colour, in patches. The plant is commonly *much eaten by larvæ*. The shaded group (fig. 98) shows five individuals in various stages of growth from the "button" to the fully expanded condition. The average size of a full grown specimen is about 4 or 5 inches across the top.

To persons who have not had a large experience with fungi it is always necessary to make a section from top to bottom of any unfamiliar example. Sections of Agaricus rubescens thus made are shown in fig. 97. The *warty top* is shown at A A, the bulbous stem (not hollow), slightly attenuated upwards, is seen at B B, the collar round the stem at C C, and the mode of attachment of the gills to the stem at D D. In infancy the edge of the cap touches the rim of the bulb, as illustrated (just breaking away) at E. A section, through a very young example, is shown at F, and through a half-grown specimen at G. The way in which the edge of bulb, the collar and the warts, are all conjoined in infancy is shown at point H, where these different parts are shown just separating. At J the collar is still adherent to the cap, and forms a covering over the gills. The dotted line at K shows the position of the collar, a short time before the drawing was made. At L, the *white* ovoid *spores* or seeds are shown enlarged, 500 diameters.

Agaricus rubescens is an easily recognised, noble and beautiful species. It is the *Golmelle* of the French, and has been termed in this country (in reference to the change of colour to burnt-sienna) the red-fleshed Mushroom—*rubescens*, means becoming red. In referring to this species in 1860, Mr. Berkeley wrote "quality doubtful," but we believe there is no doubt whatever at the present time that Agaricus rubescens is really a perfectly safe, delicious, and very abundant Mushroom. The following opinions have been expressed by various botanists. Vittadini writes:—"Non altrimento del Cesareo delicato e sano." The illustrious Fries has written:—"Fungis suspectis vulgo adscriptus, esculentus a Vittadini." Dr. Badham, "A very delicate fungus." Mr. Frederick Currey, a former Secretary and Vice-President of the Linnean Society, "I can vouch for its being not only wholesome, but, as Dr. Badham says, 'a very delicate fungus.'" Corda writes: "One of the most delicate Mushrooms of the Lorraine." Dr. M. C. Cooke in his most recent work on Agarics, "esculent." Many other commendations from eminent botanists and fungus eaters might be given.

The plant has been suspected on account of one or two dangerous species which are somewhat closely allied. The case of Agaricus rubescens is comparable with the Potato and Tomato; the two latter plants have dangerous allies in the Solanum family. Just as the Tomato and Potato are exceptions to a kind of rough rule, so Agaricus rubescens is one of the exceptional plants of the subgenus (Amanita) to which it belongs.

In preparing fungi for the table it is necessary to remember that the examples should be *fresh*, *clean*, and *undiseased*, for a fungus of an "uncertain age" is quite as likely to disagree with the consumer as is a stale mackerel, a mouldy jelly, or a diseased grouse. It is very necessary to observe this point, for fungi are often exposed for sale in the market in a stale and semi-putrid state.

In cooking Agaricus rubescens, remove the warty skin, place in water for ten minutes, drain, and fry with butter and rump steak. It may be toasted, or stewed. Agaricus rubescens when treated with salt produces an excellent and delicate ketchup. Agaricus rubescens is essentially a delicate-flavoured fungus, it does not possess the very rich taste of the meadow Mushroom; it is in a high degree the kind of Mushroom to receive a flavour from some other and stronger tasting object with which it may be cooked, as steak, &c. It takes a flavour in the same way as does a cream or jelly.

A correspondent, Mr. J. A. Farrand, published the following account of Agaricus rubescens in the *Huddersfield Examiner* for May 2, 1885:—"I have had this several times during the season. It is a splendid eater, and perfectly safe. Rich beefy gravy, and kidney-like flesh; moreover, it is one of those Mushrooms of which you can enjoy a whole mouthful without eating a whole specimen. It is good stewed in the oven, fried on the fire, or boiled in a saucepan, though I usually prefer any fungus I eat to be cooked in the oven. I recommend that they be first washed under the tap, and the scales (warts) removed with a soft brush, which is all the cleansing they require. If they are not going to be eaten at once, they should be placed in a dish and salted like a Cucumber till wanted. When about to cook them, I put just sufficient water to cover them, a little butter or dripping—butter is preferable—and quite optional, one or two cloves, but avoid over-seasoning them; they are quite good enough by themselves; also do not put too much grease of any kind in; melted grease is very indigestible, and a man with a weak stomach might eat a dish of fungi for the first time perhaps in his life which was too buttery, and if indigestion ensued, might unjustly condemn the Mushroom. Three-quarters of an hour covered with a plate in the oven is quite sufficient for Agaricus rubescens."

Personally I do not consider that Agaricus rubescens belongs to the first class of edible fungi; it is, however, in my opinion, a very good, safe, and delicate Agaric. A taste can easily be "acquired" for it. When compared with the pasture Mushroom it is like a sole to a turbot, or hock to sherry. The ketchup belongs to the first class.

Several British species allied to Agaricus rubescens are edible and good as Agaricus strobiliformis, Fr., a much paler Agaric than A. rubescens, 8 or 9 inches across the top, with large polygonal persistent warts; the warts are shaped like the scales of a Fir cone, hence the name strobiliformis. It is a rare plant, and grows on the borders of woods. Fries says, in reference to it, "*Odore et sapore gratus deliciosus.*" I have eaten this fungus, and agree with Fries estimate.




FIG. 97.—AGARICUS RUBESCENS. (FOR EXPLANATION, SEE TEXT.)

Another ally is Agaricus vaginatus, Fr. This plant grows in woods, the stem is naked, *it has no collar*, and the base of the stem is furnished with a somewhat large sheath wrapper or volva.

Four edible allies are commonly sold in the markets of Southern Europe—viz., Agaricus Cæsareus, Scop., and A. coccola, Scop., A. ovoides, Bull, and A. leiocephalus, Fr. Fries writes of the first, "sapidissimus;" of the second, "deliciosus;" of the third, "esculentus;" of the fourth, "suaveolens deliciosus."

Agaricus Cæsareus, Scopoli, or Cæsar's Agaric, was so named on the supposition that it was the "Boletus" used by Agrippina for poisoning Claudius. The fungus is recognised as an Amanita (subgenus to which all the fungi mentioned in these notes belong) by the description of Pliny, who accurately describes all the parts of the fungus, even to the volva entirely wrapping it in infancy.

There are several poisonous or suspicious species allied to Agaricus rubescens, as A. virosus, Fr., and A. phalloides, Fr., *sulphur-yellow* species, which grow in woods and have an *offensive odour*. A. vernus, Bull, *white* in colour, grows in woods, and has also an *offensive odour*. A. muscarius, L., grows in woods, especially of Beech and Fir. It has a *vermilion* or *scarlet* top, and is poisonous. A homœopathic preparation of the last fungus is sold as a cure for corns.

The qualities of some allies are unknown—they have not yet been tested. One species, *A. pantherinus*, DC., spotted like a panther, is sometimes mistaken for A. rubescens, P., but the brown colour of *A. pantherinus*, approaches *black*, whilst that of A. rubescens is a *rusty, foxy red*. There is no change of colour in the flesh to sienna-red in A. pantherinus. I have seen intermediate forms between the two species, I take them to be hybrids, at any rate the characters are all intermediate. *W. G. Smith.*



FIG. 98.—AGARICUS RUBESCENS. (SEE P. 460.)

ANTWERP EXHIBITION.—At the recent show held in Antwerp in connection with the International Exhibition Messrs. Rawlings Bros., Romford, were awarded the Gold Medal for fifty cut blooms of Dahlias, and the Silver Medal for twenty-five blooms. In another competition Mr. J. West, gardener to W. Keith, Esq., Brentwoon, received a 1st prize for twenty-five cut blooms of Dahlias.

# Florists' Flowers.

## THE ANEMONE.

THE middle of October is a good time to plant out the tubers of all the varieties of A. hortensis. In order to grow them well the ground must be well manured. It is best to have the beds where they are to be planted prepared by trenching a month or six weeks previously. In trenching place a good layer of manure in the bottom of the trench, over this a spit and shovelling of earth from the next trench, another layer of manure, and on the top 6 or 8 inches of soil. I place over the bed at planting time about 3 inches of potting soil. Plant in rows 6 inches apart and 6 inches between the tubers. They ought not to be planted very deep; about 2 inches of mould is enough over the tubers. A little white sand should be placed over each. The old florists used to protect their beds from heavy rains and severe frosts by coverings of straw mats placed over a wooden framework, but our modern experience has taught us that these coverings are unnecessary, and may even be hurtful. I leave the tubers in the ground all the year round, but it is usual to lift them when the leaves die down. If they are left alone they will sometimes flower again in the autumn.

## THE RANUNCULUS.

In a letter to the *Times* Mr. F. W. Burbidge ha been discoursing on the desirability of raising Anemones from seeds, and flowering them in the autumn. It may be a surprise to most people to know that the Ranunculus can be raised from seeds as easily as the Anemone. If the seeds are sown about the middle of October in boxes, and the boxes are placed in a cold frame, the seeds will vegetate in a month, and if carefully pricked out and grown on in boxes they will flower the following season. The little plants must be dried off in February. They must be started again about the 1st of March, if they are to flower the same season.

The old florists used to sow their seeds in January, but in that case the plants were not expected to bloom for eighteen months from the time of sowing the seeds. It is merely a matter of resting them. When the plants have made their growth, which they do in three months or less sometimes, they pass through the resting period almost immediately, and if the tubers are not taken out of the ground they will start to grow and flower at once. Mr. Barlow of Stakehill told me he had three successional blooms from the same set of Ranunculuses in one season. The Anemone and Ranunculus are very tractable flowers to deal with, and can easily be grown and flowered from seeds and old tubers. Their culture was better understood fifty years ago, at least more generally understood, than it is now. *J. Douglas.*

# COCAIN.

THE Sethia indica having been sent to me under the name of Erythroxylon monogynum, is found upon examination to contain a certain amount of alkaloid. The Sethia acuminata, which has also been sent to me as a variety of Erythroxylon, is a drug that has long been in use in Ceylon as a vermifuge, and I have for some time distributed it in the form of a fluid extract. At that time I was not aware that it had passed under the name of Erythroxylon. As soon as further supplies of these two drugs arrive a therapeutic examination will be carefully made with the alkaloids. I am glad to be able to record some further valuable information of general interest respecting Erythroxylon Coca. Dr. Manassein, of St. Petersburg, gives an interesting account of the employment of the drug in sea-sickness:—

"He had read of its value in uncontrollable vomiting of pregnancy, and thought it might be useful in sea-sickness. He, therefore, went this summer on a sea voyage in order to test its efficacy. Among his fellow passengers were two—a man and woman—who were especially prone to the malady. He administered to each of them every two or three hours a teaspoonful of the following solution:—Muriate of Cocaine (0.15), rectified spirits of wine (in sufficient quantity), and distilled water (150.0), beginning the administration on starting. That it had a prophylactic effect seemed clear, for in spite of very rough weather for a period of forty-eight hours, both the individuals were, for the first time in their lives, free from sickness, and enjoyed a very good appetite the whole time. To a child six years old, who began to be attacked with sea-sickness on rising in the morning, the treatment was so effectual that it was able to play about during the day in spite of the storm. The child took one teaspoonful in two doses during the first half-hour, and then half a teaspoonful every three hours. Another case was that of a girl eighteen years of age who had been sick for twenty-four hours before the drug was given. The case being a severe one, she had a double dose every half-hour, with truly magical effect, for after the second dose the patient was able to assume a half-sitting posture, and after the sixth dose she jested and began to complain of hunger. During the rest of the voyage she remained well, although there was much rolling of the vessel. Similar good results attended the use of the drug in three milder cases, and had it not been that his supply ran short, Dr. Manassein would have been able to make more extended observations. Still, from the experience of these few cases he thinks it justifiable to infer that in the drug we have a certain and harmless remedy against sea-sickness. In the same communication he mentions that he had found Cocainum muriaticum of great service in arresting the collapse of two severe cases of simple cholera, and thinks it desirable to try its action in cases of Asiatic cholera."

Dr. G. H. A. Dabbs reports this week in the *British Medical Journal* (p. 473) that he has used

cocaine most successfully in four consecutive cases of childbirth, and that it is his intention to use it in future cases.

I can only add that in one American journal that reached me last week there were twelve notices of the employment of cocaine, and in no one instance have I as yet been able to trace any ill effects from its use.

The employment of the Erythroxylon Coca has now gone from the barbaric stage of depending for the effect by chewing the leaves (which might be fresh or stale: this means that they might contain hardly any percentage of cocaine, or, on the other hand, they might contain 0·55 per cent.), to the employment of the alkaloid where the doses can be most accurately apportioned. The solution of hydrochlorate of cocaine with water is always better when made fresh, and it is safe to apply it in any case of pain, even with children, by rubbing it in. It is most easily mixed with vaseline, and rapidly allays pain in the joints. A small quantity of the alkaloid may be put with water and then placed on sugar, and it has a marked effect upon any one suffering with a sore throat. The price having fallen to about 4*d.* per grain, it is quite within the reach of any one. *T. Christy.*

# Orchid Notes and Gleanings.

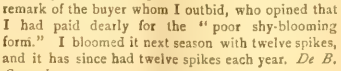
## ORCHIDS IN FLOWER AT KEW.

THE following list of Orchids now in flower at Kew includes several of unusual interest and beauty, notably Cypripedium Godefroyæ, recently imported among a batch of Orchids from Siam, and which has been figured for the *Botanical Magazine*. C. Kaieteurum, lately described by Mr. N. E. Brown in these pages; Dendrobium Phalænopsis, a beautiful large-flowered species from Timor Land; a new species of Cyrtopodium, the curious little black flowered Bulbophyllum saltatorium, a very fine specimen of Phalænopsis Lowii, Phaius bicolor, Spathoglottis Fortunei, an unusually large-flowered form of Zygopetalum Gautieri, and a handsome plant of Cattleya Dowiana, which is growing upon a piece of Fern stem in company with Adiantum cuneatum, the fronds of which form a telling background for the rich colours of the Cattleya flowers.

Acampe Wightiana
Bulbophyllum scitulum
Cattleya aurea var. Dowiana
,, Ehlorado
,, Gaskelliana
Cleistostoma sp.
Coelogyne Pitcheri
,, lagenaria
,, ,, maculata
,, ochracea
,, speciosa
Cypripedium calurum
,, concolor
,, Godefroyæ
,, Harrisianum
,, insigne
,, Kaieteurum
,, longifolium
,, porphyreum
,, Roezlii
,, Sedeni
Cyrtopodium sp. nov.
Dendrobium Pierrei
,, formosum var. giganteum
,, infundibulum
,, Mortii
,, Phalænopsis
Epidendrum agathosmicum
,, equitans
,, evectum
,, inversum
,, pauciflorum var. ramosum
,, purum
,, scriptum
Laparis cucullata
Lycha Dayana
Masdevallia amabilis
,, Davisii
,, erythrochaete
,, Harryana
,, Lindeni
,, maculata
,, myriostigma
,, ochthodes
,, limula
,, Veitchiana
Maxillaria iridifolia
Maxillaria variabilis
Miltonia candida
,, Clowesii
Odontoglossum Alexandræ
,, bictoniense
,, cervantesii
,, crispum
,, Dossinianum
,, Ehrenbergii
,, Lindleyanum
,, Rossii majus
,, vulcanicum
Oncidium cheirophorum
,, chrysomorphum
,, crispum
,, cucullatum Chestertonii
,, excavatum var. auroseum
,, dasystyle
,, flexuosum
,, orientale
,, Papilio
,, pectinatum
,, tridactylum
,, Xanthosum
Peristeria elata
Phalænopsis amabilis
,, Cornu-cervi
,, Esmeralda
,, Lowii
,, Schilleriana
Phaius bicolor
Pleurothallis (several unnamed species)
Pleione reclinata
,, lagenaria
,, Wallichiana
,, maculata
Renanthera bilingvis
Restrepia antennifera
Saccolabium Blumei majus
,, gemmatum
Spathoglottis Fortunei
Stenoglottis fimbriata
Vanda coerulea
,, teres
Zygopetalum Gautieri
,, Mordeuxii

## EPIDENDRUM PRISMATOCARPUM.

Referring to Mr. Douglas' remarks on my specimen of this, exhibited at the Sevenoaks show (see p. 398), permit me to state that when he saw it the blooms were old and faded, they having commenced to open on July 6, 1885, and the plant was exhibited on August 19, therefore the fineness of colour had almost gone. Mr. Douglas says it "remains in bloom a month." My variety always lasts two months, though, of course, the bloom looks a little autumnal at the end, but they are quite fit for making up into bouquets. If other growers are willing to enter a contest to see who has the best variety I shall be quite agreeable, and next year we could all send a spike to the Royal Horticultural Society, where we could all see them in a group and see their respective merits. I remember an incident in connection with this plant which may be of interest to younger Orchid growers than myself. It was the disinterested remark of the buyer whom I outbid, who opined that I had paid dearly for the "poor shy-blooming form." I bloomed it next season with twelve spikes, and it has since had twelve spikes each year. *De B. Crawshay.*



## MESSRS. W. FROMOW & SONS' NURSERIES, HOUNSLOW.

AT this suburban nursery the principal subjects grown are Rhododendrons, American plants generally, coniferous and evergreen trees and shrubs, and hardy plants in common demand, the pure air of the district evidently suiting their requirements admirably, as was evidenced by their flourishing healthy appearance. If one were asked to state briefly the main features the answer would be Rhododendrons, Aucubas, and Euonymus grown for the London trade. Many more good things were there in abundance, but the aforesaid plants are grown in such quantities and prime condition that they stand out unmistakably from amongst the other stock. Of Rhododendrons (ponticum), hybrid seedling, and named varieties, about 150,000 are cultivated, plants from 1 to 3 feet in height and well set, bristling, in fact, with bloom-buds and remarkably healthy foliage. The soil is a good loamy one, and they luxuriate in it; thus very effectually disproving the once held notion that Rhododendrons would only thrive in peat soil; indeed, it has been found from experience that they will succeed in almost any soil that does not contain lime, and which has been rendered suitable for them by a good admixture of sand and leaf-mould.

The beds or "drifts," as they are called, of Rhododendrons are alone worth a journey to see, and have a charm (when in bloom) for every lover of this beautiful and showy class of plants. For the benefit of those whom it may concern we append notes on a few only (space forbidding a lengthy reference) of the best named sorts:—Blandyanum, deep rosy-crimson—very good; Hendersoni, deep crimson; Iago, rosy-purple, dark spots; Lady Eleanor Cathcart, pale rose, chocolate spots; Limbatum, white-edged crimson; Lord Palmerston, rosy-crimson, fine truss; Mason's Perfection, white, yellow spots, pretty; Michael Waterer, brightest crimson-scarlet; Minnie, blush white, chocolate spots; Mrs. John Clutton, clear white, very good; Mrs. John Waterer, rosy-crimson, excellent; Warrior, rosy-crimson, fine flower.

Of Aucuba japonica some 200,000 are grown, and they are of all sizes, ranging from an inch high up to 5 feet, the plan generally adopted for increasing stock being from cuttings, these producing the bushy, well-shaped stuff so much in request by the trade for boxing—the plants got from layers, although obtained more quickly, not producing such shapely plants, having a "leggy" appearance, and therefore not so much in demand for the purpose named. As giving some idea of the trade done in this useful shrub, it may be mentioned that 49,800 cuttings were put in last year. While on the subject of box plants, it may be interesting to note that, in addition to Aucubas, the following, of sorts, are grown very largely for this purpose, viz.:—Thuias, Cupressus, Retinosporas, Euonymus, Red Cedar (Juniperus virginiana), Box, and Berberis.

Of those very effective and universally used box plants, the green and golden Japan Euonymus, some 30,000 are grown, and what a pretty effect they have when seen *en masse*. What may well be described as one of the best shrub for hedge-making is Ligustrum ovalifolium; we saw it from 3 inches to 9 feet in height. An acquisition, too, in this way is L. lucidum variegata (the variegated Chinese Privet).

That beautiful white flowering shrub, Andromeda japonica, we also noted, Azalea pontica and Ghent varieties, an extensive collection is grown, and they are in capital condition. Cratægus coccinea fl.-pl., Paul's double scarlet Thorn, one of the finest hardy flowering trees of modern introduction, and the round-leaved Laurel—rotundifolia—is grown in quantity, the latter being a new and very desirable variety. Of the useful Portugal Laurels, about 1000 are cultivated. Cupressus Lawsoniana argentea, a beautiful and distinct kind, of very graceful habit, foliage of a silvery glaucous hue: of C. Lawsoniana alone some 30,000 plants are grown. Amongst Yews, of which there is a good collection, green and golden Taxus baccata elegantissima is very handsome in appearance, also T. b. Dovastonii, a fine weeping sort, leaves dark green. What a beautiful "feathery" tree is the well known Thuiopsis borealis.

Robinia Bessoniana, a fine tree for avenues and promenades—a very practical illustration of this is to be found in the pretty avenue of it at Sutton Court Road, Chiswick, the entrance to the Royal Horticultural Society's gardens, its round head of bright green leaves affording a delightful shade in summer, as well as giving quite a picturesque effect to the road in question, and giving one a notion of the Parisian boulevards. Salisburia adiantifolia, the Maidenhair tree, beautiful deciduous tree, leaves dying off yellow.

Amongst standard trees we noted a good collection of Limes, Planes, Thorns of sorts, Laburnums, &c. Of the ever popular Virginian Creeper (Ampelopsis hederacea) 30,000 are grown. What a hardy rapid climber it is, and what a striking appearance the intense scarlet foliage has at this particular season of the year. And then those best of all evergreen climbers, Ivies, Hedera canariensis (the Irish Ivy) some 40,000 plants are grown. How effective they are for covering walls, buildings, arbours, &c. The charming blue-flowered Wistaria sinensis, and the white variety, alba, are grown in quantity. Poplars, too, are somewhat largely and well grown, the principal varieties being the Silver or Abele, Lombardy, and Black Italian. Of Golden and Silver Queen Hollies, we noted some grand plants, quite lighting up their surroundings.

It now only remains to close these necessarily brief remarks by expressing our thanks for the courtesy shown by Messrs. Fromow's energetic foremen, Messrs. T. Ratcliffe and L. Godfrey, the nurseries under their charge redounding much to their credit. *B.*

# Plants and their Culture.

## URCEOLINA AUREA (PENDULA).

I HAVE on previous occasions alluded to the utility of this bulbous plant for the decoration of the temperate-house as well as the stove. It is as well grown in the former, but still more so when grown in the latter. Although introduced from Peru as far back as 1837, it is still far from common, and, belonging to the Amaryllidaceæ, its general outlines of culture can be seen at a glance. During its growing season it will succeed under the same course of culture as that given to Eucharis and Pancratiums. Some years ago, when first I grew it, the method adopted for its increase was by removing the offsets from the parent bulb. Last winter, when the bulbs were in flower, I contrived to fertilise flowers which gave seed-pods which ripened in due course, and a batch of seedlings resulted, which I am looking forward to see in a flowering condition another season. If they had been grown on more rapidly the strongest would in all probability flower this coming winter. It is of easy culture, and the knowledge that it can easily be raised from seed should cause its more extended cultivation, whilst its distinctive character is also a strong argument in its favour. Like all other bulbous plants that lie dormant during a portion of the year, it is sometimes liable to be overlooked, and when devoid of leaves to be pushed on one side. Avoid this oversight if possible, and when the flower-spikes begin to appear (as will be the case in a few weeks) see that the plant has all the light possible, so that the proper amount of strength is concentrated therein, to the future development of a fine umbel of flowers. The flower-spikes have a very bright and cheerful appearance when placed

along the margin of a group of plants in the stove, at the same time having good lasting properties.

Eucharis amazonica.

If a batch of these that have made good growth can now be induced by an extra amount of warmth and a more liberal supply of water at the roots to push up some flower-spikes, they will come in very useful. Another lot ought to be held in reserve, if possible, to be brought on for use in December, and particularly for Christmastide. Last year, towards the winter season, some of my stock, for want of room, were left in too low a temperature for a time, and a portion of them lost their roots, the effect of which was very noticeable in the spring, but which, by a more liberal course of treatment, have all recovered, and have thrown up some spikes, and promise many more ere long. This taught me the lesson, to exercise more care for the future. They will withstand a moderately low temperature, but if it is observed after a cold night that the foliage is limp and inclined to flag, then lose no time in removing them to more congenial quarters.

Pancratium fragrans.

This companion plant to the Eucharis will now in most cases have ceased to push up any flower-spikes. The young growth that is being made should be encouraged in its development, as on this will greatly depend the amount of flowers another season. *James Hudson, Gunnersbury House Gardens, Acton, W.*

## Fruits Under Glass.

### PEACHES.

As long as the trees continue in a healthful state and produce fair average crops of fruit, and finish it in a satisfactory manner there is really no reason to interfere with the main roots of such trees, or to disturb the rest more than is necessary for the purpose of giving the surface roots the benefit of the annual top-dressing of good fresh calcareous loam in a partially decomposed condition, with the customary mulching of manure on its surface, so much required not only to stimulate and nourish fresh feeding roots but also to protect them by-and-by, when they have permeated this stuff. Trees such as these referred to and in this condition of health are by no means common, but, on the other hand, it more frequently happens that much more attention is needful to keep them in a proper state, and even then in some places Peach trees are not at all long-lived, for after flourishing a few years premature decay sets in, and generally at the juncture where the stock and the tree are united, which checks the circulation of the sap, and soon arrests its progress to such a degree as to necessitate the removal of the tree entirely before its vitality ceases The symptoms in trees affected in this way commence by an unhealthy appearance of the leaves, subsequently in diminished vigour, imperfectly developed wood, and badly finished fruit. In my opinion more trees were lost from this cause alone than from any other with which I am acquainted when they are cultivated under glass. If therefore Peaches are extensively grown in this way, by all means provide against such contingencies by planting every year some maiden trees in suitable places. These will in the course of two or three years, under proper care and attention, make trees far more suitable for transferring into houses than can possibly be procured in the ordinary way.

Any trees in the houses which have become at all unfruitful through exuberant growth or other causes, should be examined at the roots. This is best done by opening a trench down to tha surface of the drainage at the outermost part of the roots. The soil should be carefully worked away from these to within 3 or 4 feet from the stem of the tree. They should then be shortened, and after fresh soil has been brought in and made up to within a foot of the surface, they should be spread out and be firmly pressed in and well watered. Subsequently the house which is to be started at about the end of next month should now be cleansed, painted, &c., in readiness for work. The trees should be pruned without further delay, afterwards carefully wash them with a soft brush and weak soft-soap water. This substance is very detrimental to the buds of Peach trees, therefore it should be sparingly used, and especially so on trees at this early period. To show its effects I will give an instance which happened in my early days of practice, which I have never forgotten. A very large early house of fine Peach and Nectarine trees became infested with the brown scale; I with others was set to well wash these trees with prepared strong soft-soap water for the purpose of killing this pest, and this was done effectually, as no scale was left alive, and not more than a dozen or so of Peaches, for nearly all the buds dropped off the trees soon after forcing operations were commenced. After the trees are washed and tied on the trellises, remove about 3 inches off the surface of the border, and replace it with fresh calcareous loam, which should be covered with 2 inches of partly rotten manure. Unless very much frost prevails the lights may be kept off this house until the end of the present month. In later houses the trees may now be fully exposed to natural influences. *G. T. Miles, Wycombe Abbey.*

## The Hardy Fruit Garden.

The principal crop of Apples and Pears will now be gathered, and will need care in the fruit-room. Air may be given when the outside temperature is dry and warm, but the ventilators are best shut on damp foggy days. All rotten or decaying fruit should at once be removed.

Filberts and Walnuts may now be gathered and stored away for winter use.

The season is now at hand when planting operations may be begun. To ensure a fair amount of success the ground should be thoroughly prepared before planting. When the ground is naturally of good quality little will be required, but to break up the ground, say about 2 feet deep, taking care to reserve some of the best soil for placing over the roots of the trees. When the ground is not suitable much may be done to improve it by mixing manure, wood-ashes, and, if of a heavy nature, sand, road scrapings, or leaf-soil may be added. Before planting permanent trees it is very important to have the ground thoroughly clear of weeds, for after the trees are planted it will be much more difficult to clear the ground.

From several years' experience I much prefer planting Apples on the Paradise stock. When planted on this stock they come into bearing at once, and if planted with care and well looked after in the way of mulching, &c., the first year, by the second year they will produce sufficient crops to pay for the trees. I have a great many varieties on this stock, and will select twelve of the best grown here, hoping that the selection may prove of some service to others who have not had an opportunity of growing so many kinds. I know many others of almost equal merit, but the following twelve are first-class as grown here :—

1. *Lemon Pippin.*—A fine useful variety, in season from October to April, either for dessert or cooking; tree a free grower and may be planted closer together than many varieties owing to its compact upright growth.

2. *Cox's Pomona.*—Tree a good grower and free bearer and fruit above medium size, skin much streaked with red next the sun. One of the best autumn Apples grown.

3. *Cox's Orange Pippin.*—Fruit below medium size, in use from October to February; in its season the best dessert Apple grown. Tree a weak grower, hence it should have a good warm position: here on dwarf trees we get the largest and finest fruits.

4. *Lady Henniker.*—This is a fine handsome Apple, very free grower and bearer; above medium size and colours well; useful for dessert or cooking.

5. *Blenheim Orange, or Blenheim Pippin.*—This is so well known and appreciated by every one that it needs no recommendation from me, but it may not be so generally known that this variety, when grafted on the Paradise stock, will fruit freely the second year after planting, and small trees planted here two years ago have this year produced finer crops of larger fruit than trees half a century old.

6. *Ribston Pippin* is still a king among dessert Apples, and should be planted largely by every fruit grower, on the Paradise stock, in light warm rich soil. Old trees are liable to canker. Young ones commence bearing immediately: they will produce much finer fruit than old trees if given good treatment.

7. *Fearn's Pippin.*—Below medium size, a fine, crisp, and pleasant flavoured variety; a good grower, and a very free bearer.

8. *Court Pendu-plat, or Court Pendu*, also known under the name of "Wise Apple," owing to its habit of blooming late, and so escaping the late frosts. This is one of our best late Apples, a very free bearer, of excellent quality, and very handsome for dessert. I have kept them fresh and good till May.

9. *Cellini.*—Medium size, very free bearer, and colours well; is useful for dessert or cooking, should be grown in rich warm soil. Here, when planted in a strong heavy soil the tree cankers, but in a dry and warm position it is all that can be desired.

10. *Peasgood's Nonsuch.* — Perhaps this is the handsomest of all Apples when well grown, very free bearer and good grower, but when grafted on the free stock a very shy bearer.

11. *Mr. Gladstone.*—This is a fine early Apple, very bright and handsome, but it can only be recommended for an early variety.

12. *Lane's Prince Albert.*—I am of opinion that this is the most profitable Apple to grow known at the present time. For ten years past we have never missed having a good crop of this variety, and this season I think the crop is better than ever. Good handsome fruit; will keep till Agril. *J. Smith, Montmore, Bucks.*

## The Kitchen Garden.

### CUCUMBERS.

The plants in the earliest division will now be fruiting freely. Only moderate cropping should be allowed, so as not to weaken the plants by carrying a glut of fruit at one time. During the present month attend regularly twice weekly to stopping and tying, and maintain a regular top and bottom-heat.

Mushroom-house.

It is best not to apply tepid water to the beds until the young Mushrooms commence pushing through, but in some dry houses, even after keeping paths and walls damped, the soil on the surface of the beds will become too dry, especially if covering the beds has not been practised. Under these circumstances a moderate watering through a fine rose to moisten the soil once or twice before the crop appears, will be advantageous by bringing the beds into an earlier bearing state.

General Work.

It will not be necessary until the beginning of next month to lift either late Cauliflower or early Broccoli approaching the cutting stage. The plots should be examined twice weekly, and the flowers protected by breaking the outside leaves over the hearts of the plants, and a little light dry bracken may likewise be laid over the top of the most advanced as an additional protection. Let the Dutch hoe be freely worked between the rows of late Spinach, Turnips, and other advancing crops for the double purpose of destroying young weeds and accelerating growth. Nearly all winter crops which were sown or planted at the usual time are backward this season.

A second sowing of China Rose Radish may now be made on a sunny border. The remainder of the Celery crop should now be finally earthed up, as sufficient frost may soon be expected to lay prostrate the leaves if this is not done. This season Brussels Sprouts are not so rank in growth as usual, but the stems are well furnished with good solid sprouts. The plots should be looked over, and any decayed leaves removed, taking care not to break any healthy foliage—the more foliage to protect the Sprouts the better. Finish earthing-up late plantations of Leeks, drawing the soil as high as consistent with not burying the leaves too much, the object being to secure a long blanched part.

Beet Root.

The roots, being very susceptible to frost, the crop should be lifted and stored by the middle of the month. It is well to place the roots when storing in two different sizes; small roots are most valuable for salad purposes, and are invariably preferred to large ones in the kitchen. I do not advocate storing them out-of-doors if a suitable cellar is available. An airy shed is undoubtedly too dry for them, but if stored in sand on the floor of a somewhat damp and frost-proof cellar the roots will keep as firm as a rock until spring. A cellar not being available they may be stored similar to Potatos out-of-doors, and the pit should be opened during mild weather, the roots examined, and any growth rubbed off. *G. H. Richards, Somerley Gardens, Ringwood.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| Monday, | Oct 12 | Sale of Bulbs from Holland, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Sale of Rhubarb, at Deptford, by Protheroe & Morris. |
| Tuesday, | Oct 13 | Royal Horticultural Society: Show of Apples and Pears (two days) & Meeting of Fruit and Floral Committees, at 11 A.M.<br>National Rose Society: Executive Committee Meeting, at 11 A.M.<br>Clearance Sale of Nursery Stock, at Upper Clapton, by Protheroe & Morris.<br>Sale of the First Portion of the Collection of Established Orchids formed by H. W. Lowe, Esq., at Protheroe & Morris' Rooms.<br>Sale of Dutch Bulbs, at Stevens' Rooms. |
| Wednesday, | Oct 14 | Sale of Flowering and Established Orchids, at Stevens' Rooms.<br>Sale of Camellias, Azaleas, Roses, Lilies, &c., at Protheroe & Morris' Rooms.<br>Clearance sale of Nursery Stock, at Dawson's Nursery, Sunbury, by Protheroe & Morris (two days). |
| Thursday, | Oct. 15 | Sale of Established Orchids, at Stevens' Rooms.<br>Sale of Dutch Bulbs, Roman Hyacinths, and Double Tuberoses, at Protheroe & Morris' Rooms. |
| Friday, | Oct 16 | Sale of Imported Orchids, at Protheroe & Morris' Rooms. |
| Saturday, | Oct 17 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE announcements in another column will show that the holiday season, if ever there is one in the horticultural world, is at an end. It will not surprise those who have taken part in recent Conferences and Congresses dealing with Apples, Narcissus, and Orchids, and it will not astonish those who are interested in the forthcoming exhibitions of Pears and Primroses, that the success which has attended these partial gatherings and which it is reasonably expected will ensue from those still to come—it will not, we repeat, be surprising that the idea of an INTERNATIONAL EXHIBITION AND CONGRESS on a large scale should once more be mooted. The Royal Horticultural Society, so often threatened and so much tried, has shown through all its troubles so much actual vitality and so much greater potential force, that we cannot doubt that the fullest sympathy will be accorded to it in its endeavour to act in accordance with the spirit of the age, and that the most careful consideration and the utmost support will be accorded to it in its endeavour to inaugurate an exhibition and a congress on a scale befitting the traditions of the Society and the needs of the day. We are well aware that many attempts in this direction have fallen flat. The gigantic success of 1866 has acted as an actual discouragement to further enterprise, and the altered conditions of the times have hitherto been adverse to the carrying out of such a scheme. But it would be idle to suppose that the horticultural world will be content to rest upon the memories of a period now twenty years old, rather it may be expected that it will be willing and with all confidence take into consideration the proposal once more to inaugurate an exhibion and a congress worthy of the nation. The matter is to be ventilated at the next meetings of the committees of the Society on Tuesday next, and we earnestly hope that the members and Fellows will come prepared to consider the matter in the most sympathetic manner. There are so many things to be considered, that it is hardly to be expected that any definite scheme can at once be adopted. First of all will come the question, whether or no such an exhibition on such a scale is desirable at this particular time. This is a point on which we ourselves are not prepared at the moment to offer an opinion. That must necessarily depend in large measure on the feeling of the exhibitors, and of those who may be expected to take an active part in the matter.

Assuming, however, that the desirability of such an exhibition be affirmed, the next point will be to determine who shall carry it out. We well remember that on the former occasion the Society, that should have placed itself at the head declined, doubtless for what then seemed good reason, to take part in the movement, which was entirely carried out by private zeal and enterprise. The great success then attained was attributable mainly to the excellent feeling that prevailed among all those interested, and to the admirable chairmanship of the late Sir WENTWORTH DILKE. His zeal, and more especially his courtesy and tact, kept jarring elements within bounds, and so manipulated them that they were made to act together for the common good.

But even with the superlative administration of the chairman and treasurer it will be remembered that the matter was as nigh to have become as gigantic a failure as it afterwards developed into a success. A large guarantee fund was proposed, and very numerous promises of support were received, but that guarantee was never actually carried out, owing to legal difficulties, and it is hardly doubtful that had the promoters been obliged to seek the fulfilment of the implied promise of support in the case of a deficit, that considerable difficulties would have been experienced. But this is ancient history, and though we do well to profit by past experience, we shall do even better by endeavouring to work according to the lights and circumstances of the present. The questions for discussion on Tuesday next, then, seem to resolve themselves into these. Is it desirable at the present time to undertake such an exhibition and congress? If so, by whom shall the scheme be worked, and what shape shall the matter take? If it be considered desirable, there is hardly a doubt that the Royal Horticultural Society is the proper body to undertake it, always provided they can satisfy the public and the exhibitors and others, that they have the requisite zeal and administrative ability. The success of the recent partial congresses afford at least some guarantees on this point. In the next place, as to the scope of the proposed exhibition. There will, we anticipate, be little doubt that this must, to ensure success, be of the widest and most comprehensive character.

Horticulture at present is too much looked on as a mere luxury, and is thought to concern more especially the wealthier classes. But Horticulture, as we all know, has much wider aims. It concerns the peasant even more closely than the peer. The general welfare of the community is bound up with its success, and the special welfare of the landed interest, of the farmer, market gardener, manufacturer, and of our colonial brethren in every quarter of the globe, is very intimately concerned in it. All this, though well known to the horticulturist, is not sufficiently recognised by the general public, which eats, drinks, and is clothed, which builds houses, and manufactures what it requires, without much thought of the sources of supply and the means for augmenting that supply and of developing new resources. To illustrate our meaning we would point out that Horticulture should not content itself with exhibitions of flowers and fruit, however splendid, but it must develope its unrivalled resources by making known to the fullest the products of the vegetable world, their suitability for cultivation, and their adaptations to the requirements of mankind. Forestry in all its branches, the cultivation of food-plants in all climates, the development of the resources of our colonies in the production of materials for food, constructional purposes, medicinal and economic use. All these matters come legitimately into the scope of Horticulture when looked at in a comprehensive sense. It may be said that many of these matters are rather agricultural than horticultural, and in truth the interests of the two—Horticulture and Agriculture—are in so far identical, but Horticulture is the parent of Agriculture, and the manufacturers and farmers of this country and the colonists of the tropics are perfectly justified in looking to Horticulture for extended knowledge and judicious guidance.

In like manner Horticulture and Agriculture have claims upon a scientific congress. The art of Agriculture and the art of Horticulture have progressed as far as they can well do unaided, but Science, it cannot be doubted, has in its mines ore that only waits to be brought to the surface and utilised to extend the arts aforesaid in new directions, and to an extent as yet undreamt of.

Taken up in such a spirit, however much we may, in practice, fall short of the ideal, we cannot doubt that such an exhibition and congress thus conceived in the widest and broadest spirit, and carried out in a business-like manner—each helping each—will be attended with success. In any case, the matter is ripe for discussion, and such discussion—penetrating, cautious, and exhaustive—we hope it may receive.

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THE ROYAL BOTANIC INSTITUTION OF GLASGOW—more familiarly known as the Botanic Garden, Glasgow—is passing through a period of trial not very dissimilar to that which beset the Royal Horticultural Society. In order the better to develope its resources, the Institution, which is largely dependent on private subscription, borrowed money from the Corporation of Glasgow. With the money so obtained it reconstructed the garden, built new houses, and acquired a splendid winter garden. This attempt to meet at one time the requirements of fashion and the demands of science has failed, just as it failed at South Kensington. Science alone could not maintain the establishment, and the wealth and fashion of Glasgow, for whom these vast expenses were specially incurred, have left the Institution in the lurch, just as happened at South Kensington. As a consequence, the Corporation of Glasgow receiving, as we understand, no interest for the monies advanced, and seeing no prospects of doing so, have, as custodians of and dispensers of the public money, rather suddenly called up the money lent. There is, we believe, little doubt that the real value of the property is considerably greater than the amount lent, but the value cannot be realised without disastrous sacrifice, and the question is what is to be done? It is obvious that the proprietors of the garden are (as the Council of the Royal Horticultural Society was) paralysed by this state of things. The power is, we believe, in the hands of the Corporation of Glasgow to do as they list. What ought they to do under such circumstances? We can well understand that they are loath to expend monies from which all the citizens may not derive benefit. If it were a matter of pure science the difficulties would not be great, and the University and scientific bodies of so great a centre of learning might surely keep up a garden sufficient for their purposes. A botanic garden is more than ever necessary for the training and instruction of students of botany and science generally. At one time a herbarium, a few diagrams and models, supplemented by a relatively few specimens, such as would not tax the resources of a large garden, and by occasional excursions, would supply all that was considered necessary, but in the present state of botany a constant supply of fresh specimens of plants of all descriptions is a vital necessity for study and comparison. Even these requirements the University might be expected to supply, but when it comes to maintaining a costly and well furnished public garden, such as befits a large city like Glasgow, the case is different.

The scientific portion of the garden is limited in its requirements, but a pleasure ground and houses open to the public demand much larger funds. That the Corporation should hesitate about its duties in the matter, however, is rather surprising. We suppose no city in the universe, certainly none in Britain, stands more in need for purposes of health and recreation of such an establishment than Glasgow. If it did not exist the custodians of the public money might hesitate in incurring the expense, but there it is, and on the other hand there is a

city which, as any one who has visited it must acknowledge, stands wofully in need of the amenities, the life and health-giving requisites, which such a garden supplies. We trust, then, we may shortly hear that the garden has become its management. Glasgow, which owes so much to botany, and which might owe so much more, should, even for personal, commercial, and manufacturing interests, apart even from wider sanitary considerations, look known experts. The articles will be abundantly illustrated. In the following weeks we shall hope to give a complete account of the great exhibition of Pears to be held at Chiswick from October 21 to November 4.

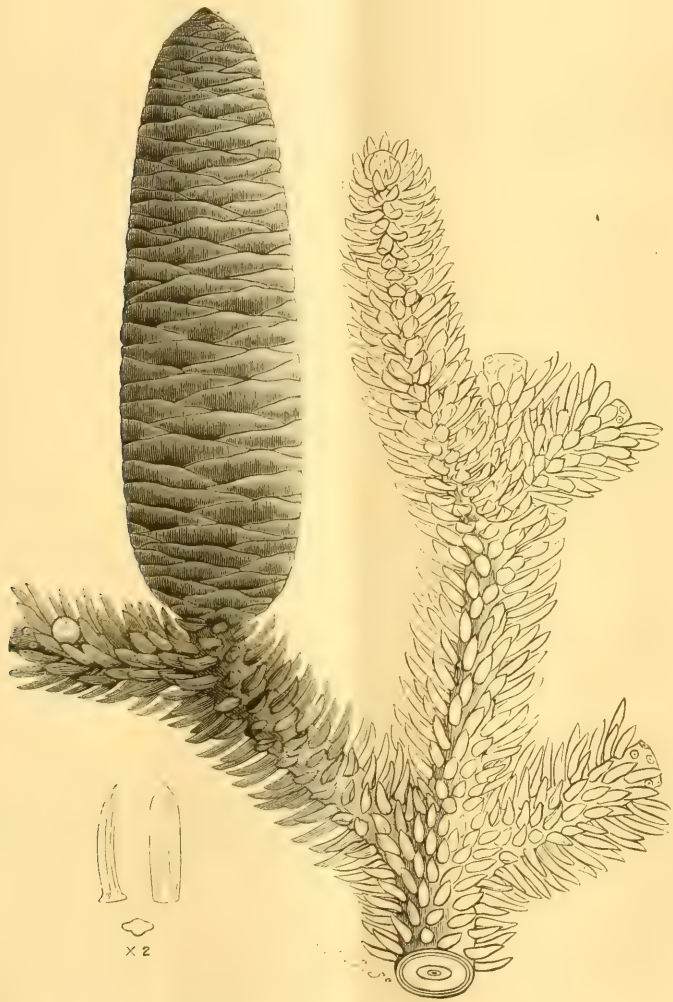



Fig. 99.—Abies pinsapo. (see p. 468.)

public property, and that while it serves its beneficent purpose as a means of health and pleasure to the community, it may regain the ancient reputation it had when Dr. Hooker, afterwards Sir William, rendered the then little Glasgow Garden famous throughout the world by the zeal and energy he displayed in to it that its Botanic Garden be suitably maintained and its influences enhanced.

—— Our Next Numbers.—In our next issue we shall lay before our readers various articles on the history, cultivation, and diseases of Pears, by well

—— The Royal Horticultural Society.—From a copy of the programme of the Primula Conference, to be held on April 24, 1886, under the auspices of this Society, it appears that an exhibition of these interesting plants will be held in the Conservatory at South Kensington on April 23 and 24, 1886, in conjunction with the exhibition of the Na-

tional Auricula Society. The President of the Conference, JOHN T. D. LLEWELYN, F.L.S, and the Chairman of the Committee, Dr. MICHAEL FOSTER, F.R.S., are supported by a numerous committee of gentlemen interested in the subject in this country, both amateur and professional, as well as by the representatives of a large number of the chief botanical and horticultural gardens and museums abroad. It is proposed that the plants to be exhibited shall be ranged under eleven classes, namely:—1. The Auricula. 2. The Primrose and Polyanthus. 3. Varieties of Primula Sieboldi. 4. Varieties of Primula sinensis. 5. European species, varieties and hybrids of the genus Primula. 6. Himalayan and other Asiatic species, varieties and hybrids of the genus Primula. 7. Chinese and Japanese species, varieties and hybrids of the genus Primula. 8. American species, varieties and hybrids of the genus Primula. 9 Plants allied to the genus Primula, such as Cyclamen, Dodecatheon, Androsace, Cortusa, &c. (of the species only, not garden varieties, will be admitted). 10. Primulaceous plants grown to illustrate special modes of culture, &c. 11. Specimens, models, and drawings, illustrative of the structure and mode of growth of Primulaceous plants. In order to assist in the arrangement of the European Primulas at the exhibition, Mr. J. G. BAKER, F.R.S, has kindly drawn up for the committee a list of European Primulas, classified in three groups, published as an appendix to the programme, which may serve as a preliminary basis for the discussion at the Conference, and also as a guide, so far as possible, to the exhibitors in giving names to the plants they exhibit. The provisional programme of the Conference on April 24, 1886, includes:—1. The origin and history of the florists' Auricula, on which subject an introductory paper will be read by Mr. SHIRLEY HIBBERD. 2. The directions in which efforts should be made with the view of improving the florists' flowers belonging to the genus Primula; introductory paper by SAMUEL BARLOW, Esq., J.P. 3. The nomenclature of Alpine Primulas; introductory paper by Mr. J. G. BAKER. 4. Culture of hardy Primulas; introductory paper by Dr. MAXWELL T. MASTERS, on root-structure and mode of growth as affording indications of the probable best method of culture. This Conference, following closely as it does on the heels of the Apple Congress and the Orchid Conference, and with a Pear Congress in course of arrangement, together with the active part being taken by the Society in housing and caring for growing plants to be shown in the forthcoming Colonial and Indian Exhibition by the various colonies, gives evidence that the Royal Horticultural Society, under the energetic management of the present Council, not only still holds, but has taken a step in advance of, its well-known position as the horticultural authority in this country.

—— THE BENTHAM PORTRAIT.—The following official reply has been received by Sir JOHN LUBBOCK in acknowledgment of the portrait presented by the subscribers to the Royal Gardens, Kew:—

"September 21, 1885.

"Sir JOSEPH HOOKER having informed the Board that a portrait of the late Mr. GEORGE BENTHAM has been presented by you, on behalf of a body of subscribers, to the Royal Gardens, Kew, I am directed by the First Commissioner of Her Majesty's Works, &c., to express his thanks for the gift, and to acquaint you that the portrait will be hung in the Herbarium, in which he worked for so many years, and which was greatly enriched by his generosity.—I am, sir, your obedient servant, "A. B. MITFORD.

"Sir JOHN LUBBOCK, Bart., M.P."

—— NATIONAL CHRYSANTHEMUM SOCIETY.—Floral Committee:—Mr. Berry, Roehampton; Mr. M. Butcher, Barnet; Mr. Bevan, Dartmouth Hill; Mr. H. Cannell, Swanley; Mr. R. Dean, Ealing; Mr. N. Davis, Camberwell; Mr. Gibson, Mitcham; Mr. G. Gordon, Gunnersbury; Mr. E. Kemp, Clapton; Mr. J. J. Lowry, Mill Hill; Mr. Mardlin, Finsbury Park; Mr. G. Stevens, Putney; Mr. J. Springbett, Cheshunt; Mr. C. Swift, Fulham; Mr. J. Townsend, Putney. The first meeting of the above committee will be held at the Royal Aquarium, Westminster, in the organ gallery, on Wednesday, October 14, at 2 30 P.M. precisely, when new or rare Chrysanthemums, or other subjects may be submitted. Certificates will be awarded according to merit. Exhibitors can obtain admission to these meetings by signing attendance book at staff-entrance of the Royal Aquarium (next the theatre). Exhibits should be staged not later than 2 15 P.M. Parcels (carriage paid) may be directed to Mr. William Holmes, Honorary Secretary, care of F. Cates, Esq., Royal Aquarium, Westminster, S.W. Exhibitors need not necessarily be members of the Society.

—— GARDENERS AS VOTERS.—At a Registration Court in Midlothian lately the question of the right to vote of gardeners living in bothies came under discussion. It appears from the report in the *Edinburgh Courant* that objection was raised to one of the gardeners at Dalkeith. There were, said the objector, on the list for Dalkeith five gardeners who occupied bothies, and the objection was that they were not entitled to be registered. The Act of Parliament that gave the franchise to any householder allowed it to any man who occupied part of a house exclusively, but it did not give the right to any man who had a joint right with others to every part of the house. He would have been prepared to admit the case of this man if he had been satisfied that he had even a bedroom of his own. He understood, however, that two men used the same bed-room, and therefore had not any part of the house they could call exclusively their own.

"The SHERIFF: Your objection is that it is not a separate dwelling-house, because they jointly occupy the house?

"The ASSESSOR: Duncan Brough occupies one room. He is the sole occupier, and can cook his food there.

"The SHERIFF: It is not exactly the case of a bothy; there is a common place for meals. They each have separate rooms, to which alone they have access?

"The ASSESSOR replied in the affirmative.

"The SHERIFF said it appeared to be the fact that this man had a separate sleeping apartment which he occupied exclusively, and he took his meals in the common room with other gardeners.

"Mr. CAMPBELL said Mr. Nicholson's book said, 'It would probably be held that where two or more servants together occupied a bothy none of them would be entitled to register;' but if it was the case that they each had a separate sleeping room he would not press his objection further.

"The SHERIFF thought Mr. CAMPBELL, the objector, was well advised in withdrawing it."

—— THE CRYPTOGAMIC SOCIETY OF SCOTLAND held its eleventh annual conference at Corrie, Island of Arran, on the 29th ult., and succeeding days. The weather was unfavourable throughout. Fungi were not abundant. This, however, was owing rather to a continuation of barren seasons than to soil or climate. Arran is rich in Ferns. Trichomanes radicans has been gathered on the island. Hymenophyllum tunbridgense, much less frequent in Scotland than in England, was found growing luxuriantly; H. unilaterale, more extended in its distribution, was also abundant. Some idea of the climate of the island may be formed from the fact that Palms, Camellias, Myrtles, Heaths, Fuchsias, &c., have been grown in the open air, uninjured through a long succession of winters. At the business meeting of the Society, Dr. FLAXMAN SPURRELL in the chair, it was resolved to publish a volume of Transactions after the next annual conference, which will take place at Aberdeen in the autumn of next year, under the presidency of Professor J. W. H. TRAIL.

—— HOME GROWN TIMBER.—We extract the following from a Scottish paper:—

"Two years ago a violent storm blew down an enormous number of trees in Scotland. On the Duke of BUCCLEUCH'S estate [at Drumlanrig] a hundred different woods were devastated. The trees have remained ever since as they fell. No one could be induced to undertake the huge contract of removing them. Just lately, however, an enterprising London merchant has purchased the entire lot from the Duke's stewards, who, indeed, had become so anxious to have them removed that they offered them at an extremely low price. The purchaser has begun to do a flourishing trade, for he can afford to undersell the Baltic merchants. The incident seems to show that forestry is indeed a neglected industry in this country. There seems no reason why the Baltic trade should not be permanently rivalled by the products of our own woodlands."

—— EXHIBITION OF AGRICULTURAL AND GARDEN PRODUCE AT NEWRY, OCTOBER 1, 1885.—The Newry public were on this occasion indebted to the enterprise and taste of Messrs. RODGER, M'CLELLAND & Co., for what was one of the most successful and attractive exhibitions of the above witnessed for a long time in this neighbourhood. The large premises were utilised for the purpose, and what with evergreens tastefully disposed, flowers, fruit, garden produce generally, and artistic designs on the walls, the place was transformed into a little Eden of Beauty. Above 300 exhibits were shown. The venture was unique, inasmuch as it was projected and carried out at the risk and expense of Messrs. RODGER, M'CLELLAND & Co., but at the same time it will mark a new departure of a very gratifying kind to amateurs and farmers.

—— SYMPHYTUM ASPERRIMUM.—Mr. MITCHELL HENRY in the *Times* recommends the use of this plant as a forage crop:—

"Five years ago I obtained a small supply of the roots from a London agent, and planted them in a light sandy soil in which they did not do very well. The roots were then taken up, divided like Jerusalem Artichokes, and transplanted into reclaimed peat land, receiving a good supply of farmyard manure. Here the Prickly Comfrey has flourished amazingly, and by subdivision now covers several acres. It has been cut this year already five times, and will be cut again before Christmas, yielding by careful weighing after the present fifth cutting a total of 40 tons to the acre.

"The plant is uncommonly handsome, and when planted should have intervals for its growth of not less than 2 feet, and when gathered it should be cut down even with the ground and receive a dose of liquid or other manure. Cattle eat it greedily, and it is excellent for dairy cows, as it does not flavour the milk. I have seen it stated that the roughness of the leaves makes it distasteful to cattle, but this is an error. It is an invaluable food for pheasants, ducks, and all kinds of fowl, and if chopped up for them in that most useful instrument, STARRITT'S American circular cutter, and mixed with barley-meal or crushed Indian corn, it fattens them rapidly and saves a third of the grain. I have had two of these mincing machines, one large and the other small, both purchased from GILBERTSON & PAGE, Hertford.

"Like all broad-leaved plants, which derive much of their food from the air and the rain, Comfrey grows best wherever Swedes and Mangels flourish, and amply repays the expenditure of a fair supply of manure. It has been stated that no manure is wanted, but this, as regards all plants, is nonsense, for in some way or other you must restore to the soil what you have taken out of it, and root crops especially exhaust the soil. Preserved as ensilage Prickly Comfrey does not seem to have done very well, and the product is unusually disagreeable in smell."

—— PROPOSED INTERNATIONAL EXHIBITION.—A meeting of the Council and Committees of the Royal Horticultural Society is summoned for October 13, with a view of ascertaining the possibility of holding an International Show in 1887.

—— ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S APPLE AND PEAR CONGRESS, 1885.—At a meeting of the Council of the Royal Caledonian Horticultural Society, held on August 14, it was resolved to hold a special Exhibition and Conference on Apples and Pears, in connection with the Society's winter show, in the Waverley Market, Edinburgh, on November 25 and 26. While collections of Apples and Pears are solicited from all parts, for comparison and instruction, the chief object of the Conference is to utilise the favourable opportunity presented by the fine crop this year, for the purpose of gaining information about the Apples and Pears grown in Scotland, comparing their merits, and correcting their nomenclature. All fruit growers, especially in Scotland, are therefore invited to send as complete collections as possible of the Apples and Pears grown in their district; and as the object is solely educational, there will be no competition and no prizes. Is it not necessary that the fruit should be grown by the sender. No limit will be put upon the number of kinds which any contributor may desire to send; but the number of each variety should be from two to four, according to circumstances. The Council are anxious to procure as complete representations as possible of the Apples and Pears grown in each district, and each variety should be distinctly labelled, with the name or names under which it is grown in the locality. It is also most desirable that each collection be accompanied by all the information possible about the climate, altitude, exposure, soil, stocks, method of cultivation, and other particulars, which will be of much value to the committee in drawing up their report. For this purpose forms will be sup-

plied on application to the Secretary. The specimens being strictly for examination and instruction, they must necessarily be at the disposal of the Council where required. Intending exhibitors must give notice to the Secretary or Assistant-Secretary, in writing, not later than Monday, November 16, stating the number of varieties to be exhibited, and the amount of space that will be required. Collections of fruit may be consigned to Mr. William Young, Assistant-Secretary, 18, Waverley Market, Edinburgh, and delivered there on or before Friday, November 20. The Council will pay the carriage of fruit, and take all possible care of it, and will also see that it is properly staged for the inspection of the committee; but they will not be held responsible for any error, damage, or loss of any fruit consigned to them. Exhibitors staging their own fruit can do so on Tuesday, November 24; and all must be staged and the hall cleared for the committee by 10 o'clock on the morning of Wednesday, November 25. Each exhibitor will receive free tickets of admission to the Exhibition for himself and such number of assistants as the Council may deem necessary. The entry form to be filled up and returned to the Secretary, 18, Waverley Market, Edinburgh, not later than Monday, November 16, runs as follows:—

Name of Exhibitor _____

Address of Exhibitor

Number of Varieties exhibited

Amount of Space required _____ square feet

Altitude above Sea-level _____ feet

Aspect _____

Sheltered or otherwise

**The following table is to be filled up, as far as possible, by the exhibitor:—**

Insert in column I. the number, and in column II. the name, of each variety exhibited; column III., its use; column IV., where grown; column V., form of tree; column VI., kind of stock; column VII., nature of the soil and subsoil; column VIII., age of tree, if known; and column IX., general remarks on any other point of interest.

| I.—Nos. | II.—Names. | III. Dessert, Culinary &c. | IV. Wall, Garden, or Orchard. | V. Bush, Pyramid, Standard, &c. | VI. Stocks, Paradise, Crab, &c. | VII.—Soil and Subsoil. | VIII.—Age. | IX. Remarks. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**The following form must be filled in by each exhibitor:—**

Pear: grown at

Name _____

Use _____

Season _____

Bearing qualities _____

Stock _____

Description of tree _____

Exhibited by _____

—— Fruit Catalogue.—It is rare to find a catalogue of fruits, sent out by a nurseryman, so full of information likely to prove useful to the cultivator, as that of M. N. Gaucher, of Stuttgard. The various methods and designs for planting regular fruit gardens with bush, pyramid, espalier, of all patterns of trees, are given, and sketches illustrating the manner in which the various trees, bushes, &c., are pruned and trained. The lists of the various kinds of fruits are very full, and are by no means confined to those of German origin.

— The Wheat Crop of 1885.—We are indebted to the kindness of Sir J. B. Lawes, of the Laboratory, Rothamstead, for the following statement:—

"It is very rarely that the weather has been more favourable than that which we have had this year for the ripening and harvesting of the Wheat crop of the country. The months of July and August, although somewhat low in temperature, were almost without rain. The crop stood up well, and the land was unusually free from weeds. The sheaf binders therefore did their work under great advantages, and it is probable that the records of some of our farmers will show a more rapid and cheaper ingathering of the harvest than they ever before experienced.

"The Wheat plant is a remarkable one, inasmuch as whatever the weather may be, it never fails to yield a crop, though it is only on very rare occasions that its choicest favours are bestowed upon us. Out of the forty-two seasons over which our experiments at Rothamsted have extended, we have had only two which may be called first-class; and yet we have no reason to suppose that each crop of the forty-two might not have been equally good, had the season been equally favourable.

"In writing a few years ago on the influence of climate upon our Wheat crops, we pointed out that in those years in which the yield of Wheat was unusually large, one of the peculiar characteristics of the climate was the steady and progressive increase in the temperature during the whole period of the growth of the crop. We may, therefore, assume that any sudden and violent changes in temperature would be injurious to the crop, more especially if they occurred during the period of the year when the growth was most active. June is in this country the month in which the Wheat crop makes the larger portion of its growth; and it was in June of the present year that we experienced several violent fluctuations of temperature. Eight times we recorded a temperature ranging between 73° and 82° Fahr., followed in most cases by a very sharp fall, the difference in one instance being as much as 20°. As the weather in July and August was altogether favourable, it appears probable that the somewhat unfavourable report we are about to give must be due to injuries done to the crop previous to the month of July.

"The following table gives the yield of some of the plots of our experimental Wheat field, the crop being the forty-second in succession. The selected plots are the same as have been employed by us to determine the yield of the Wheat crop of the country for the last twenty-two years:—

| Harvests. | Unmanured. Plot 3. | Farmyard Manure. Plot 7. | Artificial Manures. Plot 8. | Plot 9. | Mean of Plots 7, 8, 9. | Mean of Plots 3, 7, and 8. |
|---|---|---|---|---|---|---|
| | *Bushels of Dressed Grain per Acre.* | | | | | |
| Present Year, 1885 | 14⅛ | 4 | 31½ | 31¼ | 33⅛ | 29⅛* |
| Average 10 years, 1875-84 .. | 10½ | 29 | 28¼ | 33⅛ | 32¼ | 24† |
| Average 23 years, 1852-74 .. | 14⅛ | 35½ | 31⅝ | 37¾ | 36½ | 28¾‡ |
| Average 33 years, 1852-84 .. .. | 13 | 32⅝ | 32⅞ | 36½ | 35¼ | 27½§ |
| | *Weight per Bushel of Dressed Grain in Pounds.* | | | | | |
| Present Year, 1885 | 61 | 61½ | 61 | 61⅜ | 61 | 61¼ |
| Average 10 years, 1875-84 .. .. | 58⅝ | 60⅛ | 60¼ | 60⅜ | 60 | 59⅝ |
| Average 23 years, 1852-74 .. .. | 57⅞ | 60 | 59¼ | 59 | 58⅝ | 59 | 58⅝ |
| Average 33 years, 1852-84 .. .. | 58 | 60⅛ | 59⅜ | 59¼ | 58¾ | 59¼ | 59 |
| | *Total Straw, Chaff, &c., per Acre, in Cwts.* | | | | | |
| Present Year, 1885 | 10⅛ | 33⅛ | 29½ | 41¼ | 31¼ | 34 | 25¼ |
| Average 10 years, 1875-84 .. .. | 8½ | 27⅝ | 31¼ | 39⅜ | 41½ | 37¼ | 24½ |
| Average 23 years, 1852-74 .. .. | 12½ | 33⅜ | 34⅜ | 41¼ | 42⅛ | 39½ | 28½ |
| Average 33 years, 1852-84 .. .. | 11¼ | 31⅝ | 33¼ | 40⅝ | 41⅞ | 38¾ | 27¼ |

"The average produce of the selected plots shows a yield of not quite 29½ bushels per acre, but as the weight per bushel is slightly higher than the standard of 61 lb., we may take the average yield as being 29½ bushels.

"The peculiar feature of the crop of this season is the large yield obtained upon the plot manured with farmyard dung every year, as compared with the plots which receive artificial manures. This year there is a difference of 7 bushels per acre in favour of the dung, the mean of the artificial manures giving 33½ bushels, and the dung 40 bushels per acre. It is only under very special circumstances that the produce of the dung exceeds that of the artificial manures, and as the dunged plot is supplied every year with a large amount of vegetable matter, while the plots to which we apply artificial manures receive none, we might expect to find that the Wheat crop upon fen soils, and soils that contain much vegetable matter, would be considerably over an average. As the character of the climate has been specially unfavourable to the action of artificial manures, and the Wheat crop of the country generally depends upon the manure of the farm, I should be disposed to think that my figures, as representing the yield of the country, are too low rather than too high. Taking them, however, as they stand, with an area under Wheat of 2,554,852 acres, the home-grown produce will amount to 9,421,017 quarters, and deducting 2½ bushels for seed, the amount available for consumption will be 8,702,465 quarters. The estimated average population for the harvest year, September 1, 1885, to August 31, 1886, is 36,617,201, and allowing for a consumption of 5.65 bushels per head, the total amount of Wheat required to feed the population will be 25,860,898 quarters. The imports, therefore, required to supplement our home produce will be a little over 17,000,000 quarters. Last year we imported and retained for home consumption 18,000,000 quarters, while our estimated requirements did not appear to amount to more than 16½ million quarters; there appears, therefore, to be a large surplus stock of Wheat in our granaries—a sufficient reason to account for the want of any life in the trade."

* Equal to 29⅛ bushels, at 61 lb. per bushel.
† Equal to 23½ bushels, at 61 lb. per bushel.
‡ Equal to 27¾ bushels, at 61 lb. per bushel.
§ Equal to 26⅞ bushels, at 61 lb. per bushel.

—— The Linnean Society.—The meetings of this Society will be held at Burlington House, Piccadilly, W., on the following dates:—1885.—Thursdays, November 5 and 19; December 3 and 17. 1886.—January 21; February 4 and 18; March 4 and 18; April 1 and 15; May 6 and (Anniversary) Monday 24; June, Thursdays 3 and 17. The chair will be taken at 8 o'clock in the evening precisely, at every meeting, excepting on May 24, the day appointed for the anniversary elections, when the chair will be taken at 3 o'clock in the afternoon precisely. The library is open daily from 10 o'clock till 5 o'clock in the afternoon (on meetings nights continuously), and the reading-room, adjoining, from 10 A.M. to 6 P.M., but on days of Council meetings and on Saturdays only till 4 P.M.

—— Travelling Sixty Years Ago.—The subjoined letter from Mr. Bicheno, a well known British botanist, afterwards Colonial Secretary in Tasmania, addressed to the late Dr. (then Mr.) Lindley, will be read with interest in these days of cheap trains:—

"Newbury, April 25, 1819.

"A letter from Mr. Hooker this morning informs me that you purpose in a few days to go down to Halesworth; and he has proposed that we should travel together, if it should be mutually agreeable. The scheme is one I shall be very happy to embrace if it should meet with your convenience, and the mode I propose to travel should be approved. It is my intention to reach London in my gig on Monday, the 3d May, and I should be ready, therefore, to set off the next day, in the afternoon, for some place about twenty miles on the road. On the Wednesday we might reach Colchester, or Ipswich, and the next morning Halesworth. If, however, there was any spot in passing where any botanical rarities are to be found, I shall be happy to fall in with any arrangement that your knowledge of habitats may enable you to suggest.

"Should my proposition be acceptable to you, I shall feel much pleasure in giving you a seat in my gig.

"I have the honour to be, &c. "J. E. Bicheno.'

—— Forthcoming Shows.—On Tuesday next the Royal Horticultural Society will hold a meeting of the Fruit and Floral Committees, and a show of Apples and Pears on that and the following day. The National Pear Congress, inaugurated by the above Society, will last from October 21 till November 4.—At Exeter, on October 22, there will be held an exhibition of Apples and Pears, lasting two days.—Kingston and Surbiton Chrysanthemum Society's Show is fixed for November 10 and 11; and that of the National Society, at the Aquarium, on November 11—12.—The Richmond Chrysanthemum Show will be held on November 5 and 6, when H.R.H. Princess Mary will open the show. The Crystal Palace Chrysanthemum Show will be held on November 6 and 7.

—— The Aylesbury Chrysanthemum Society.—This Society will hold an exhibition on November 19. There are forty classes constituted, and the chief prizes are of good amount, ranging from three guineas downwards.

—— Gardening Appointments.—Mr. Robert Leadbetter, as Head Gardener to A. G. Hubbuck, Esq., Elmstead Lodge, Chislehurst.—Mr. James Church, as Head Gardener to Sir William Parker, Bart., Melford Hall, Suffolk.

## TRADE MEMORANDUM.

The whereabouts of Mr. Edwin Tetlow, of Nottingham, is requested by several correspondents.

## ABIES PINSAPO.*

THERE are few more handsome Firs than this, but though it has been in the country since 1838 it has in our experience produced its cones but rarely. The present occasion, when we are mourning the death of the botanist by whom it was introduced to this country, seems opportune for laying before our readers an illustration of the cone as produced in the grounds at Penrhyn Castle, North Wales (fig. 99).

The tree is now so common that detailed description is not necessary, and it is moreover to be found in all the books treating on garden Conifers. The most striking peculiarity consists in the close pyramidal habit, the densely set short bluntish glaucous leaves spreading in every direction, not flattened out in two ranks, as is usual in Silver Firs. Both in cone and in foliage it resembles A. cephalonica, already figured, but the leaves are shorter, blunter, and much more glaucous. The Pinsapo, moreover, has the great merit of being more hardy and less subject to injury from spring frost than A. cephalonica. This immunity it owes to being later to move in spring. It is one of those Firs in which the side-buds at the ends of the shoot commence to grow before the central or terminal bud. As this occurs on the erect leader-shoot as well as on the side-shoots it is not easy to explain the peculiarity from more favourable exposure to sun. The buds are of a rounded form, and the scales adhering together are pushed off in the form of a little cap. The shoots when growing curve downwards, from superior force of growth on the upper as compared to that on the lower surface (epinasty). The fragrant resin exuded by this tree seems to be specially attractive to wasps.

## YELLOW ROSES.

THE following are a few notes on probably all the yellow-flowered species of Roses at present in cultivation in this country. At any rate, if more do exist in British gardens they are by no means superior to those here mentioned. R. xanthina, of Lindley, which long remained a puzzle, and, indeed, was only known to Lindley, when he published his *Rosarum Monographia*, by a Chinese coloured drawing in Lambert's library, has been recently collected by the Abbé David, in Mongolia, but, so far, has not found its way into cultivation.

*Rosa lutea*, Miller, *Gardeners' Dictionary* (1759).
R. Eglanteria, Linnæus, *Amœn. Acad.*, v., 220 (1760).
R. fœtida, Allioni, *Fl. ped.*, ii., 138 (1785).
R. chlorophylla, Ehrhart, *Beitr. z. Naturk.*, ii., 138 (1788).

Rosa lutea is a very different plant from R. hemisphærica, with which it has been at various times strangely confounded; the last-named belongs to the Pimpinellifolia group, whilst the subject of this note is one of the Rubiginosæ. It is undoubtedly the yellow Rose most generally cultivated in this country, and the one most easily grown. Comparatively few variations occur, Harrisonii and Persian Yellow being two double-flowered forms, and punicea (R. lutea bicolor, *Bot. Mag.*, 1077), the Austrian Brier, a single-flowered one, with the petals red on the upper surface and yellow beneath. This species is a native of the East, but in various parts of South Europe it occurs in a semi-wild condition.

*Rosa hemisphærica*, Herrmann, *Dissertatio Inauguralis Botanico-Medica de Rosa*, 18 (1762).
R. glaucophylla, Ehrhart, *Beit. z. Naturk.*, ii., 69 (1788).
R. sulphurea, Aiton, *Hort. Kew.*, ii., 201 (1789).
R. Rapini, Boissier, *Diagnoses Pl. Nov.*, ser. ii., No. 6, p. 172; *Flora Orientalis*, ii., p. 672.

For a very long time this beautiful but wayward Rose was only known in a double state. The wild type was first described by Boissier and Balansa under the name quoted amongst the synonyms. The double form, handsome as it is, does not find a place in many gardens, and this is owing to the fact of its being so hard to manage. In many localities it refuses to flower at all, and in others the blossoms rarely come to perfection. Parkinson wrote of it: "The flower is so thick and double that very often it breaketh out at one side or another, but few of them abiding whole and fair in our country." Where, however, the species does do well it is deservedly regarded as one of the most handsome of garden plants. The specific name, glaucophylla, was given by Ehrhart on account of the whitish under-surface of the leaflets. It is a native of Persia and Asia Minor, and is largely grown in the East.

*Rosa Ecæ*, Aitchison and Hemsley, "Notes on the Flora of the Kurum Valley, &c., Afghanistan," *Journal of the Linnean Society*, vol. xviii., p. 54, and xix., p. 161, plate viii.

This pretty species was introduced to Kew a few years ago by Dr. Aitchison. It is a distinct plant, remarkable for the small size of its yellow flowers, and for the very broad bases of its homomorphous prickles, resembling closely in this respect the Central Asian R. platyacantha, Schrenk. to which species indeed M. Crépin refers R. Ecæ as a variety. M. Crépin writes: "Specimens of a yellow-flowered



Rose from Mongolia, which I have referred to R. platyacantha resemble R. Ecæ extremely, only the leaves are not glandular. The existence of glands, however, on the under-surface of the leaflets does not to my mind constitute a specific character, for in the majority of types there are glandular and eglandular forms. If I am right in my determination, R. Ecæ bears the same relation to R. platyacantha as R. myriacantha does to R. pimpinellifolia. Plants raised from seeds sent by Dr. Aitchison have grown freely at Kew, but so far have not produced flowers; there are generally seven small leaflets, and the bark of the young shoots is a deep red, the spines being lighter in colour. A native of Afghanistan.

*Rosa simplicifolia*, Salisbury, *Prodromus stirpium in horto Chapel Allerton* (1796).
R. berberifolia, Pallas, *Nov. Act. Acad. Petrop.*, x., 379, t. 10 (1797).
Hultheimia berberifolia, Dumortier, *Dissert. Tournay* (1824).
Lowea berberifolia, Lindley in *Bot. Reg.*, t. 1261 (1829).

This species is doubtless one of the most interesting of all the Roses. It forms a section by itself, being the only species with simple exstipulate leaves. Bunge maintained that the plant was aphyllous, and that the foliaceous organs were simply confluent modified stipules. It is unfortunate that so interesting and beautiful a species is so difficult to cultivate. The following extract is taken from a letter addressed to Mr. Smith, Curator, Royal Gardens, Kew, by Herr Max Leichtlin:—"I had it eight years ago in full flower and it was greatly admired by Boissier who had also seen it in its native haunts. It grows best in fissures of rocks exposed to all weathers but I think in your moist climate you will find it difficult to do well." The general aspect of the plant in a state of Nature may be imagined from the description, &c., extracted from a letter written from Camp Tir-Phul, Northern Affghanistan, by Surgeon-Major Aitchison to Sir J. D. Hooker, first published in *Nature*, July 9, 1885:—It covers the whole country in localised patches, and being very dwarf in habit, not above 2 feet, the flowers are seen to perfection; they open out expanding almost flat, when the brilliant eye, formed by the claret colour of the bases of the petals, gives it quite a character. Amongst my Rose hips sent to you last year this was one of the species. I hope to be able to supply you with a lot more, it would make a lovely flower border." In the letterpress accompanying the beautiful coloured figure in Redouté's *Les Roses*, Thory says that it thrives best when side grafted on Rosa spinosissima. If the plant is protected overhead by some means against the superabundant moisture o our British climate and placed in an open well drained sunny spot it might succeed; where it does thrive it sends up numerous suckers from its creeping underground stems.

The accompanying illustration (fig. 100) was made from a plant now growing at Kew. A native of Affghanistan, Persia, and Siberia.

*Rosa Hardii*, Cels fieres, in *Annales de Flore et de Pomone pour les années* 1835 6; Paxton, *Magazine of Botany*, vol. x., 195 (1843).
R. Hardyana, *Bon Jardinier* (1842).

Rosa Hardii.—This beautiful Rose is supposed to be a hybrid between R. berberifolia and R. involucrata, Roxburgh (R. clinophylla, Thory). In the Kew herbarium there is a specimen gathered in the Luxembourg garden on June 20, 1836, with the information in Gay's handwriting that the plant had originated from the seed of R. clinophylla planted near a bush of R. berberifolia. That the cross was not artificially made is proved by the following note from the *Bon Jardinier* for 1842, also in Gay's handwriting:—"Mons. Hardy obtained in 1836 from a sowing of R. clinophylla, the seeds of which are presumed to have been fertilised by R. berberifolia, a new Rose which bears his name." . . . According to Mr. W. Paul (the *Rose Garden*, 1848), "The most splendid collection in France is that in the Jardin du Luxembourg, in Paris, which is under the superintendence of M. Hardy. Most of the plants there are of some age, and flower most profusely in the season. It is true they look rather drawn, but when we consider their proximity to the heart of the city, it is surprising that they flourish so well. M. Hardy is no stranger in the Rose world: one of his varieties alone would have sufficed to render his name popular, but he has been fortunate enough to raise many others of first-rate properties, some bearing the after-appellation of 'Du Luxembourg.' And how could it be otherwise, when he has devoted so many years to the cultivation of this flower, and raised so many thousands of seedlings?" R. Hardii is a much freer grower and flowerer than R. berberifolia; it has from five to seven leaflets and handsome flowers, the petals being sulphur-yellow, with a crimson blotch at the base of each petal. The accompanying illustration (fig. 101) was made from a specimen which flowered in a pot under glass in April in the garden of Mr. Herbst, at Richmond. *Geo. Nicholson, Royal Gardens, Kew.*

GENTIANA PNEUMONANTHE.—In gardening, especially in experimental gardening, there must be, of course, many disappointing failures, there are, however, happily as many unexpected successes. I have lately had one. A plant of Gentiana pneumonanthe, our lovely native Gentian, planted near our pond, has sown its seed all about, and a number of young plants have come; some now in bloom. *George F. Wilson, Heatherbank, Weybridge Heath.*

* Abies Pinsapo, Boissier, in *Bibl. Univ. Genevæ*, 1838

## Home Correspondence.

**Vanda cœrulea.**—I read at p. 431 that "the difficulty attached to the growing of this species is doubtless the greatest obstacle that prevents its becoming common." At one time V. cœrulea was considered a difficult species to cultivate, but the right system of culture has been found out, and frequently described in the *Gardeners' Chronicle*. It is as easily grown as any other Vanda if its requirements are attended to. A few years ago large quantities of it were introduced and sold at a cheap rate; it is not expensive now, so that neither expense nor difficulty of culture need deter any one from growing this distinct and beautiful species. In its native habitat, Silhet, Northern India—from whence it was first introduced in 1849—it grows on the tops of isolated trees, where it is well exposed to the sun and the free air all round it. An Indian gentleman told me that he had seen this Vanda in its native habitat with frost on the leaves in the early morning. The natural conditions under which the plant grows and flowers freely can easily be imitated, although no one would allow them to be frozen as a necessary part of their culture. It grows and flowers with great vigour at Great Gearies in the Cattleya-house. The plants are growing in upright Teak cylinders full of broken potsherds, with just a little live sphagnum at the top. They are placed close to the glass at the sunniest end of the house, and freely supplied with water during summer and autumn. We are careful not to shade more than is absolutely necessary. The specimens at Kew are not in a very vigorous healthy state, consequently the spikes and flowers are not so large and well coloured as they ought to be. What does "F." consider a handsome flowering specimens? *J. D.*

**Vitality of Seeds.**—Let me add that some of my best Tomatos now growing are from seed that I saved ten years since. I sowed these on February 14 with others, and gave them up for dead, as they were a week or ten days behind the others in coming up. Nothing kills seeds sooner than washing them; of course, I am speaking of fleshy seeds. My own practice in saving Melon, Cucumber, or Tomato seeds is to spread the seed on a damp flannel, and gently rub the flesh off. All old seeds of the above are better for fruiting than new seeds. *Stephen Castle, West Lynn, October* 1.

**"Hortus Floridus."**—I am indeed very glad that Mr. Cecil C. Wood has declared himself the fortunate owner of this rare old book. I never by any possible means claimed it, and it was most kind of Mr. Woods to have lent it to me. When I took the book to Dublin last April, just to show it to my friend Mr. Burbidge, I told him I was not its fortunate owner, but merely brought it as a curiosity; Mr. Burbidge made notes, the *Gardeners' Chronicle* got them, and the horticultural world are the wiser. I fancy Mr. Woods is angry with me, or would not trouble you. I even told Mr. Woods of the notice in your paper, gave him your address, and got him to write you for copies. Indeed, when he says the volume has been in his family for generations he is perfectly right. The proprietor of Chiplee (Chip-Lee) being the possessor of a very rare old place, full of all sorts of antiquated relics of a bygone age, you may well call him a "chip from the old block," indeed one of the oldest families in the city "on the Lee." Who has not heard of Father Prout's

> "Bells of Shandon,
> That sound so grand on
> The pleasant waters of the river Lee."

*Wm. Baylor Hartland, Temple Hill, Cork.*

**Early Autumn Crocuses at Kew.**—These form at present a very interesting study, a considerable number of distinct species being in flower. C. Clusii displays its pretty pale lilacy-purple flowers in the rock garden, and in a long narrow border the following are in flower:—C. zonatus, from Cilicia, has bright lavender coloured flowers with a yellow centre. C. iridiflorus, from Transylvania, has rich purple flowers, very distinct and beautiful. C. uniflorus, bluish-purple, a well known species. C. etruscus, purple, from Tuscany. C. banaticus, a pale blue species from Transylvania. C. Tommasinianus, Dalmatia and Servia, very pretty pale mauve. C. hyemalis, a purple species from Palestine; C. aërius, one of the most distinct and pretty, the colour bright lavender, yellow centre (Asia Minor). C. speciosus, a well-known handsome species, bluish-purple; it is found wild from Transylvania to Persia; there is also a distinct form of it with larger flowers. C. cancellatus var. cilicicus, found in Syria and Asia Minor; this is also distinct, pale blue, marked with purple lines. *J. Douglas, Ilford, E.*



Fig. 101.—Rosa Hardii ?: flowers yellow with a deep orange "eye." (see p. 468.)

**Reversion in Dahlias.**—I set this year one of last year's Dahlias (double) which I saved during the winter. I have only a small garden, but it has grown very fine with small bloom in great quantity. I find there are several blooms coming from the one stem. Will you tell me if this is a usual thing, as I have grown many before, and the same thing has not come across my notice. *F. Feistel.* [A "double" Dahlia, so called, is an abnormity, which Nature, if left alone, often strives to correct. Ed.]

**Rainfall at Gordon Castle.**—I herewith enclose an abstract of depth of rain registered here for the past nine months, and the amount for the same period of 1884, the difference on the aggregate for the first seven months in each year being little over half an inch in depth. It will be observed that the monthly fall in 1884 differed widely, varying from 0.61 to 3.33 inches; while in the present year, with the exception of May, 2.22 inches, also under average, variation was only about half an inch for each of the six months. These observations having been taken through a dry period, I have thought may interest some of your readers in the *Gardeners' Chronicle* to compare with their own. And it may perhaps induce others to do so likewise:—

| *To September* 10, 1885. | Inches. | *For same period in* 1884. | Inches. |
|---|---|---|---|
| January .. .. | 1.56 | January .. .. | 3.33 |
| February .. .. | 1.79 | February .. .. | 0.77 |
| March .. .. | 1.54 | March .. .. | 2.02 |
| April .. .. | 1.25 | April .. .. | 0.01 |
| May .. .. | 2.22 | May .. .. | 1.26 |
| June .. .. | 1.42 | June .. .. | 1.85 |
| *July .. .. | 1.82 | †July .. .. | 1.62 |
| August .. .. | 4.01 | August .. .. | 2.45 |
| September .. .. | 2.83 | September .. .. | 0.37 |
| | 18.46 | | 14.88 |

*John Webster, Gordon Castle Gardens, Oct.* 5.

**Primula farinosa.**—In last week's issue of the *Gardeners' Chronicle* (p. 436) Primula farinosa is said to occur "on our Scottish mountains, as well as in Switzerland." So far as the Scottish habitat is concerned this statement is not strictly correct, for our British Floras concur in the statement that in Scotland it is only known to grow in one locality, namely, at Bridgehouse, near West Linton, on the south side of the Pentland Hills, about 18 miles from Edinburgh. In England it occurs in North Yorkshire, Lancashire, Westmoreland, Cumberland, Durham, and Northumberland, being generally local or rare, though common in a few localities. Outside Britain its range is rather extensive, as it is widely spread in Europe, and occurs also in Northern Asia, Tibet, Greenland, and the North United States, the stations, however, being generally northern or alpine, as the plant belongs to what is known as the "arctic-alpine" type. The closely allied P. scotica has a much more limited distribution. In Scotland it occurs in the counties of Caithness and Sutherland, and in the Orkney Islands; and on the Continent of Europe, in Lapland, Norway, and the mountains of Sweden. *R. A. Rolfe, Herbarium, Kew.*

**Lilium auratum.**—Year by year we receive fresh convincing proofs of the variability and capriciousness of this handsome Japan Lily. Some bulbs will produce one or two enormous flowers on a stem, and the number will range from that to twenty on separate individuals. The stems will also vary from 1 or 2 to 7 feet in height, or perhaps more in rich soil in a sheltered situation, especially where the soil has recently been well dug or otherwise ameliorated. In

* Total for seven months, 11.62 inches.
† Total for seven months, 12.06 inches.

one of the Rhododendron beds at Kew, alongside the broad walk leading to the Palm-house, is a plant bearing the enormous number of 132 flowers. All these are the produce of one stem, which is about 3½ feet high, and fasciated. The flowers are of medium size and perfectly formed, all, or nearly all, fully expanded. Towards the top the stem divides into four strong branches, and these again subdivide more or less, and bear the flowers in a dense horizontal ridge, forcibly reminding one of the Cockscomb, Celosia cristata, or, on a smaller scale, the fasciated stems of Sedum reflexum monstrosum. The final subdivisions of the stem, moreover, are racemose, as in the normal form or habit of the plant, but they are so shortened as to bring the flowers on a comparatively uniform level. Many varieties of this Lily are cultivated, and the type is figured in several botanical works, such as the *Botanical Magazine*, t. 5338; *Flore des Serres*, 1528-31; and the *Revue Horticole*, 1867, 371. *J. F.*

**Begonias.**—We send you a small bit, cut from a Begonia growth made this year, as we thought you might like to see it. The variety is an old but very good one, called Vesuvius, and the plant was grown in a 10-inch pot and measured 7 feet high and 6 feet through, and it was the admiration of all who saw it, being covered with bloom all summer. The plant was grown in very ordinary soil, and a liberal dose of our Vine and plant manure. We sent a thicker bit than what we send you to Mr. Laing, of Forest Hill, knowing he is great in Begonias. *W. Thomson & Sons*, Clovenford. [The portion of stem sent measured 1 inch in diameter. Ed.]

**Seed-pods on Imported Orchids.**—In reference to the remarks at p. 430, it is perfectly well known that imported Orchids come over with seed-pods on them, ripe or otherwise; hundreds of seed-pods may be found clustering on the plants in the sale-rooms—scores of them on one plant. There is no process in Orchid culture at home more easy than furnishing the plants under one's care with seed-pods. A plant of Odontoglossum vexillarium in our collection had a pod on it a day or two ago, self-fertilised. The difficulty consists first in getting the seeds to vegetate, and in the next place to rear the plants up to the flowering stage. It is no use sowing seeds from pods of which the pollen parent is unknown; we are frequently cutting off such pods, and disposing of them in the rubbish heap. *J. D.*

**Disa macrantha.**—Mr. N. E. Brown is not quite correct in his assumption that I inquired of Disa crassicornis at p. 374. What I wanted to hear of was the true D. macrantha, of which I believe there is a specimen in the British Museum, found by Cooper in Kaffraria. As Mr. Brown did not see—so far as I am aware—Mr. Sanderson's original sketch, from which I made the copy now in the Kew herbarium, it would have been more generous, had he not gone out of his way to criticise that which he has not seen, especially as the "imagination" of a would-be critic is quite as powerful for evil as is that of an artist. I know Disa crassicornis (=D. megaceras) well as a cultivated species, and made the original sketch, from which the *Garden* plate was prepared, at Glasnevin, some five or six years ago. It first bloomed with Mr. Elwes, whose specimen was that figured in the *Botanical Magazine*. If Mr. Brown will now tell us somewhat of the true D. macrantha of Thunberg I shall be much obliged. *F. W. B.*

**Satyrium carneum.**—Would Mr. J. Smith, of Newry (p. 432), kindly inform me what soil is best suited for the cultivation of this interesting Orchid? Time after time have I procured tubers of the plant, but although I did my best have never been rewarded with a flower. Cultivation cannot, however, I fear, be the sole cause of failure, but the injured state in which the tubers are usually received. *A. D. Webster.*

**Outdoor Tomatos.**—Through the large and admirably conducted trial of Tomatos which has been conducted in the London Road nursery of Messrs. Sutton & Sons, at Reading, that firm has rendered considerable service to all who may wish to cultivate these fruits in the open for market or other purposes. The trial included some forty of well known kinds, and was throughout conducted most impartially. It comprised eleven beds, each containing some 150 plants in pairs, three abreast, each plant being tied to a single stake, as throughout the simple plan of keeping every plant to a main stem alone was adopted. That style of training is easily insured by simply cutting away all side shoots. Generally, where the growth was good the resulting crop of fruit was remarkable. One entire bed was devoted to Chiswick Red, which seems to do marvellously well out in the open; the plants carried each from five to six clusters of fruits, large and very heavy, all the earlier fruits being quite ripe. Perhaps the most noticeable as a promising market kind is Earliest of All, because under this form of culture it showed without exception precocity in ripening fruit in advance of all other sorts. The crop, too, was a heavy one, and to secure fine samples in the open would be all the better for thinning. The fruits are of a rich colour, and somewhat punctured, though improving as the season advances. Powell's Early comes near to this in appearance, but is later, whilst a very fine and free cropping kind is Sutton's Main Crop, apparently here one of the very best for outdoor culture, rich in colour and fine in fruit. Several American kinds were tested, but seemed generally to lack robustness. Williams' Red King, Hackwood Park, Trophy, Hathaway's Excelsior, Ne Plus Ultra, and various other good red kinds under glass cropped moderately. Yellow kinds, of which there were several representatives, seemed to lack the needful robustness for this fully exposed form of cultivation, which naturally differs materially from wall training. The plants were all raised in heat, potted up singly, then turned out early under a fence in manure to make root, and from thence, later in the season, planted out into the open ground. Happily the sharp frosts of a fortnight since did the plants no harm, neither has disease. *A. Dean.*

**Tropæolum canariense and Clematis Jackmanni.**—Tropæolum canariense intertwined with Clematis Jackmanni and trained up to a wall has a very striking and pleasing effect. A few days since, in walking through a village in this immediate neighbourhood, my attention was attracted by some creepers growing up a wall. On getting nearer to them I found them to be Tropæolum canariense and Clematis Jackmanni. The deep, intense violet-purple of Jackmanni seemed to bring out the beauty of the Tropæolum. They are of the simplest culture. Clematis Jackmanni, being hardy, will last for a number of years. The Tropæolums are readily increased by seed, which should be sown early in order to get strong plants. *M. Saul.*

**Abundance of Grapes and Strawberries for Every One.**—I have ventured to beg your insertion of the following suggestion, which I believe will be of interest to your numerous readers, endeavouring to show the possibility and practicability of every householder being the possessor of a hothouse, enabling him to grow Grapes, Strawberries, &c., and to compete favourably with his more wealthy neighbours. The plan by which this boon could be secured is to utilise the roof of the house, which is not required for any particular purpose, by covering with glass instead of slate, &c., the hothouse is formed at once. The room would require an ordinary floor, and could be reached by the ordinary staircase. The Vine might be trained up the outside wall until it reached the hothouse, whilst Strawberries should stand on shelves, or hang from the roof. It would be necessary to have a stove in winter, the pipe of which could turned in the chimney which passed through the room. In districts where water is laid on a pipe might be carried up for watering Strawberries, flowers, &c. The Vines would not require any water. *Amateur.* [Experience has not justified the adoption of this plan except under special circumstances. Ed.]

**Veitch's Sturdy Pea.**—This excellent late Pea is the result of a cross between those two well known late varieties—Veitch's Perfection and Ne Plus Ultra. A few weeks since I had the pleasure of seeing several rows of it growing side by side with one of its parents—Ne Plus Ultra—in Tyninghame Gardens, near Prestonkirk. In the rich East Lothian soil the haulms, which are of a branching habit, robust in growth, perfectly free from mildew, and heavily cropped with long handsome pods containing from eight to ten large Peas, attain to a height of 4 or 5 feet. Sturdy is said to be the latest Pea in cultivation, but whether this is correct or not I am unable to say, though, judging by the examples seen at Tyninghame, it will continue to yield good gatherings until the haulms are cut down by frost. The same may be said of the several fine ranks of Ne Plus Ultra, which is in every soil and climate a grand late bearing Pea. Mr. Brotherton, the head gardener at Tyninghame, speaks very highly, as well he may, of Veitch's Sturdy as a late Pea. In conclusion, I may remark that I had never before seen such a fine healthy and heavily cropped lot of Peas—Peas as tender and sweet as could be desired in September, as those of which I write. The kitchen garden produce has not suffered so much from drought in Scotland—in the Lothians, at any rate—during the past intensely hot summer as in England. *H. W. Ward.*

## Notices of Books.

**Greenhouse and Stove Plants.** By Thomas Baines. (John Murray.)

This is a valuable book, on account of its clear and extensive cultural information. The methods which have led to the author's well-known success are communicated by him to the fullest extent that is possible by means of pen and paper. The cultural details (herein revised, the author says, so far as necessary) have, for some of the plants, appeared in the *Gardeners' Chronicle* and the *Garden*, and it is now a matter of great convenience to have these scattered communications brought together. The book opens with separate chapters upon the general management of greenhouse plants, stove plants, Ferns, and Palms; then follows, in one alphabetical arrangement, an enumeration of the plants of these classes, with details of special culture for genera and species. Short descriptions of the plants are given in popular language. The two first chapters are treated in sections, and bring readily to view the important heads of the subject, such as the position, form, and construction of the houses, light, air, shade, water, soil, potting, and propagating. In these chapters the principles of indoor gardening are clearly and concisely stated, and the information is well selected, touching upon all that is most important.

Under "Greenhouse Plants" the author justly remarks that "amongst the hard-wooded occupants of the greenhouse are many of the most beautiful, distinct, and profuse flowering plants in existence," and it is a good feature of the work that he has included a majority of the best. The description of a suitable house is not unnecessary, and the author rightly condemns the old system of sliding lights. He is well acquainted with the reasons of failure in plant cultivation, and he is emphatic upon several important points which are often little regarded. Some excellent remarks are given upon the necessity of full and abundant light, which is often better understood by market growers than it is by gardeners; and on the subject of ventilation it is usefully taught that plants will not suffer draught with impunity. The instructions for watering are given in general terms, for, as the author says, it is difficult to treat of the subject in any other way. It is only to be learnt by practice and close observation, supported, of course, by the proper considerations here given in detail. The weak part of this chapter is that which treats of propagation, to which only a few lines are devoted. The next, on stove plants, is treated in a similar way to the last, but with better instructions for propagating, and with equal success in affording the most essential information. The system of planting out is condemned with very slight reservation, and a number of objections are stated. It, however, has advantages, and is often the best system that can be adopted for climbers, and certain plants like Musa coccinea and M. rosacea are never so fine as when planted out; indeed, few would fail to admit the great advantage it has for the proper subjects. We have to express approval of what is said with regard to excessively low night temperatures and exhauting periods of so-called rest for tropical plants in winter. Low night temperatures are sometimes adopted, perhaps on the score of economy, but whether this is so or not we often find in that mistake an explanation of the unsatisfactory condition of certain tropical plants. On ventilation the author wisely remarks that "the closest, glazed, and in

other ways the best constructed house we ever saw will admit sufficient air for the requirements of plants in the stove during the winter months without opening either the roof lights or side shutters." Air is sometimes given as if horticultural structures were air-tight. One mistake often leads to another, and air is sometimes given to clear off excessive moisture, the existence of which should be avoided. Ventilation is thought sometimes to be insufficient when the plants are really suffering from insufficiency of light. In relation to other matters ventilation is often but little understood, and we are glad to recommend attention to what our author says. The chapter on Ferns gives a general account of their cultivation, though but little is said in the body of the book of special culture, as needed by certain kinds. Had it been given we should have read with interest the author's treatment of Cheilanthes, which are often badly grown, though perfectly amenable to proper management. Ferns are not extensively dealt with, and it would be more satisfactory, perhaps, to have given them greater attention, or to have omitted them, as forming a sufficient subject for a separate treatise. The chapter on Palms is quite in accordance with our own experience, though more might be said. We have long observed that gardeners unaccustomed to Palms are apt to injure and even kill them by tearing out the brittle roots which coil near the bottom of the pot, and are the chief feeders of the plant. The broken roots are sure to perish, and it is unnecessary to disturb them much, because the older roots—especially in the case of young growing plants—are continually being superseded by new and stronger ones from the stem itself.

We now come to the body of the work, arranged in alphabetical order, according to the particular plant. Cultural instructions are freely given, even to the extent sometimes of trenching upon matters of general application. Seeds so easily raised as those of Francoa are the subject of minute detail; but the instructions that are given will generally be found reliable, and will prove of value to the skilled gardener as well as to the learner. In all that comes from the author's experience no better guide can be found; it is only sometimes that we must differ from him, as when he says that Leucadendron argenteum will thrive under treatment as advised for Rhopalas. In our experience such treatment would soon be fatal to it, and we find that it must have less moisture. Sarmienta repens is said to require the same treatment as Columneas. Now this plant, as the author says, belongs to the stove, while Sarmienta belongs to the greenhouse, and requires a very different and particular management. For the sake of so pretty a plant we wish the author had given details as to this. At Kew this difficult plant has lately been very successfully grown on pieces of Tree Fern stem. Desmodium gyrans is recommended to be grown from cuttings, but in our experience it can only be satisfactorily grown from seed—a method that is not mentioned by the author. Nelumbium, in comparison with Nymphæas, is said to require a good depth of water, but, on the contrary, from the habit of the plant, even less is necessary.

A short selection of herbaceous plants for the greenhouse at p. 200 touches a sphere of great usefulness for many kinds, for which they are both legitimate and valuable, so that the list might well have been longer. Annuals should also have received attention.

The subject of insects, we think, is permitted to intrude superfluously: each introductory chapter, except that upon greenhouse plants, and the majority of those on the different genera, conclude with a paragraph relating to their extermination. We read the negative information forming a paragraph that "Gloriosas suffer but little from the depredations of insects, their juices not being relished by them." Cautions with regard to delicate plants and hints with regard to many, are useful enough, but to be told that leathery plants, like Sanseviera zeylanica, should be sponged when affected by scale, is unnecessary. The usual remedy of fumigation for greenfly is constantly mentioned, but, so far as we have noticed, no cases are pointed out for which it is unsuited.

Good selections of plants are given, but we notice important omissions, and, as in the case of Grevillea, some of the best kinds are not among those included. We find no mention of the splendid Clianthus Dampieri, though full justice is done to C. puniceus. Only one Clematis is mentioned under the genus, and nothing is said of the magnificent hybrids which are so fine for the greenhouse, except that they are included in a list of hardy shrubs It is not easy to understand why Anœctochilus should be admitted, while other Orchids are not. In the preface it is said that the best new plants up to date are included, but three or four well deserving of this description we do not find.

We cannot always congratulate our author upon his use of terms. On the titlepage we are told that 500 families of plants are included in the work, which is a good many more than is allowed by botanists for the whole of the vegetable kingdom. Here, ofcourse, genera are intended, though elsewhere the word is used in its correct application. Under Macrozamia we read that "These belong to the Cycad family and are a very distinct and handsome section of the genus." This confusion of common terms is to be regretted. Quite erroneous information is sometimes given, as in the case of Desmodium gyrans, the leaves of which are said to be constantly moving with the regularity of a clock—just the opposite of what is true. Trichiniums are said to be low-growing annuals with somewhat singular flowers not possessing much merit, and it is added that they can be raised from seed. Now T. Manglesi, which comes under this description, is perennial, and though good seeds of course would grow, it must generally be propagated by means of the root. Moreover, it is a meritorious plant when well grown. The tuberous Begonia cinnabarina is included under the fibrous-rooted kinds. The Chilian Embothrium coccineum is said to come from New Holland. Ipomœa Horsfalliæ has been supposed to be a native of Africa or the East Indies, and as the mistake is repeated here we may mention that the true habitat is Jamaica, as shown in the *Gardeners' Chronicle* of May 2, of this year.

An excellent alphabetical index adds to the value of this work. The whole book greatly requires further revision as partly indicated by our remarks, especially in matters relating to the physiology and natural history of the plants mentioned; but the value of the cultural information, especially as concerns the more popular plants, is so great, that we are bound on this head to give it our strongest recommendation.

## NEW ZEALAND BOTANY.

Since the year 1867, when Dr. Haast explored and exhaustively described the geological and botanical features of the headwaters of the Rakaia and surrounding alpine country very little additional knowledge of its mineral and floral resources has been obtained. For nearly twenty years this glorious mountain region with its glaciers, rivers, forests, and lovely valleys, has remained in its primeval solitude, save for the occasional visits of shepherds from the outstations of Glenthorne and Mount Algidus, or of some adventurous horseman who has dared the perils of the numerous rivers to gaze upon the wonders of the high alps at the Stewart Glacier or at Browning's Pass. The discovery of gold-bearing quartz in the Rolleston range has at length roused public attention, the miner is at work, the plucky prospector is testing the ground in the very heart of the ranges, and the recent discovery of an extensive quartz reef on Mount Harman will probably cause the opening up of the country.

The valley of the Wilberforce, north-west of Mount Gargarus, to Mount Sebastopol, running through most romantic scenery, may be roughly estimated at 20 miles. On the right is the Birdwood range, with the Black range beyond; on the left is the Rolleston range, with Mount Williams at its western end, the spurs running into the valley. These spurs and the gullies between are covered with dense forests, which feed the small streams flowing into the Wilberforce. These tributaries are the Boulderstone, the Kakapo, the Kiwi, the Moa, and the Stewart or Unknown River, occurring in the order mentioned. Higher up is the Cascade range, with its numerous mountain torrents falling into the North Creek, which in turn empties itself into the Moa. One of the chief sources of the Wilberforce is the Stewart Glacier—an ice river from Mount Mystery in the central range, backed by Mount Collet, and Mount Park, with Browning's Pass to the north.

When the writer and his friends, Messrs. Brown and Arnold, met at the station on the morning of May 4, the weather for a botanical trip to the Wilberforce was not cheering, heavy masses of cloud were rolling up from the southward, and there was an ominous bite in the air which betokened rough work in the ranges. Leaving the train at Springfield we arranged our swags and started on the long journey to the Moa River, a distance of 60 odd miles.

Mr. Landers welcomed us with the true hospitality which the dwellers in tents have always given to the stranger, and the cook put before us a substantial meal, which came to the famished botanists like manna in the wilderness. Slept like tops in comfortable camp beds, and next day we met with Mr. Slater, a prospector, who knew the country. He took us over the Moa River, and showed us the habitats of Gleichenia Cunninghami and Dracophyllum Traversii. This Epacrid grows 30 feet high, towering above the other parts of the bush, its long branches extending horizontally, bearing a tuft of leaves at the extremity, from which rises the bloom like a Pine-apple. It is certainly the most remarkable tree of the alpine flora. Many young specimens were collected; those about 2 feet high are very handsome, with filiform leaves drooping like a Dracæna. There is another variety, D. longifolia, but its leaves are smaller and more imbricated. The tree was met with up to the snow, so that its hardy character cannot be doubted. The prevailing timber tree on the Moa is Libocedrus Bidwilli, the Incense Cedar, the Kawaka of the Maoris. The tree attains to 30 or 40 feet in height, its conical top and dark green foliage being visible above the surrounding bush. The bark, which peels off easily in spring, is utilised by the miners in various ways. Like all Cedars the wood is dark red, and splits readily into slabs, but as the centre of most of the trees is hollow, and the wood very soft, it is not of much value as timber. It is singular that the wood of the other variety, Libocedrus Doniana, which grows in the North Island, is hard and valuable. The Ribbonwood, Plagianthus betulinus, is easily distinguished from the surrounding forest at this season by its golden leaves; the tree is deciduous, and its leaves had been touched by frost.

On our return to the North Creek we separated, my companions taking different routes; but I had definite objects in view, and in company with Mr. Slater went in search of Ranunculus Godleyanus. Mr. Landers told us that the yellow Buttercup grew at a considerable elevaion up the North Creek, so we made a start in that direction. Following that creek, which flows into the Moa River a few chains above the camp, on either side were spurs of the Cascade range covered with forest up to the snow-line; at intervals were small waterfalls pouring over precipices among the large boulders which had been rolled down the creeks. Ranunculus Lyalli was plentiful on the banks, Veronicas lined the margins of the bush, while fine specimens of Angelica gingidium occurred some 2 feet across. The miners called it Aniseed, because the leaves and seed have a similar flavour. Horses are very fond of this aromatic herb, and eat it greedily. Crossed the North Creek on a temporary bridge which led to the reef, on the slopes of the mountain; it is situated 1600 feet above the creek, and can only be worked in fine weather; in winter the claim would be covered with snow.

Leaving the track we followed the bed of the North Creek, climbed over big boulders, and crossed the creek several times. When not in flood this creek is about the size of the Avon, but when there is a fresh it is a mountain torrent, tumbling over boulders and washing everything before it. Dracophyllums grew on the slopes in abundance, their peculiar heads standing up clear of the bush. Passing No. 2 creek we saw mountain Lilies growing under the side of boulders and burnt scrub, whilst others grew on the vertical faces of rocks, the roots wedging themselves into the crevices. Ourisia macrocarpa grew in patches 2 or 3 feet across, its bold dark green foliage, purple underneath, and large trusses of white flowers, rendering it one of the finest of alpine herbaceous plants. We found the best patches growing in peaty soil with water trickling among their roots, on the sides of watercourses. The other variety, O. macrophylla, we found growing in similar situations, but the leaves and blooms are smaller. Some fine plants of Aciphylla Monroi, 8 inches high, were noted, evidently the male variety. The scenery up the creek baffles description; ahead there is Mount Mystery, to the left Mount Williams, with its ragged looking peaks sticking out of the snow, and on the right mountains covered with forest, the creek between. We had

some hard climbing to reach No. 5 creek, where the rare Aciphylla, with red midribs and spines, was met with. Half-a-dozen specimens were collected. A large Aciphylla, with dark green leaves, grew among the boulders. Carmichælia odorata was apparently very local, as it was only met with once in No. 5 creek; it was out of bloom, but the miners said it scented the air in summer. Straggling plants of Edelweiss, Helichrysum grandiceps, now appeared, showing that we were not far off the yellow mountain Lily. Scrambling over some loose boulders we caught sight of what appeared to be Ranunculus Godleyanus, about 300 feet above. Everything was frozen, and plant-collecting at 5000 feet is not very nice work, hands and feet being so benumbed with cold as to be almost useless. Celmisia coriacea, the Cotton plant, grew in abundance at this elevation, its silvery foliage and graceful habit making it a very pretty plant. Of C. petiolata we saw a few plants growing in boggy ground. In shady places Ranunculus Lyalli was in full flower, and on one plant there must have been fifty expanded blooms. Several smaller varieties of Ranunculus grew among the stones. We at length reached R. Godleyanus, named after Mr. Godley, the pioneer of Canterbury. It has dark green foliage with shining yellow flowers borne on flower-stalks like R. Lyalli. With a prospector's pick we dug the plants out of the shingle slide, composed of broken slate, water continually running at their roots from the melting of the snow above. As the plants were covered with snow and ice it was difficult to get them out even with the help of the pick. Some very fine specimens of this rare plant were collected, but as the sun was going down and it was freezing hard we decided to commence the descent. We had several miles of very rough country between us and the camp, which required daylight to travel over in safety. The prospect of spending the night in that alpine region without tent or food *à la* Mr. Green and his guides a Mount Cook, was not pleasant, so we came down at top speed. In No. 5 creek we saw the large white flowers of Veronica macrantha, also a new Gentian with white flowers and pale green leaves in the shape of a rosette. Both seed and plants were collected. On the way to camp a variegated sport on a plant of Senecio Bidwillii was secured for grafting. We arrived at camp at 7 P.M., heavily loaded with plants and about twenty varieties of seeds which were collected during the day.

Friday morning broke brightly, and we made sure of a good day's collecting in Happy Valley and Rebel Creek, which flows into the Moa River a short distance above the camp. Senecio Lyalli, with pure white flowers and dark green foliage, was growing near the water. It was evident that this valley had been filled with ice in winter, a mass remaining unmelted, with water running through a tunnel beneath. This valley bears due south, and the ice had but recently melted, so that vegetation was springing up. At one place in a bed of broken rock and shingle there was a grand alpine garden. Both the yellow and white mountain Lilies by the thousand were in full bloom, interspersed with the white Marigold (Senecio Lyalli); Ligusticum proliferum, with its highly ornamental foliage, was dotted about among the Lilies, and even the little Montias were represented in this natural garden. The most graphic description would fail to give an adequate idea of the purity and beauty of these alpine flowers, when seen in their natural habitat in broken ground among rocks and boulders, piled up in every conceivable position as the glaciers and floods have left them. Only one variety of Aciphylla grew in this cold valley which the sun never enters, everything was frozen, indeed, it was dangerous work, as we could get very little grip with our feet on the shingle slips, which had become transformed into ice slides. On a cliff we saw a fine patch of Edelweiss, far out of reach, also large plans of Ranunculus Godleyanus just coming into bloom. Polystichum cystostegium, the alpine Fern, adds much to the beauty of the scenery, its green fronds contrasting with the rocks. On a bank of shingle and rocks were small patches of the pretty annual Euphrasia antarctica; Raoulias were represented by several varieties, australis and subsericea being the most prevalent. Mosses and lichens grew on every rock, but few were in fruit. Of Acænas there were several species, adscendens and microphylla occurred very often in the Moa river-bed. Coriaria thymifolia, the little Tutu, was plentiful, looking very much like the garden Thyme. Veronica linifolia, with its delicate pink flowers, grew in the river-bed; also V. Bidwilli, which was in seed.

In the bush we saw nine distinct species of Ferns. The Filmy Ferns were represented by Hymenophyllum Malingii, one of the rarest of the family, which grew on dead Cedars with a north aspect; H. multifidum carpeted the ground with its bright green fronds; H. polyanthos grew on the trees, but was rather scarce; H. villosum was found on bare rocks in very exposed situations; H. scabrum, with its long drooping fronds, in damp places. Alsophila Colensoi (the grove Fern) was prevalent, growing very large in the bush. Polystichum vestitum was very common; a forked variety of it was found by Mr. Brown. The Carrot Fern, Asplenium Richardi and A. flabellifolium, were scarce. Cystopteris novæ-zealandiæ, which is one of the few deciduous Ferns, was very plentiful, its pale green fronds making it easily distinguished. Of Lomarias we saw lanceolata, alpina, and discolor. The little Polypodium australe grew on dead trees. Goniopteris pennigerum was very scarce. Of Lycopodiums Billardieri was growing in hollows of the Pitch Pine, and L. selago covered patches on the ground 2 or 3 yards across, looking like a bed of seedling Conifers.

Mr. Brown, who devoted himself to the collection of mosses, found several new species of Andreæ, Weissia, Tortula, Orthotrichum, Eremodon, and a Polytricum, with flat ovate capsules. Dicranum clathratum, a rather scarce variety, was abundant in this district. Of Hepaticas there were Gottschia ciliata, Madotheca stangeria, and Tricholea tomentosa.

Monday morning was fine, the sun shining on the distant peaks, so we said good-bye to our friends who had treated us so kindly at the camp. Mr. Lander gave us valuable information as to the habitats of the plants, and Mr. Slater and Mr. McClure, of the Survey staff, were equally ready to be of service to the first party of botanists who had visited these remote ranges. The cook lent us his horse to carry our swags to the lower camp, and we were put across the main branch of the Wilberforce by one of Mr. Lander's men. It was 4 P.M. when we got over the river, but we managed to reach Fisher's whare, and remained there all night. Made a start at daybreak, and had some difficulty in crossing the Harper, as the ford had been washed away by the heavy flood; we had to go a long way up stream before we found a safe crossing place. Having crossed at a fork we made good progress to Lake Selfe, where, during a short halt, we found a terrestrial Orchid which, with the Water Quillwort, we added to our collection. Reached the head of Lake Coleridge at dusk. One of the miners who had a horse came up with us near Lake Lyndon and carried our heavy swags to the hotel at the foot of Porter's Pass, where we arrived at 7 P.M. Next day we were fortunate in getting a lift in a dray going to Springfield, and were glad when we found ourselves in the train for Christchurch, where we arrived at 7.40, thoroughly knocked up, but satisfied with the result of our ten days' trip to the district of the quartz reef of Canterbury. *F. N. Adams, in the "New Zealand Country Journal," of September*, 1885.

## SHIRECLIFFE HALL, SHEFFIELD.

SHIRECLIFFE HALL, as the name denotes, is situate on an eminence some 325 feet above the sea-level and about 2 miles from Sheffield Town Hall. The manufacturing portion of the town is principally situated in the valley, which forms a semicircle with a radius of 1 mile from Shirecliffe, and extends from north-east to south-west. Under these circumstances it will readily be understood that vegetation cannot be particularly luxuriant out-of-doors at Shirecliffe, and this fact is at once apparent in the stunted and dying condition of the Oaks that have stood "the battles of the breeze for between 400 and 500 years; nevertheless it is somewhat surprising to find what a pleasing and fresh appearance may be maintained by a careful selection of forest trees and shrubs most capable of withstanding the deleterious atmosphere, and by careful planting and judicious nursing," as practised by Mr. Udale, the head gardener, and who, by the way, could contribute a useful and valuable article on trees and shrubs for smoky towns if he would only do so [as we hope he will. ED.] There are nice sweeps of lawn with natural undulations, not marred by being cut up into flower beds. The grass is well kept, and the flower borders are gay in spring, summer, and autumn. One of the features of Shirecliffe out-of-doors in early spring consist in the masses of Crocuses which Mr. Udale has been forming for some years underneath and about the large Sycamores, Chestnuts, and Copper Beeches which stand on the lawn, and whose spreading boughs sweep the ground. It is well known that grass thrives very indifferently under such trees, but where advantage has been taken of such drawbacks to provide glorious masses of purple, blue, and gold, and where the masses are carried a foot or two beyond the sweep of the boughs, the green turf acts as a beautiful foil, enhances the beauty of the Crocuses, and produces such an effect as cannot be obtained when the bare and black earth shows between.

Adjoining the mansion is a rectangular conservatory and an octagonal tropical house and fernery combined. In the former the permanent plants are fine Seaforthias, Camellias, Ficus elastica, Araucaria excelsa glauca, and a plant, 5 feet through, of Pteris umbrosa; on the floor are stood a quantity of specimen Maidenhair Ferns, which form a lovely groundwork and "setting" for the choice flowering plants as they come in season. At the time of my visit these consisted of Liliums, Campanulas, and Vallotas, and in each of two large marble vases was a large specimen Miltonia spectabilis, 3 feet in diameter, and bearing eighty to ninety fine flowers each.

In the tropical-house are fine specimens of Cocos plumosus, Seaforthia elegans, Chamærops Fortunei, Pandanus utilis, Cibotium princeps and regale, and Woodwardia radicans is cased off in a corner and kept cool, the walls of the case being planted with Selaginella denticulata. Passing to another part of the grounds we enter a porch, which is now turned into a hardy fernery, and where the Ferns are planted on tufa and cork-bark. This is a pleasant and beautiful retreat during the summer and autumn months.

We now enter the stove, which is a span-roofed structure; here the principal plants are large specimen plants of Asparagus plumosus, Eucharis amazonica, 5 feet through. In this house are also shown magnificent plants of Dendrobium nobile, Phalænopsis Schilleriana, and on the roof are Allamanda Schotti, Cissus discolor, &c. The next division in this range all have an east aspect, and consequently are lean-to's. The first we come to has a large Stephanotis on the roof, and in the front are grown Melons during the summer and autumn. The next division contains a miscellaneous collection of Orchids, such as Miltonias, Dendrobes, Lælias, &c., including a magnificent Cœlogyne cristata. Another division contains a quantity of large specimen Maidenhair Ferns, Gardenias, &c., and suspended from the roof are several baskets of Dendrobium Falconeri.

In the next division are Tomatos Cucumbers, and Heliotropes on the back wall; in this house I also noticed two large plants of the rare Platycerium Willinckii. Leaving this range we enter two other lean-to's with a south aspect. The first is devoted to miscellaneous plants, amongst which are seen several gigantic Aroids which produced about 200 beautiful spathes during the last spring, Azaleas, and a large Rhododendron fragrantissimum; on the back wall are trained zonal Pelargoniums, which allow of "cut and come again" all the year round; on the roof are yellow Banksian Roses and Wistaria sinensis, the racemes of which, mingled with the yellow Roses, are most lovely. We now come to the Camellia-house, a span-roofed structure standing north and south; on the roof is a fine Gloire de Dijon Rose, which annually produces immense quantities of fine flowers. The varieties of Camellias are alba plena, Lady Hume's Blush, Imbricata, Empress Eugénie, &c. The Azalea-house is the next and last glass structure. This is span-roof, like the Camellia house; it is 50 feet long by 16 wide. The specimen Azaleas are very numerous and valuable, and comprise some of the best varieties in cultivation. Chrysanthemums are well grown also at Shirecliffe, some 200 plants in all, the best varieties of each section being grown. Mr. Udale has taken first honours several times at the metropolitan shows, and has held the premier position in Sheffield and neighbourhood for the past five years.

The fruit and vegetable crops are plentiful and of good quality. Strawberries in pots, for forcing, are also well done. The general keeping of the whole place reflects great credit on Mr. Udale, the gardener. *Edward Gilman, Ingestre Gardens.*

# Reports of Societies.

## INTERNATIONAL POTATO EXHIBITION.

**Crystal Palace : October 7, and following days.**

The tenth annual International Potato Exhibition, which opened under distinguished corporate auspices on Wednesday last, if somewhat smaller in dimensions as compared with some previous shows, at least suffered only from the effects of a difficult and exceptionally dry season. But for that and its adverse effects on some southern growers the display would without doubt have exceeded the finest yet held under the auspices of the promoters. In many cases grand tubers showed somewhat rough skins, the natural product of drought, whilst some kinds, and especially from cooler localities, showed beautiful skins. Those who hold that rough skins and table quality are inseparable must have been amply satisfied with the tubers as presented on the tables. In one respect, the absence of the long-established class for Reading have so long maintained, was noticeable, and the absence also of that eminent firm is to be regretted. eighteen kinds, which the Messrs. Sutton & Sons of Probably the difficulty which kept them absent will be surmounted next year when it is just possible the Potato Show may be held at South Kensington, where we hope also the proposed Conference on Potatos may be made a reality. The awards in the respective classes are given below, and in many cases the labour of judging was of an unusually difficult kind, owing to the fine average quality which prevailed.

In the class for twenty-four kinds, the premier class of the show, there were fourteen collections, the majority showing very fine form and ample size ; indeed, some collections, in combining size with beauty of form and quality, have never been excelled. Mr. J. Hughes, gr. to Colonel Cartwright, Byfield, Notts, repeated his victory of last year by taking the 1st place ; he had grand samples of Chancellor, Snowdrop, Cosmopolitan, Edgcote Seedling, Woodstock Kidney, and Fidler's Prolific, white kidneys ; Sutton's Favourite, First and Best, M.P., Schoolmaster, and London Hero, white rounds ; The Dean, Queen of the Valley, Reading Russet, Vicar of Laleham, Crimson Beauty, Blanchard, Edgcote Purple, Rufus, and Prizetaker, coloured kinds. Mr. W. Ellingston, Mildenhall, Suffolk, was 2d, having beautiful Clarke's Main Crop, International, Magnum Bonum, Cosmopolitan, and Chancellor, white kidneys ; Enterprise, Prizetaker, Edgcote Purple, and Defiance, coloured kidneys ; The Doctor, Foster's Prolific, and Harvester, white rounds ; and Life Guard, Empress of India, Peach Glow, Grampian, and Radstock Beauty, coloured rounds —exceptionally fine and good. Mr. E. S. Wills, gr. to R. A. Cartwright, Esq., Edgcote, Banbury, came 3d, having splendid, Edgcote Seedling, Chancellor, Prime Minister, and Cosmopolitan, whites ; and The Dean, Reading Russet, Vicar of Laleham, and Edgcote Purple, coloured. Mr. E. Chopping, Sittingbourne, was 4th. Mr. W. Kerr, Darnavel, Dumfries, was 5th, with very clean samples ; Mr. Allen, gr. to Sir F. Burdett, Barnsbury Manor, 6th ; and Mr. James Lye, Clyffe Hall, Devizes, 7th, with fine, though rather rough-skinned tubers.

In the class for twelve kinds there were thirteen collections, beautiful samples being again found. Here, as the competitors in the preceding class were excluded, a new lot of competitors came in—Mr. C. Howard, Canterbury, coming 1st with very fine samples of Duke of Albany, Chancellor, Ashtop Fluke, Schoolmaster, Magnet, and Vermont Champion, whites ; and Reading Russet, The Dean, Vicar of Laleham, Adirondack, Beauty of Hebron, and Reading Russet, coloured kinds. Mr. Tom Tooley, Newlands, Banbury, who, like Mr. Howard, is an amateur grower, came 2d, having Snowdrop, Schoolmaster, Cosmopolitan, and Magnum Bonum, whites ; and Radstock Beauty, The Dean, Edgcote Purple, Reading Russet, and Vicar of Laleham, coloured kinds ; Mr. J. Gilmore, Hawkhurst, Kent, was 3d, with almost similar kinds ; Mr. G. Akhurst, Faversham, was 4th ; Mr. R. West, Northlands, Salisbury, 5th ; and Mr. W. Woolford, Great Missenden, 6th.

The class for nine dishes brought a great competition, no less than twenty lots being staged. This was an open class, and here Mr. Hughes was again 1st with very beautiful samples of Vicar of Laleham, Edgcote Purple, Prizetaker, and Reading Russet, coloured ; and Snowdrop, Favourite, First and Best, Schoolmaster, and Cosmopolitan, whites. Mr. Ellington was again 2d with some wonderful Chancellor, Good Main Crop, and Iroquois, white ; and Empress of India and Vicar of Laleham, coloured. Mr. Wills followed again 3d with capital samples. Mr. W. Kerr was 4th with smaller but clean, pretty samples, especially of Lord Rosebery, and Mr. Bresee, coloured kinds. Mr. Chopping was 5th, and Mr. West 6th.

The class of six dishes also brought twenty lots, many of remarkable quality, Mr. Hughes coming once more 1st with London Hero, First and Best, Chancellor, and Snowdrop, white ; and Edgecote Purple and Reading Russet, coloured. Mr. Rogers, Whittlesea, came 2d with a pretty even lot, including Pride of America and Wormleighton Seedling, and kinds not previously named ; Mr. Ellington was 3d with old-named sorts, all handsome. Mr. Chopping was 4th, and Mr. McKinlay, Penge, 5th—this gentleman having in his lot beautiful dishes of Rosebud, Cardinal, and Harvester.

There were eighteen lots in the class for three dishes of white round kinds. Here Mr. R. Dean, Ealing, was 1st with good Schoolmaster, London Hero, and Harvester. Mr. Hughes 2d, with The Doctor, Schoolmaster, and First and Best. Mr. Chopping 3d, with Early Household, Favourite, and Schoolmaster. Mr. Ellington was 4th, and Mr. J. Hughes, Whittlesea, 5th.

There were twenty-four lots in the class for three kinds of coloured rounds, Mr. Stanton, Towcester, coming 1st, with handsome Vicar of Laleham, Reading Russet, and Adirondack ; Mr. Howard was 2d, with Vicar of Laleham, The Dean, and Adirondack ; Mr. Wills was 3d, Mr. Kerr 4th, and Mr. Ellington 5th. Reading Russet was in four of these collections, Vicar of Laleham in four, and Adirondack in four.

There were seventeen lots in the class for white kidneys in three dishes, Mr. Wills coming 1st, with very handsome Snowdrop, Edgcote Seedling, and Cosmopolitan ; Mr. Hughes was 2d, with the two former and Chancellor ; Mr. Ellington was 3d, with Snowdrop also, and Main Crop and International ; Mr. Chopping was 4th, and Mr. John Hughes 5th.

Fifteen lots of three dishes competed in the coloured kidney class, Mr. Wills, having fine Edgcote Purple, Mr. Bresee, and Prizetaker, was 1st ; Mr. Chopping 2d, with the two latter and Vanguard. Mr. Ellington had Life Guard. Mr. Hughes would have been higher up but for an uneven dish of Beauty of Hebron. Mr. Kerr was 5th.

In the class for a single dish of any white kidney of English origin, a grand dish of Chancellor, shown by Mr. Howard, was 1st ; Mr. Hughes coming 2d, with Snowdrop, a fine sample ; Edgcote Seedling came 3d, and Snowdrop, from Mr. Kerr, was 4th. There were twenty-eight dishes in this class.

Eighteen dishes were staged in a similar class for coloured kidneys, the best being a fine lot of Cardinal, from Mr. Hughes, Mr. Wills coming next with Edgcote Purple ; Prizetaker, from Mr. Allen, was 3d ; Mr. Kerr coming 4th with Defiance.

There were twenty-five dishes of white rounds in a similar class, the best, a fine dish of Schoolmaster, from Mr. Howard ; Prime Minister, from Mr. West, was 2d ; Chancellor 3d, from Mr. R. Dean ; and Schoolmaster came 4th.

In the succeeding class, for coloured rounds, there were twenty-four dishes, Mr. Stanton coming 1st, with grand Vicar of Laleham ; Mr. James Lye 2d, with very fine Reading Russet ; Vicar of Laleham was again 3d, and Reading Russet 4th.

For the special class for six dishes, prizes offered by Messrs. James Carter & Co., to include three kinds named, only two lots competed, Mr. James Lye being 1st, and Mr. James Forder, King's Lynn, 2d, the latter having rough samples.

In a class for four dishes, the prizes offered by Mr. Fidler, of Reading, and the class to include his Prolific and Success, Mr. Hughes, the raiser of those kinds, was 1st, having also M.P. and First and Best ; Mr. Wills came 2d, with the same kinds, and Edgcote Purple and Reading Russet ; Mr. Ellington was 3d ; Mr. C. Ross, Welford Park, 4th ; and Mr. Woolford 5th.

The class for any white-skinned kind sent out during the past two years.—Mr. Chopping was 1st, with handsome Chancellor ; Mr. Hughes coming 2d, with fine Fidler's Prolific ; The Doctor, shown by Mr. Hughes, was 3d ; and Chancellor was again 4th.

The similar class for coloured kinds brought twenty dishes, the 1st prize going to Reading Ruby, a beautiful red kidney, raised by Mr. Fenn, and sent out by Messrs. Sutton & Sons, and shown by Mr. Wells, Fernhill, Windsor ; Fidler's Enterprise, from Mr. Kerr, was 2d ; Rufus, flat red round, from Mr. Dean, was 3d ; and Crimson Beauty, from Mr. Hughes, 4th.

A number of seedling kinds were shown in the seedling classes, but certificates are granted for these only after growth and trial when cooked at Chiswick. This year the following Certificates were alone granted :—To Mr. Robert Fenn, Sulhampsted, for Faith, a handsome early white kidney. To Mr. C. Fidler, for General Gordon, a very fine white main crop kidney. To Mr. Ironsides, for his New Fluke, a very superior white kind ; and to Mr. Hughes, for Colonel, a grand cropper, white kidney also.

Trade collections made a big show. Messrs. James Carter & Co., of High Holborn, having grand heaps of Imperator, a huge flat white kind ; Adirondack, Beauty of Hebron, White Elephant, Magnum Bonum, Vicar of Laleham, Reading Hero, and Supreta.

Messrs. Webb & Sons, of Wordsley, had a big collection of some eighty kinds : their Schoolmaster, Kinver Hill, W. E. Gladstone, a fine coloured kidney, with the chief varieties in commerce, in fine form.

Messrs. Harrison & Son, of Leicester, also had a fine show including huge samples of Vicar of Laleham, Great Eastern, Schoolmaster, Magnum Bonum, &c.

Mr. Laxton, Bedford, showed an interesting collection of seedlings ; and Mr. Fidler, of Reading, displayed a large collection of popular sorts.

Shortly after the judging was concluded the Lord Mayor of London accompanied by the sheriffs, all in rich robes, visited the show and afterwards declared it open to the public. The Lord Mayor afterwards presided at the usual judges' luncheon, at which a large number of persons sat down and did ample honour to an admirably served repast. At the close the Lord Mayor proposed the toast of the International Potato Show, to which Mr. Shirley Hibberd felicitously responded.

### The Hardy Fruits.

These have, like the Potatos, suffered somewhat in appearance generally, in consequence of the long period of drought felt in this country during the summer, and if there was an unexpected increase of size after rain had fallen, there is still a great diversity in the size of the fruits, as if all had not benefited in an equal degree ; and colour, so attractive always even in sorts of acknowledged inferiority, is not so marked as was the case last year. Prizes were fairly good, but scarcely any exhibitors hailed from distant counties, and the competition was mainly between the fruit growers of Bucks, Kent, Sussex, Berks, Herts, and Wilts. This may be owing to the well understood unwillingness of persons in other counties to enter the lists, not so much from fear of the veterans as from acknowledged inferiority on such points as climate and soil. Climate seems to tell more than soil ; as a rule the Apples from the heavy wealden clays of Sussex are finer than the same kinds are in the cold clays of Herts.

The fruit was considerably, as regarded numbers, in excess of last year, and many entries came so late as to cause a slight embarrassment in the tabling of so many at the last moment.

The fruit tables, as well as those set apart for vegetables, were placed in the eastern half of the Palace, being arranged in three lines, with ample room around.

#### Open Classes.

Taking these as marked in the schedule, we have a competition for the best exhibition of Apples, culinary and dessert, six fruits of each. In this Messrs. G. & J. Lane, of St. Mary's Cray, Kent, nurserymen, were 1st, putting up 126 sorts, excellent as a whole, and including most of the best known kinds in the south, and some that are less common, as Belle Griseldine, Wheeler's Russet, General Gordon, Martin Luther, Landsberger, Reinette, Late Red Nonsuch, Brown Kenting, White Quarranden, Pinea, Lord Kingston, White Astrachan, Peach Russet, Rosecroft Codlin, Reinette du Laak, and Reinette Seigende. 2d, Messrs. G. Bunyard & Co., The Old Nurseries, Maidstone, with 120 dishes, an almost equally good collection. Fine fruits were noticed of Potts' Seedling, Nanny, Winter Peach, Cox's Pomona, Emperor Alexander, New Hawthornden ; the general excellence and great fruiting qualities of the last-named are getting well known. Some of the Apples in this collection had been grown under glass, notably the Melon, a handsome kind, with suffused pinkish rind, striped crimson, and which, when so grown, is very ornamental. The best fruits of most of the kinds are produced either on cordons or espaliers. 3d, Messrs. Rivers & Son, Sawbridgeworth, with 174 varieties ; 4th, Messrs. Paul & Son, the Old Nurseries, Cheshunt.

#### Pears.

For the best exhibition of these fruits, 1st, Messrs. Rivers & Son, with 100 varieties, noteworthy being Princess and Magnate, both seedlings from Louise Bonne of Jersey, and of handsome form and colour ; other newer or uncommon kinds of goodly appearance being Lebrun, Zoe, General Todtleben, Madame Flon aînée, Fertility, also a seedling, and Duchess de Mouchy ; 2d, Mr. James Butler, Orchard Lane, Sittingbourne. Besides good samples of well known sorts were nice fruits of Dana's Hovey, King Edward, Doyenné Boussoch, and Noveau Poiteau. 3d, Messrs. G. Bunyard & Co., with a nice collection arranged on plates with Plane leaves under them. In this lot we remarked Belle de Noel, Doyenné Defays, Colmar d'Eté, Marie Guisse, Nouvelle Fulvie, Marie Benoist, Princess Royal or Mathew's Eliza, and an ornamental fruit in the Japanese wildling, Daimo. Mr. Waterman, gr. to Albert Brassey, Esq., Preston Hall, Maidstone, was 4th, showing fifty-six dishes of chiefly popular varieties.

#### Amateurs.

For the best twenty-four dishes of Apples, kitchen and dessert, six fruits of each.—1st, Mr. Sidney Ford, Leonardslee, Horsham. This collection contained Melon, Hollandbury, Fat Ox, Warner's King, Stone's, Lady Henniker, Blenheim Orange, Dr. Harvey, Alfriston, Cox's Orange, Rainbow, France, Royal Pearmain, and fine examples of other kinds, dessert and culinary ; 2d, Mr. A. Waterman, who had capital fruits of Mère de Ménage, Tower of Glamis, Broadeyed Pippin, Gloria Mundi, and Stone's ; 3d, Mr. H. Davis, gr. to H. J. Lake, Esq., Fairlawn House, Bollo Lane, Chiswick.

Twelve dishes of Pears, distinct, six fruits of each.—1st, Mr. A. Waterman, good samples being observed of Beurré Superfin, Pitmaston Duchess, Gansell's Bergamotte, and Calebasse Grosse ; 2d, Mr. S. Ford, King Edward, Beurré Diel, Durondeau, Beurré Bosc, and Pitmaston Duchess, being some of the best shown by him ; 3d, Mr. C. J. Goldsmith, gr. to C. A. Hoare, Esq., Kelsey Manor, Beckenham, an excellent collection.

Twelve dishes of Apples, exhibitors in the class for twenty-four dishes being prohibited from showing in this class.—1st, Mr. J. Gilmour, gr., Hawkhurst, Kent ; Dutch Mignon (rarely seen in collections), New Hawthornden, Cockle Pippin, Adams' Pearmain, Herefordshire ditto, and Dumelow's being the best. 2d, Mr. W. Dance, gr. to Colonel Lowe, Gosfield Hall, Halstead, Essex ; the Warner's King, Hollandbury, Alexander, Worcester Pearmain, Fearn's Pippin, and Blenheim, being of much merit. 3d, Mr. G. Collins, gr. to F. A. Rose, Esq., Wandsworth Common.

#### Vegetables (Open).

For the best exhibition of vegetables arranged for effect, and not more than four dishes of any sort.—1st, Mr. A. Waterman, who had sixty-four varieties ; noticeable were nice example of Pragnall's Beet, Sulham Park

Celery, Snowball Turnip, Paris Red French Bean, Early Nantes Carrot, Student Parsnip, May's Northaw Sprouts, and Ayton Castle Leek; the collection was very abundant in quantity, and was tastefully set off with a groundwork of Parsley and other herbs, and blanched Endive, &c. 2d, Mr. J. Neighbour, Bickley, Kent; 3d, Mr. F. A. Becket Cole, Hatch Farm, Penn, Bucks; 4th, Mr. C. J. Waite, gr., Glenhurst, Esher.

For the heaviest Gourd.—1st, Mr. J. Sharpe, Grove Road, Lee, for a Squash of 108 lb.; 2d, Mr. Osman, Sutton, for Connecticut Yellow Squash of 67 lb.; 3d, Mr. Sturgess, Chepstead.

Mr. Osman also took the 1st prize for a fine representative collection of edible Gourds; Mr. G. Sturgess, 2d; Mr. J. Sharpe, 3d.

For the best collection of ornamental Gourds—1st, Mr. Osman, with thirty, including the biggest and the smallest varieties; 2d, Mr. G. Sturgess; 3d, Mr. J. Sharpe.

AMATEURS.

Twelve dishes of vegetables, not more than two dishes of any variety.—1st, Mr. C. Waite, gr. to Colonel Talbot, Glenhurst, Esher; 2d, Mr. F. A. Beckett; 3d, Mr. A. Waterman. These collections, and others which competed, held nothing of exceptional merit, although all were fine for the season. Peas were conspicuous by their infrequency, and salads might have been better. The Autumn Giant Cauliflower, Red Cabbage, and Coleworts were exceptionally good samples. Mr. L. Harris, Braddenham, took the 1st prize for six dishes; 2d, Mr. H. Tombs, Tyler's Green, Amersham.

First-class Certificates were granted to Messrs. J. Veitch & Sons for Apple Prince Bismarck, a large oblate conical fruit, with pale yellow rind, marked on the sunny side with faint rose; the eye is closed and set in a deep basin, pleated at the sides; stalk thick and short, and set in a deep concavity; and for Crab American.

Mr. T. Laxton received a First-class Certificate for Apple September Beauty, medium-sized, crimson coloured fruit, eye closed and set in a shallow cavity.

MISCELLANEOUS: NON-COMPETING.

From Mr. J. Butler, Sittingbourne, there came some extraordinarily fine samples of the following kinds of Pears, shown in large quantities:—Beurré Diel, Beurré Clairgeau, and Pitmaston Duchess; also two boxes full of appetising looking fruit of Louise Bonne of Jersey. Photographs were likewise shown to give an idea of the abundance of fruits on trees in Mr. Butler's garden.

Messrs. Cheal, nurseries, Crawley, showed a collection of 120 dishes of Apples and twenty-eight of Pears, many excellent examples of both being witnessed.

Messrs. W. Paul & Son had forty dishes of Apples grown in their Sussex branch nursery, and 100 dishes from Herts, besides eighty kinds of Pears, making altogether a very large and interesting show.

From the Fulham nurseries of Messrs. J. Veitch & Sons came 160 dishes of Apples, of mostly fine size and high in colour, the produce of bushes and pyramid trees. Of Pears 100 dishes in as many kinds were also shown by the same firm, proving the possibility of fruit growing within 4 miles of Charing Cross.

Mr. Laxton showed his open-air Tomato, new Apple Schoolmaster, and the Hyslop Crab, a small deep crimson fruit.

Mr. Deverill, seedsman, Banbury, had a large collection of his several new varieties of Onions, as Rousham Park, Wroxton Hero, &c. Most of these were of a large size, and eminently suited for exhibition purposes, as may be gathered from the fact that six Onions had a weight of 8 lb. avoirdupois.

## SCOTTISH HORTICULTURAL ASSOCIATION.

THE seventh ordinary meeting of this session was held in the rooms, 5, St. Andrew Square, on Tuesday, the 6th inst. Mr. Robert Lindsay, Curator, Royal Botanic Garden, Vice-President, presided. Dr. J. M. Macfarlane, Royal Botanic Garden, Edinburgh, read a paper on "Nepenthes," in which he sketched the history and affinities of the order, entering more fully into the microscopic structure and physiological action. He described very minutely the honey glands, which he stated were first observed by Professor Dickson, and which are to be found on all parts of the plants, but more numerous on the under-surface of the lamina and round the rim of the pitchers. He gave some interesting details of various observations made by himself on the visits of insects, their capture and ultimate digestion by the plant. Synopsis of about forty species were given, twenty of which were introduced during the last few years. The paper was admirably illustrated by objects under the various microscopes, living plants, and a number of dried and preserved pitchers, some of which are not in cultivation. In the discussion which followed the reading of the paper, Mr. Lindsay stated that the first Nepenthes raised from seed in Britain was effected by Mr. Kelly in the nurseries of Messrs. Jas. Dickson & Son, Edinburgh, about forty years ago. Mr. Burbidge, Curator, Trinity College Botanic Garden, Dublin, gave an interesting and instructive history of his wandering in Borneo, detailing the soil, situation, and altitude in which he found the various species which he collected. In answering a practical question put by Mr. Dunn, Mr. Burbidge stated that he found in every instance the pitchers contained more or less of decomposed animal matter and from the small and slight hold of their roots, he had no doubt they derived great benefit from the insects which found their way into the pitchers. Mr. McKenzie, Warriston Nursery, was of opinion that this contention of plants being able to digest animal food, when applied to their leaves, required more proof than botanists have hitherto been able to bring forward. The Chairman closed the discussion by giving some practical hints on the culture of Nepenthes; he also put the question to Mr. Burbidge, if there were not periods of the year in Borneo of draught, and if so, he pointed out the Nepenthes would be benefited by the moisture contained in their pitchers. Mr. Burbidge in reply, stated that on the plains he found Nepenthes generally growing in ditches, or in situations where leaves and decayed vegetable matter was blown by the wind round the plants, and thereby retaining moisture about them. With regard to the species found on the mountains he said they were in a constant state of dripping moisture. On the motion of the Chairman, a hearty vote of thanks was awarded to Dr. McFarlane, and also to Mr. Burbidge for their communications.

EXHIBITS ON THE TABLE.

New seedling Apple, named Lady Sudeley, by Mr. George Bunyard, The Old Nurseries, Maidstone, Kent; it received a First-class Certificate from the Fruit Committee.

Aberia Caffra (the Kei fruit of the Cape), by Mr. Lindsay, Curator, Royal Botanic Gardens, who stated that this beautiful fruit was new to Europe; the specimens exhibited were sent to him by T. Hanbury, Esq., from the gardens of La Mortolo, Italy. It had a perfume somewhat between a Melon and a Pine-apple. It will, no doubt, prove an important addition to our half-hardy fruits. It is a native of Africa, and belongs to the Bixaceæ. The fruits are of the size and shape of Green Gage Plums, and of a soft yellow colour, each containing four or five seeds, and being of an agreeable sub-acid flavour.

Fruit of Monstera deliciosa, by Mr. Dunn, Dalkeith Palace Gardens. Mr. Dunn described the nature and qualities of the fruit, which was new to many of the members.

A collection of Apples, also Fuchsia penduliflora, F. Dominiana, F. alba coccinea, by Messrs. Dickson & Co., nurserymen, Edinburgh.

Crinum sp., from Demerara, by Mr. J. W. Machattie, Newbattle Abbey Gardens. The plant was in flower and well grown; it was supposed to be new, and was recommended for Cultural Certificate. Fruit of Beurré Hardy Pear, by Messrs. James Dickson & Son, nurserymen, Edinburgh.

The meeting closed with a hearty vote of thanks to Mr. Lindsay for his conduct in the chair.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, OCTOBER 7, 1885.

| Month and Day | Barometer: Mean Reading at 9 A.M. corrected for Index Error and Temperature | Barometer: Departure from Average of 18 years | Temperature of the Air: Highest | Lowest | Range | Mean for Day | Departure of Mean from Average of 18 years | Dew Point | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity (Sat. = 100) | Wind: Average Direction | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| Oct. 1 | 29.59 | —0.20 | 57.5 | 44.0 | 13.5 | 50.0 | —4.4 | 43.0 | 78 | S.W. | 0.07 |
| 2 | 29.77 | +0.48 | 59.0 | 43.5 | 15.5 | 51.7 | —2.5 | 46.0 | 82 | S.W., S.S.W. | 0.00 |
| 3 | 29.73 | +0.01 | 57.8 | 48.5 | 9.3 | 51.7 | —2.2 | 40.8 | 67 | N.W., S.W. | 0.04 |
| 4 | 29.69 | +0.01 | 57.0 | 40.3 | 16.7 | 46.8 | —4.7 | 43.0 | 89 | S.W., W.S.W. | 0.00 |
| 5 | 29.40 | —0.20 | 52.0 | 47.0 | 5.0 | 48.5 | —4.7 | 43.5 | 83 | S.W. | 0.08 |
| 6 | 29.52 | —0.17 | 55.0 | 38.5 | 16.5 | 46.8 | —6.1 | 44.7 | 93 | N.W. | 0.20 |
| 7 | 29.75 | +0.06 | 53.5 | 41.0 | 12.5 | 47.0 | —5.6 | 39.5 | 76 | N.W. | 0.18 |
| Mean | 29.64 | —0.05 | 56.1 | 43.3 | 12.8 | 49.2 | —4.1 | 43.1 | 80 | S.W. | 0.57 |

Oct. 1.—Rain falling in early morning; dull day, but fine.
— 2.—Fine, dull
— 3.—Rain in early morning; fine day, bright mostly.
— 4.—Dull, but fine
— 5.—Rain in morning; dull day.
— 6.—Fine bright morning; rain falling from about 1 P.M.
— 7.—Rain in early morning; fine bright day; fine night.

LONDON: *Atmospheric Pressure.*—During the week ending October 3, the reading of the barometer at the level of the sea increased from 29.87 inches at the beginning of the week to 30.04 inches by 9 A.M. on the 28th, decreased to 29.73 inches by 9 A.M. on the 29th, increased to 29.81 inches by 5 P.M. on the same day, decreased to 29.49 inches by 5 P.M. on the 30th, increased to 30.03 inches by 9 A.M., decreased to 29.85 inches by 5 P.M. on October 2, and was 29.93 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.88 inches, being 0.21 inch lower than last week, and 0.06 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 60°.8, on September 30, on September 27 the highest was 47°.4. The mean of the seven high day temperatures was 56°.4.

The lowest temperature was 32°, on September 27; on September 30 and October 3 the lowest temperature was 48°.5. The mean of the seven low night temperatures was 42°.6.

The greatest range of temperature in one day was 15°.5, on September 28 and October 2; the smallest, on the 3d, was 9°.3. The mean of the seven daily ranges was 13°.8.

The mean temperatures were—on September 27th, 40°.5; on the 28th, 43°.6; on the 29th, 52°.3; on September 30th, 54°.2; on October 1st, 50°; on the 2d, 51°.7; and on the 3d, 51°.7; and these were all below their averages by 14°.1, 10° 9, 2°.1, 0°.1, 4°.4, 2°.5, and 2°.2, respectively.

The mean temperature of the week was 49°.1, being 2°.8 lower than last week, and 5°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 106°, on October 1. The mean of the seven readings was 87°.4.

The lowest reading of a minimum thermometer placed on grass was 23°, on September 27. The mean of the seven readings was 33°.

*Rain.*—Rain fell on four days, to the amount of 0.47 inch.

ENGLAND: *Temperature.*—During the week ending October 5 the highest temperatures were 64°.3 at Brighton, 63°.2 at Cambridge, 62°.2 at Plymouth; the highest at Bolton was 56°.6, at Wolverhampton 57°.8, at Sunderland, Preston, and Newcastle 58°. The general mean was 60°.2.

The lowest temperatures were 28°.6 at Wolverhampton; 30° at Truro, 31°.6 at Nottingham; the lowest at Liverpool was 40°.8, at Sunderland 39°, at Leeds and Preston, 37°. The general mean was 34°.5.

The greatest ranges were 33° at Cambridge, 32° at Truro, 30°.3 at Brighton; the least ranges were 18°.9 at Liverpool, 19° at Sunderland, 21° at Preston. The general mean was 25°.7.

The mean of the seven high day temperatures was at Truro, 59°.9, at Cambridge 59°.7, at Brighton and Bristol 57°.7; and was lowest at Bolton and Bradford, 53°.9, at Wolverhampton 54° The general mean was 56°.2.

The mean of the seven low night temperatures was highest at Brighton, 45°.3, at Blackheath 43°.3, at Plymouth 43°.2; and was lowest at Wolverhampton, 37°.1, at Bolton 38°.6, and at Bristol 40°.6. The general mean was 42°.

The mean daily range was greatest at Cambridge, 18°.9, at Bristol 17°.1, at Truro 17°; and was least at Preston, 10°.5, at Liverpool 11°, at Sunderland 11°.7. The general mean was 14°.2.

The mean temperature was highest at Brighton, 50°.4, at Truro 50°.2, at Plymouth 49°.2; and was lowest at Wolverhampton, 44°.3, at Bolton 45°, at Bradford 46°.7. The general mean was 48°.

*Rain.*—The largest falls were 1.48 inch at Bolton, 1.21 inch at Preston, 1.06 inch at Bristol; the smallest falls were 0.40 inch at Sunderland, 0.41 inch at Cambridge, 0.46 inch at Wolverhampton. The general mean fall was 0.72 inch.

SCOTLAND: *Temperature.*—During the week ending October 3, the highest temperature was 58°.5, at Perth; at Greenock the highest temperature was 55°.2. The general mean was 56°.7.

The lowest temperature in the week was 26°, at Glagow; at Aberdeen the lowest temperature was 36°.2. The general mean was 31°.7.

The mean temperature was highest at Paisley, 48°.6; and lowest at Perth, 47°.2. The general mean was 48°.

*Rain.*—The largest fall was 3.05 inches at Greenock, the smallest fall was 0.74 inch, at Aberdeen. The general mean fall was 1.32 inch.

JAMES GLAISHER, F.R.S.

## Variorum.

LORD SHAFTESBURY.—The Dean of Westminster sends to the *Times* a word in season, in the shape of an epigram by his predecessor on "the great Christian philanthropist" just lost to us. The following note from Lord Shaftesbury himself is appended to it:—

"I had written to Canon Conway to say that he had better find some new and younger chairman for the annual flower show in Dean's Yard, adding, that I was in the condition of a tree which, as Lucan says, 'casts a

shadow no longer by its leaves, but only by its stem.' He sent the note to the Dean, who returned it with the verses below. I knew that the Dean was very kindly disposed towards me, but I did not know how kindly."

These are the verses :—

"Trunco, non frondibus, efficit umbram."

Well said old Lucan : often have I seen
A stripling tree all foliage and all green ;
But not a hope of grateful soothing shade,
Its empty strength in fluttering leaves displayed.
Give me the solid trunk, the aged stem
That rears its scant but glorious diadem ;
That through long years of battle or of storm
Has striven whole forests round it to reform ;
That plants its roots too deep for man to shake,
That lifts its head too high for grief to break,
That still, through lightning flash and thunderstroke,
Retains its vital sap and heart of Oak.
Such gallant tree for me shall ever stand
A great rock's shadow in a weary land.

*A. P. S., May*, 1873.

*Pall Mall Gazette, October 7.*

## Answers to Correspondents.

Articles for Competition in Salads : *Inquiring Chef.* If you were to put up for competition all of the items named in your list you would certainly run the risk of getting disqualified, our judges, as a rule, recognising only such vegetables as enter into the generality of English salads, and these are few enough. Your list does not contain such herbs as Tarragon, Chervil, Chicory, Celeriac, Rampion, blanched Dandelion ; and those you name, amongst others that may be eaten raw—viz., Mushrooms, Beans, Potatos, Globe Artichokes, red and white Cabbage, Cauliflower, Gourd or Marrow, Salsafy, Scorzonera, Parsnips, Turnips, and green Peas — stand in need of pickling or cooking before making use of them as salad ingredients.

Books on Fruit-tree Pruning and Vine Culture : *E. W. Serpell.* For the first-named Du Breuil on Fruits and Pruning, the English translation of which is sold by Lockwood & Co., 7, Stationers' Hall Court, Ludgate Hill, E.C. ; and for the Vine, Mr. F. A. Barron's work, *The Vine*, published at the *Journal of Horticulture* Office, 171, Fleet Street, E.C.

Colour of Wash for Garden Walls : *T. T.* Some warm colour, as dark red—anything rather than grey or stone colour. Do not let the surface be quite smooth, as rough-surfaced walls retain the sun's heat longest.

Erratum.—At p. 443. col. *c*, line 2, for "Crosse's Dictator," read "Corse's Dictator."

Fertilisation : *A. D. W.* Other things being equal the actual number of seeds produced by close or by cross-fertilised plants respectively would, no doubt, be the same, but in practice the circumstances never would be precisely identical. You should read Darwin "On the Effects of Cross and Self Fertilisation in the Vegetable Kingdom."

Fungi ; *A. B. W.* 1, Polyporus versicolor ; 2, the same ; 3, Xylaria hypoxylon. The other two species are not in a fit condition for naming. Correspondents who send fungi for naming should always mention the habitat. *W. G. S.*

Grapes Shanking : *E. S. T.* There is nothing definite known to gardeners, or scientific men, as to the cause of shanking, as the berries will "shank" sometimes on Vines that are apparently in the highest state of vigour ; but it is more often seen when the Vines are carrying too heavy crops, or when the border in which they grow has got exhausted of some essential constituents, or has arrived at the mechanical condition as to its particles that prevents the rapid egress of moisture, and has become water-logged, in which state of the soil the smaller roots and rootlets perish. This state of the soil is arrived at in time in the best made artificial borders ; and a large admixture of manures at the time of making will bring about this result sooner. Well-drained, high-standing borders of not more than 2½ feet in depth, and composed mainly of turfy soil, not much broken up, and containing a liberal addition of bones (crushed), charcoal, and finely broken lime rubbish, will usually grow the Vine perfectly. In such borders the watering of the soil is quite under control ; and if the borders are made with some means of throwing off heavy autumnal rains on those portions in which are Vines carrying Grapes, there ought to be the minimum of loss from the malady. Rain falling for lengthened periods on Vine borders, where the crop is gathered, and which it is not intended to force early, does good rather than harm—provided, of course, the soil is not adhesive, or the drainage defective.

Hop-dog : *G. Harris.* This is the caterpillar of the moth known as Dasycheira pudibunda, figured in Miss Ormerod's *Manual of Injurious Insects.* What the Hop-cat and Land-measurer may be we do not know.

Laurel Berries : *J. P.* If you mean the berries of the Cherry Laurel, they are no more poisonous than Cherries are. This so-called Laurel is indeed only an evergreen Cherry. The berries of the true or Bay Laurel are also harmless.

Names of Fruits : *Captain Tibbetts.* 1, Glou Morçeau ; 2, Emille d'Heyst.—*D. Walker.* 1, not recognised ; 2, Beurré Superfin ; 3, Zephirin Grégoire ; 4, Beurré d'Amanlis ; 5, Fondante d'Autômne ; 6, Glou Morçeau.—*Oakfield.* 1, 2, not recognised ; 3, Fondante d'Autômne ; 4, Beurré d'Amanlis ; 5, Knight's Monarch ; 6, Doyenné du Comice.—*Old Subscriber.* 1, Maréchal de la Cour ; 2, Duchesse d'Angoulême ; 3, Bergamotte d'Esperen ; 4, Doyénné d'Alençon ; 5, Beurré de Capiaumont ; 6, Josephine de Malines.—*A. M.* 1, Passe Colmar ; 2, Beurré Superfin ; 3, Duchesse d'Angoulême ; 4, Emile d'Heyst ; 5, Maréchal de la Cour ; 6, Grosse Calebasse.—*W. A. B. Apples :* Golden Reinette ; *Pears* : 2, Vicar of Winkfield ; 3, Althorp Crassane ; 4, Beurré Clairgeau ; 5, Maréchal de la Cour ; 9, Easter Beurré ; 10, Winter Nelis ; 11, Marie Louise ; 12, Duchesse d'Angoulême ; 13, Gansell's Bergamot ; 14, 17, Marie Louise ; 15, Beurré Diel ; 18, 20, Beurré Rance ; 19, Beurré Diel ; 21, Catillac ; 22, Beurré Bosc. This is far beyond our stipulated number of six sorts at a time.—*Gustav R. Le Doux. Apples :* 1, Winter Strawberry ; 2, Margil ; 6, Minshull Crab ; 7, Bedfordshire Foundling ; 8, Manks' Codlin ; 9, Worcester Pearmain ; 10, Wareham Russet ; 11, Dumelow's Seedling ; 12, Braddick's Nonpareil ; 13, Gloria Mundi ; 14, Scarlet Nonpareil. *Pears* : 6, Calebasse Bosc ; 7, 12, 14, Louise Bonne of Jersey ; 8, Beurré Bosc ; 9, Beurré d'Amanlis ; 13, Beurré Clairgeau ; 15, Beurré Defais. Far in excess of the stipulated number (six).—*F. & A. D. & Sons.* Your Apple is the Trumpington, or Delaware.—*Jones, Craig-y-Nos.* The numbers pinned on to the fruits were all torn off when they were received, so that we cannot identify any of the fruits sent. Why could you not wrap each sort separately in paper?—*J. Rose.* Apple sent as King of the Pippins is more like Emperor Alexander. The seedling Apple is inferior to hundreds of others in cultivation.—*J. M. L., Ayrshire.* 1, King of the Pippins ; 4, Dumelow's Seedling ; 9, Manks' Codlin ; 10, Ringer ; 14, Keswick Codlin ; 16, Emperor Alexander. We are unable to give the names of the others, as, the numbers being simply pinned on to the fruit, and carelessly packed without a morsel of paper, became detached, so that we could not tell to which they belonged. You should pack your fruit with more care, and send better examples.—*A., Holloway.* 7, 8, Beurré Diel ; 11, Glou Morçeau ; 15, Thompson's. Others not recognised.—*D. J.* 3, Rymer ; 4, Adams' Pearmain ; 7, Drap d'Or. Others not recognised. We find the fruits grown in your district very difficult of recognition.—*J. D.* Not known.

Names of Plants : *J. P.* Your branch looks like Picea orientalis, but we cannot be certain, as it may be only a form of P. excelsa, the common Spruce.—*J. R. B.* 1, Acer Pseudo-Platanus ; 2, Acer platanoides ; 3, Chrysanthes virginica.—*Barr & Son.* Specimen insufficient.—*Stevens.* Oncidium heteranthum.—*W. Earley.* Phytolacca decandra (Pokeweed).—*H. H.* Chrysanthemum (Pyrethrum) uliginosum and Physostegia virginiana.—*W. H.* 1, Eria Dilwynii ; 2, Vanda Roxburghi.—*No Name* (flower in a match-box). Odontoglossum tripudians.—*D. P.* In the absence of foliage we suppose it to be Gesneriflora.—*H. G. Jones.* Varieties of the Sweet Chestnut.—*H. J. R.* You can continue to send. We cannot, however, determine the Angræcum from the drawing of the leaf.

Orchids : *Peter Massey.* The Lycaste Skinneri is not extraordinary for either form or colouring, but it is flowering unusually early. The Dendrobium is longicornu, a form of infundibulum.

Orchid : *R. A.* Your plant is what is supposed to be D. Brymerianum, but it is not possible to be sure about it. Cleistogamy, of which your specimen is an example, means, as you suppose, close-fertilisation in the bud, and consequently independently of insect agency.

Pansies : *J. W.* It is quite impossible for us to name your Pansies shrivelled as they are beyond recognition. You should take fresh specimens to some dealer or to a Pansy show.

Peppermint Growing : *H. K.* We do not know of any treatise on Peppermint cultivation for distilling purposes. The roots may be planted early in the spring-time, before growth has begun, in well-manured ploughed or dug land. It is as well to plant it in beds of 3 yards in width, for convenience in cutting the crop. The plants are usually inserted in lines 15 inches apart, the plants standing at 9 inches apart in the row. In the second year all will have run together. The crop is cut just before the bloom is fully open, and can be mown or cut with a bagging-hook. For several years winter dressings of rotten manure or nitrates may be given, but after the lapse of four or five years replanting on new ground will be found necessary. Damp localities, where no stagnant water is found, are best for its cultivation.

Potato : *W. S.* Many thanks ; such cases are common. There is, however, no real increase of substance, as the new growths are simply developed from the stores in the old tuber.

Seedling Begonias : *E. F. F. & Sons.* The blooms were brilliant in colour, and of a large size, but in nurseries where the tuberous Begonia is made a special culture there are numbers equally good, and some superior as regards size of bloom.

Sulphate of Ammonia : *Quinton Read.* Alone it is not good, but mixed with kainite, other mineral manures, or bone-dust, it is useful for fruit trees. Mr. J. Willis, of Harpenden, would give you the proportions to use.

## CATALOGUES RECEIVED.

Benjamin R. Cant, Colchester—Roses.

N. Gaucher, Stuttgard—Illustrated and Descriptive Catalogue of Fruits.

André Leroy, Angers (Maine et Loire) — Fruit Trees, Deciduous and Coniferous Trees, Rhododendrons, Shrubs, Vines, &c. ; also Extract from General Catalogue.

William Rumsey, Waltham Cross, N.—Roses and Fruit Trees, &c.

W. R. Proctor, Ashgate Road, Chesterfield—Roses.

Dammann & Co., San Giovanni a Teduccio, Naples —General Seed Catalogue.

Richard Smith & Co., Worcester — Catalogue of Forest Trees, &c., Roses, Alpine Plants, Bulbs, and Dutch Flower Roots.

Communications Received : T. Christy & Co.—Prof. Max Cornu (a letter will follow).—J. D. H.—G. Richards Julian —R. J. Lynch. — J. R.—R. D. Blackmore. — J. Van de Swachman (you would have to send to Japan for the book).—Ed. Parry, Ghent.—D. T. F.—J. Day.—A. B.—Berwick.—Troughton.—W. C. & Sons.—J. B.—E. W. S.—C. E. P.—Sutton & Sons.

MARRIED.—In the Free Church Manse of Mayfield Newington, Edinburgh, on the 26th ult., by the Rev. Lewis Davidson, Alexander Tait, son of the late Alexander McOuhire Tait, foreman at Messrs. Dicksons' Nurseries, to Mary Hornsby, daughter of James Hornsby, Builder, Gatehouse, parish of Girthon Stewartry of Kirkcudbright. (Dumfries and Galloway, please copy.)

# Markets.

*COVENT GARDEN, October 8.*

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

Heavy supplies of Grapes continue to reach us, causing the prices to keep low. Cobs inclined to fall in price. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | 3 0 | Melons, each | 0 6 | 1 6 |
| Damsons, ½-sieve | 3 0 | 3 6 | Peaches, per doz. | 3 0 | 8 0 |
| Figs, per dozen | 0 6 | 0 9 | Pine-apples, Eng. lb. | 2 0 | 4 0 |
| Grapes, per lb. | 0 6 | 3 0 | — St. Michael, each | 2 6 | 5 0 |
| Kent Cobs, 100 lb. | 24 | 28 0 | Pears, per dozen | 0 9 | 1 3 |
| Kent Filberts, 100 lb. | 25 | 28 0 | — per ½-sieve | 1 6 | 3 0 |
| Lemons, per case | 15 | 30 0 | Plums, ½ sieve | 1 6 | 3 0 |

Vegetables.—Average Retail Prices.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 5 0 | .. | Herbs, per bunch | 0 2 | 0 4 |
| Aubergines, each | 0 4 | .. | Horse Radish, bun. | 3 0 | 4 0 |
| Beans, Eng., per lb. | 0 4 | .. | Lettuces, Cab., doz. | 2 0 | .. |
| — French, per lb. | 0 6 | .. | Mint, green, bunch | 0 4 | .. |
| Beet, per dozen | 1 0 | .. | Mushrooms, basket | 1 0 | 1 6 |
| Brussel Sprouts, lb. | 0 4 | .. | Onions, per bushel | 3 6 | .. |
| Cabbages, per dozen | 1 6 | 2 0 | — Spring, per bun. | 0 6 | .. |
| Carrots, per bunch | 0 0 | .. | Parsley, per bunch | 0 4 | .. |
| Cauliflowers, English, per dozen | 2 0 | 4 0 | Radishes, per dozen | 1 0 | 2 0 |
| Celery, per bundle | 1 6 | 2 6 | Small salading, per punnet | 0 4 | .. |
| Cucumbers, each | 0 4 | 0 8 | Spinach, per bushel | 4 0 | .. |
| Endive, per dozen | 2 0 | .. | Tomatos, per lb. | 0 6 | 0 9 |
| Garlic, per lb. | 0 6 | .. | Turnips, bunch | 0 6 | .. |
| | | | Veget. Marrs., each | 3 | .. |

Potatos.—Magnum Bonums, bad trade, 50s. to 80s. Regents, 60s. to 80s. per ton.

Plants in Pots.—Average Wholesale Prices.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 18 0 | Ficus elastica, each | 1 6 | 7 0 |
| Arbor-vitæ (golden), per dozen | 6 0 | 18 0 | Ferns, in var., dozen | 4 0 | 18 0 |
| — (common), dozen | 6 0 | 12 0 | Foliage Plants, various, each | 2 0 | 10 0 |
| Arum Lilies, dozen | 9 0 | 18 0 | Fuchsias, per dozen | 0 9 | 0 |
| Begonias, per dozen | 4 0 | 12 0 | Lilium auratum, per dozen | 15 0 | 24 0 |
| Bouvardia, dozen | 12 0 | 18 0 | — longifolium, doz. | 9 0 | 18 0 |
| Chrysanth., per doz. | 9 0 | 18 0 | Marguerite Daisy, per dozen | 8 0 | 12 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Myrtles, per dozen | 6 0 | 12 0 |
| Dracæna terminalis, per dozen | 30 0 | 60 0 | Palms in variety, each | 2 6 | 21 0 |
| — viridis, per doz. | 12 0 | 24 0 | Pelargoniums, scarlet, per dozen | 2 6 | 9 0 |
| Erica, various, doz. | 9 0 | 12 0 | | | |
| Euonymus, in var., per dozen | 6 0 | 18 0 | | | |
| Evergreens, in var., per dozen | 6 0 | 24 0 | | | |

Cut Flowers.—Average Wholesale Prices.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Lilium longiflorum, 12 blooms | 6 0 | 8 0 |
| Arum Lilies, 12 blms. | 6 0 | 8 0 | Marguerites, 12 bun. | 3 0 | 6 0 |
| Asters, 12 bunches | 4 0 | 8 0 | Mignonette, 12 bun. | 1 6 | 3 0 |
| Azalea, 12 sprays | 2 0 | .. | Parme, Fr., bunch | 4 0 | 5 0 |
| Bouvardias, per bun. | 0 6 | 1 0 | Pelargoniums, per 12 trusses | 0 6 | 1 0 |
| 12 blooms | 1 0 | 3 0 | — scarlet, 12 trusses | 0 4 | 0 9 |
| Camellias, 12 blms. | 4 0 | 8 0 | Rhodanthe, 12 bun. | 0 0 | 9 0 |
| Chrysanth., 12 blms. | 1 0 | 6 0 | Roses (indoor), doz. | 1 0 | 3 0 |
| — 12 bunches | 5 0 | 12 0 | Stephanotis, 12 sprs. | 5 0 | 0 0 |
| Czar, French, bunch | 1 0 | 1 3 | Tropæolum, 12 bun. | 1 0 | 1 6 |
| Eucharis, per dozen | 4 0 | 6 0 | Tuberoses, 12 blms. | 0 9 | 1 6 |
| Gardenias, 12 blooms | 2 0 | 4 0 | Violets, 12 bunches | 0 10 | 1 0 |
| Lapageria, white, 12 blooms | 2 0 | 3 0 | | | |
| — red, 12 blooms | 1 0 | 2 0 | | | |

## SEEDS.

LONDON: *Oct. 7.*—But very little business was transacted on the seed market to-day, the attendance being poor. There is no change to be noted with regard to values. Red Clover seed has become quiet. Inquiries for Trifolium have now ceased. Less money is accepted for winter Tares. Sowing Rye sells at former figures. Canary and Hemp seed are both rather dearer. For blue Peas the demand is small. Haricot Beans are good and cheap. The tendency in feeding Linseed is still in favour of holders. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday English Wheats were very irregular, from want of condition. Foreign was held for rather stiffer rates, which checked business. Flour was fully steady in value, with some enquiry. Fine malting Barley was scarce, but secondary and inferior kinds were plentiful, and 1*s.* to 2*s.* lower; grinding descriptions were steady. Beans and Peas continued without quotable change. American Oats were 3*d.* to 6*d.* lower, and the general demand dull.—On Wednesday business in Wheat, whilst limited, was at quite Monday's value. Flour was firm, with a moderate enquiry. Malting Barley of fine quality continued firm, but secondary grades drooped in value; grinding kinds were steady. Beans and Peas have sold without alteration in value. Oats met a quiet demand, but firm rates had to be paid. For Maize prices were against buyers.—Average prices of corn for the week ending Oct. 3:—Wheat, 30*s.* 6*d.*; Barley, 31*s.* 1*d.*; Oats, 19*s.* 1*d.* For the corresponding period last year:—Wheat, 32*s.* 4*d.*; Barley, 31*s.* 9*d.*; Oats, 19*s.*

## CATTLE.

At Copenhagen Fields on Monday in the beast market our top quotations were reduced 2*d.* to 4*d.* per 8 lb., but in the general trade the reduction was 4*d.* Sheep were equally difficult to sell, and depressed 2*d.* to 4*d.* per 8 lb., many remaining unsold at a late hour. The calf trade was very dull, and quotations here also have to be reduced. Reports of the pig trade were not worse. Quotations:—Beasts, 3*s.* 6*d.* to 4*s.* 4*d.*, and 4*s.* 6*d.* to 5*s.*; calves, English, 4*s.* to 4*s.* 6*d.*; Irish, 2*s.* to 2*s.* 4*d.*; sheep, 3*s.* 8*d.* to 4*s.* 2*d.*, and 4*s.* 8*d.* to 5*s.* 2*d.*; pigs, 4*s.* to 4*s.* 8*d.*—Thursday's trade was dull in tone, with a weak tendency. For beasts Monday's prices were only maintained with difficulty. For sheep the demand was inactive at weak currencies. Calves were quiet, and pigs were rather steadier.

## HAY.

Tuesday's Whitechapel Market report states that there was a rather large supply on sale. Trade was quiet at the following prices:—Prime Clover, 95*s.* to 110*s.*; inferior, 60*s.* to 90*s.*; prime meadow hay, 60*s.* to 92*s.*; inferior, 40*s.* to 60*s.*; and straw, 29*s.* to 38*s.* per load.—On Thursday there was a fair supply on sale. The trade was very dull, especially for Clover, and prices were with difficulty maintained.

## FRUIT, ROOTS, AND VEGETABLES.

COLUMBIA (East London).—Moderate supplies of fruit and vegetables; trade fair; prices moderate. Potato trade better; prices higher. Quotatations:—Damsons, 6*s.* to 9*s.* per sieve; Apples, 2*s.* to 3*s.* 6*d.* per sieve; Pears, 3*s.* to 3*s.* 6*d.* per sieve; Tomatos, 7*s.* to 7*s.* 6*d.* per box; Cabbages, 4*s.* to 6*s.* per tally; Scarlet Beans, 3*s.* to 5*s.* per sieve; Cauliflowers, 2*s.* to 3*s.* 6*d.* per dozen; bunch greens, 2*s.* to 4*s.* per dozen; ditto Turnips, 3*s.* to 4*s.* per dozen; ditto Carrots, 1*s.* 6*d.* to 2*s.* per dozen; ditto Parsley, 1*s.* to 1*s.* 6*d.* per dozen; Beetroots, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Celery, 10*d.* to 12*s.* 6*d.* per dozen bundles; English Onions, 3*s.* to 3*s.* 6*d.* per cwt.; pickling ditto, 3*s.* 6*d.* to 4*s.* per cwt.; foreign Onions, 7*s.* 6*d.* to 8*s.* per box. Potatos: Magnums, 47*s.* 6*d.* to 80*s.*; Early Rose, 50*s.* to 60*s.*; Regents, 55*s.* to 70*s.*; Reading Heros, 60*s.* to 70*s.*; Victorias, 50*s.* to 60*s.*; Beauty of Hebron, 60*s.* to 80*s.*; Champions, 50*s.* to 65*s.* per ton; Carrots, 30*s.* to 50*s.* per ton.

STRATFORD.—There was a good supply of produce, and a fair trade was done at the following prices:—Cabbages, 3*s.* to 5*s.* per tally; red Cabbage, 1*s.* per dozen; greens, bunch, 3*s.* to 4*s.* per dozen; ditto, cut, 3*s.* to 4*s.* per tally; Scarlet Runners, 5*s.* per sieve. Potatos:—Magnums, 45*s.* to 65*s.*; ditto, Champions, 60*s.*; ditto, Roses, 40*s.* to 50*s.*; ditto, Regents, 50*s.* to 60*s.* per ton. Hay, Clover, 75*s.* to 110*s.*; meadow, 60*s.* to 90*s.*; and straw, 28*s.* to 36*s.* per load. Oats, 16*s.* to 24*s.* per quarter; chaff, 80*s.* to 100*s.* per ton; Turnips, 50*s.* to 80*s.* per ton; Apples, 2*s.* to 5*s.* per bushel; Onions, 70*s.* to 100*s.* per ton; Spanish Onions, 7*s.* 6*d.* per case; Carrots for cattle feeding, 30*s.* to 32*s.* per ton; Grapes, 6*s.* to 7*s.* per case; Carrots for household, 40*s.* to 50*s.* per ton; Tomatos, 6*s.* to 8*s.* per case; Walnuts, 2*s.* per dozen pounds.

## COALS.

The following are the prices current at market during the week:—Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.*; Hetton Lyons, 16*s.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; South Durham Tees, 16*s.* 3*d.*; Tees, 18*s.*

**Government Stock.**—Consols closed on Monday at 99⅛ to 100 for both delivery and the account. The figures of Tuesday and Wednesday were 100 to 100⅛ for both transactions. Thursday's final quotations were the same as those for the two preceding days.


# CARSON'S PAINT.

Patronised by
*HER MAJESTY*,
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
15,000 OF THE NOBILITY, GENTRY, AND CLERGY.
Is extensively used for all kinds of
**OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames.**
CAN BE LAID ON BY UNSKILLED LABOUR.
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LA BELLE SAUVAGE YARD, LUDGATE HILL, LONDON, E.C.;
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*Discount for Cash.*

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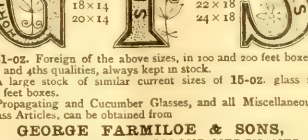
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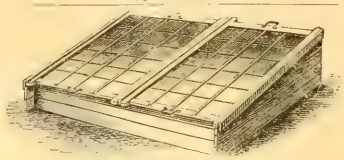

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Cucumber Frames.

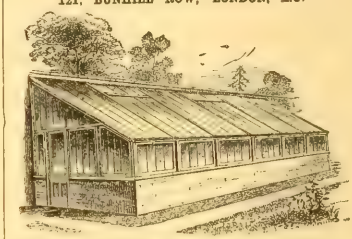
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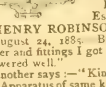
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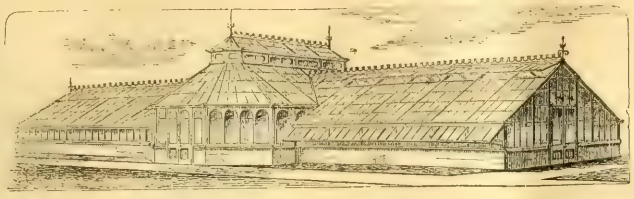
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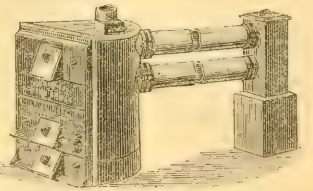
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# NATIONAL PEAR CONFERENCE,

ROYAL HORTICULTURAL SOCIETY'S GARDEN, CHISWICK, W.,
OCTOBER 20 to NOVEMBER 4.

THE

# GARDENERS' CHRONICLE

FOR

SATURDAY NEXT, OCTOBER 17,

WILL CONTAIN A

SERIES OF ORIGINAL ARTICLES

DEVOTED TO

# PEARS AND PEAR CULTURE,

ACCOMPANIED BY NUMEROUS ILLUSTRATIONS,

Expressly prepared for this occasion.

THE ISSUES FOR

OCTOBER 24, AND FOLLOWING WEEKS,

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TOGETHER WITH

VARIOUS ARTICLES, COPIOUSLY ILLUSTRATED,

RELATING TO THE

## HISTORY AND CULTIVATION OF PEARS,

AND THE DISEASES AND INJURIES TO WHICH THEY ARE LIABLE.

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W. RICHARDS, 41, WELLINGTON STREET, COVENT GARDEN, W.C.

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THE

# GARDENERS' CHRONICLE.

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## APPEAL TO THE BENEVOLENT

On behalf of Two Sisters, aged respectively 70 and 72, who have lived together all their lives (the younger has been an invalid for many years), but the leases of their property having fallen into the hands of the Ecclesiastical Commissioners some six years ago, have vainly struggled to obtain a living by letting apartments, the little money they had saved being now quite exhausted, and owing over a year's rent, make this Appeal, hoping to save their home from being broken up, and parting with everything they possess. Will any kind Friends help them in their deepest distress? The following Persons have kindly allowed a reference to be made to them, and will give every information respecting the genuineness of this appeal:—

Dr. MAXWELL T. MASTERS, F.R.S., 41, Wellington Street, Strand, W.C.
Mrs. DOWNING, 69, Lupus Street, Pimlico, S.W.
Mr. J. KEASLEY, 62, Saltoun Road, Brixton, S.W.
Mr. W. RICHARDS, 41, Wellington Street, Strand, W.C.

*Contributions gratefully received and thankfully acknowledged by* Mr. W. RICHARDS, "Gardeners' Chronicle" Office, 41, Wellington Street, Strand, W.C.

## GARDENERS' CHRONICLE OFFICE.

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*NOTICE to Correspondents, Advertisers, Subscribers, and Others.*

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*THE GARDENERS' CHRONICLE,* Volume XXIII., JANUARY to JUNE, 1885.
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THOMAS PERKINS AND SONS, 34, Drapery, Northampton.

LILIUM AURATUM.—Fine, large, plump English-grown Bulbs, 8, 10, and 12 inches, and monster Bulbs, 14 to 15 inches in circumference, now ready.
Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

TEA ROSES in POTS.—Thousands to select from. The beautiful pure white Niphetos, full of buds, Maréchal Niel, Gloire de Dijon, and others; 12*s.*, 18*s.*, to 36*s.* per dozen.
F. STREET, Heatherside Nurseries, Farnboro' Station, Hants.

AZALEAS, grand plants, Double White, 20*s.* per dozen. BOUVARDIAS, fine bushy plants, best sorts, 25*s.* per 100. TREE CARNATIONS, very fine, 40*s.* per 100.—W. JACKSON, Blakedown, Kidderminster.

PALMS, specially Hardy Grown for Cool Greenhouses and Dwelling-houses.—Latania borbonica and Seaforthia elegans, splendidly foliaged, 20 inches high, 12*s.* per dozen; sample plants, 1*s.* 2*d.*; same kinds, 12 inches high, 25*s.* per 100; sample 12 for 4*s.* All packages and parcels post-free. Postal orders to GARDENER, Holly Lodge, Stamford Hill, N.

**Notice.**

H. LANE AND SON'S New Descriptive CATALOGUE of ROSES, FRUIT TREES, RHODODENDRONS, Conifers, Trees, Shrubs, Forest Trees, &c., free on application.
The Nurseries, Berkhamsted, Herts.

"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1*s.*
BARR AND SON, King Street, Covent Garden, W.C.

DOUBLE AFRICAN TUBEROSES. Splendid quality, 20*s.* per 100, 3*s.* 6*d.* per dozen. Trade price on application.
HOOPER AND CO., Covent Garden, London, W.C.

LAURELS.—2 to 3 feet, extra transplanted, very bushy, 15*s.* per 100, £6 per 1000. The finest stock in the Trade. For other sizes and General Nursery Stock, see CATALOGUE, post free on application.
R. TUCKER, The Nurseries, Faringdon, Berks. Telegrams, "Tucker, Faringdon."

**Roses.**

W. GROVE, Hereford, offers choice and special sorts of Marie Baumann, Lady Sheffield, Charles Darwin, Lamarque, Celine Forestier, &c.; sample dozen, assorted, 4*s.* 6*d.*; A. K. Williams, 6*s.*; Merveille de Lyon and White Baroness, 7*s.* 6*d.* per dozen. Trade or other list.

**Fruit Trees and Roses.**

LAING AND CO.'S Stock of Fruit Trees, Roses, Shrubs, and Ornamental Trees is in prime condition for Transplanting. Prices are low. Early orders solicited. LISTS on application.
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

**Quality High—Prices Low.**

FRUITING TREES in POTS. GRAPE VINES, FIGS, PEACHES, &c.
Well-trained rees for walls, with fibrous roots, from Osborn's stock.
The choicest ROSES. SEAKALE for Forcing.
Inspection invited.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

CROUX ET FILS, NURSERYMEN, Vallée d'Aulnay, à Chatenay, Seine.—50 Hectares.
GREAT SPECIALTY—FRUIT TREES, carefully trained, very strong, in full bearing.
Expositions Universelle { 1867, Prix d'Honneur, et Objet d'Art. 1878, Two Grands Prix, Croix de la Légion d'Honneur.
CATALOGUES on application.

**Standard Trained and Dwarf Trained**

PEACHES, NECTARINES, and APRICOTS, also FRUIT TREES of all descriptions in large numbers. CATALOGUE free on application.
CHARLES TURNER, The Royal Nurseries, Slough.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above and all other leading varieties at greatly reduced prices.
T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

## SALES BY AUCTION.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, TUESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### Tuesday Next.—(Sale No. 6996.)

6000 White ROMAN HYACINTHS, 4000 TUBEROSES, 5000 White ITALIAN HYACINTHS, 500 IMANTOPHYLLUMS.

SEEDS, choice home-grown LILIES, DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, as above, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDA NEXT, October 20, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No. 6998.)

VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 22, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, fine importations of CATTLEYA DOWIANA, C. GASKELLIANA, C. DORMANIANA, LÆLIA PRÆSTANS, CYPRIPEDIUM STONEI, STANHOPEA WARDII, ONCIDIUM MARSHALLIANUM, SOPHRONITES GRANDIFLORA, best var., ZYGOPETALUM GAUTIERI, Z AROMATICUM, CALANTHE VESTITA OCULATA GIGANTEA, BIFRENARIA CORDATA, LYCASTE PLANA, VANDA HOOKERI, &c

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No 6998.)

CYPRIPEDIUM GODEFROYÆ, grand specimen.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, October 22, at half-past 12 o'Clock precisely, the finest specimen in cultivation of the new and rare CYPRIPEDIUM GODEFROYÆ, with over thirty beaks; also a splendid specimen of CŒLOGYNE MASSANGEANA, ÆRIDES SCHRODERII, CATTLEYA LABIATA, old autumn-flowering variety, with sheath; CATTLEYA EXONIENSIS, KEFFERSTEINIA GRAMINEA, PROMENÆA STAPELIOIDES, &c.

On view morning of Sale, and Catalogues had.

### Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, without reserve, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 29, at half-past 12 o'Clock precisely (in consequence of the death of Mr. W. J. Cross), the stock of ESTABLISHED ORCHIDS of Messrs. Cross & Steer, of Salisbury, comprising several hundred plants of Odontoglossum Alexandræ, including a curious "yellow" variety; good forms of Cattleya Dowiana, C. maxima, Cypripedium, Lælias, Lycastes, Laelia, &c.

On view morning of Sale, and Catalogues had.

### Lælia purpurata.

Seven Cases received direct from Brazil, in very fine condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms 38, King Street, Covent Garden, W.C., on THURSDAY, October 29.

On view morning of Sale, and Catalogues had.

### Dutch Bulbs.

Every MONDAY, THURSDAY, and SATURDAY.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, about 800 lots of CHOICE DUTCH TULIPS, CROCUSES, NARCISSUS, and other ROOTS from Holland, in excellent quality, and lotted to suit the Trade and private Buyers.

On view morning of Sale, and Catalogues had.

N.B.—The Sale on Thursday next will include a quantity of Terra Cotta Flower Pots, also on Tuesday and Saturday a choice assortment of about Fifty Lots of Barr's beautiful hardy Daffodils.

### Canterbury.—Expiration of Lease.

GREAT UNRESERVED CLEARANCE SALE of 16 Acres of remarkably well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs Kinmont & Kidd to SELL by AUCTION, on the Premises, The Vauxhall Nursery, Canterbury, about eight minutes' walk from either of the Canterbury Stations, on MONDAY, October 19, and three following days, at 12 o'Clock punctually each day, without reserve, in consequence of the expiration of lease, about 16 Acres of unusually well-grown NURSERY STOCK, in capital condition for removal, and offering exceptional advantages for procuring Trees and Shrubs for immediate effective planting. The stock will include Thousands of Conifers and Evergreens, ranging in height from 1 to 8 feet; 5000 Laurels, 2 to 4 feet; 2000 Spruce Firs, 2 to 5 feet; 4000 Rhododendrons, 2 to 4 feet; 13,000 Ornamental and Forest Trees, comprising 5000 Poplars, 2 to 10 feet; 2000 Larch, 4 to 6 feet; 2000 Limes, 8 to 12 feet; 1700 fine Purple Beech, 5 to 12 feet; 1000 Hollies, 4 to 6 feet; 10,000 clean-grown Fruit Trees, consisting of 10,000 Standard, Pyramid, and Trained Apples, 5000 ditto Pears, 2000 ditto Plums and Damsons, 1500 ditto Cherries, Peaches, and Nectarines, 10,000 Standard and Dwarf Roses, of all the best sorts; and large quantities of other stock.

May be viewed. Catalogues may be had on the Premises and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### Tuesday Next.—Camellias, Azaleas, and Roses.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, October 20, at half-past 12 o'Clock precisely, a consignment of CAMELLIAS, AZALEAS, PALMS, FICUS, and other PLANTS from Belgium; 500 standard and other ROSES from an English Nursery, best named sorts; home-grown LILIES, DUTCH BULBS, and a variety of HARDY PLANTS and BULBS.

On view morning of Sale, and Catalogues had,

### Waltham Cross.

IMPORTANT SALE OF WELL-GROWN NURSERY STOCK.

To Nurserymen, Builders, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Rumsey to SELL by AUCTION, on the Premises, Joyning's Nursery, ten minutes' walk from Waltham Cross Station, G. E. Ry., on TUESDAY, October 20, at 12 o'Clock precisely, a large quantity of beautifully grown NURSERY STOCK, which is in excellent condition for removal, including 3000 Aucubas, 1 to 3 feet; 500 Portugal Laurels, fine specimen Conifers, 1000 Flowering Shrubs, 500 standard Flowering Trees, 2000 London Planes, 8 to 15 feet; 1500 Ornamental Trees of sorts, 6000 standard and dwarf Roses of all the leading varieties, 1000 Roses in pots, for forcing; 1000 Bouvardias, in 48-pots, of the best kinds; Ferns, and other stock.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Lee, S.E.

IMPORTANT to the TRADE and PRIVATE BUYERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. North & Son to SELL by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., about a mile from three Railway Stations, on WEDNESDAY, October 21, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, comprising 2000 small Aucubas for pots; 4500 fine bushy Laurels of sorts, from 1 to 5 feet; 1000 oval-leaved Privet, 4 to 5 feet; 2000 Irish Ivies; 1000 Ivies of sorts; 4000 green variegated Euonymus for potting; 3000 Currants and Gooseberries; 1000 Standard and Dwarf Roses; 500 large Aucubas, 3 to 4 feet high and through, splendid specimens; 1000 Hollies and Yews, 2 to 4 feet; specimen Conifers in variety; 2000 Erica hyemalis, gracilis, caffra, and others, in 48 and 32-pots; and other MISCELLANEOUS STOCK.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 23, at half-past 12 o'Clock precisely, about 150 lots of ESTABLISHED ORCHIDS, from the New Plant and Bulb Company, including some of those collected by Mr. Edward Wallace, and a small consignment of AUSTRALIAN ORCHIDS a choice lot of ESTABLISHED and SEMI-ESTABLISHED ORCHIDS from the Continent, &c.

On view morning of Sale, and Catalogues had.

### Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to give notices that their NEXT SALE of the above will take place on TUESDAY, October 27, for which they will be glad to RECEIVE ENTRIES as EARLY AS POSSIBLE.

### Putney, S.W.—Expiration of Lease.

Unreserved CLEARANCE SALE of beautifully grown NURSERY STOCK, GLASS, ERECTIONS, &c., by order of Messrs. S. Mahood & Son, whose lease expires at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Windsor Nurseries, Lower Richmond Road, Putney, S.W., ten minutes' walk of either of the Putney Stations, on TUESDAY and WEDNESDAY, October 27 and 28, at 12 o'Clock punctually each day, the whole of the beautifully grown NURSERY STOCK, in excellent condition for removal, comprising many thousands of Evergreen and Deciduous Shrubs, 1 to 4 feet, 1000 Aucubas, thousands of green and variegated Euonymus, 5000 Hollies, 3 to 8 feet, all recently transplanted; Forest Trees in variety; 5000 Ivies; 2000 oval-leaved Privet, 3 to 6 feet; 2000 Standard and Dwarf-trained Fruit Trees; Greenhouse Plants in variety; Maidenhair Ferns; Ficus, 200 fine plants of Eucharis amazonica; the erections of Eight GREENHOUSES, with a total length of 250 feet, several PITS, the whole of the HOT-WATER PIPING, BOILERS, &c.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Hendon, N.W.

CLEARANCE SALE of the whole of the NURSERY STOCK, GREENHOUSE PLANTS, GLASS, ERECTIONS, and EFFECTS, by order of Mr. J. H. Pounce, the Land being required for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., ten minutes' walk from the Railway Station, on THURSDAY, October 29, at 12 o'Clock precisely, in consequence of the large number of lots, the whole of the well grown NURSERY and GREENHOUSE PLANTS, and Specimen Border and other SHRUBS, particularly suitable for the London Cut Flower and Shop Trade, for which the Stock has been specially cultivated. The Sale will include 150 pots of Eucharis amazonica, 150 Camellias, the best named sorts, 1000 Palms, Pelargoniums, 50 000 Ferns in thumbs and other sizes, strong Maréchal Niel Roses in pots, Chrysanthemums, 20,000 Golden and Green Euonymus, 2000 Standard and Dwarf Roses, chiefly Teas, hundreds of fine Shrubs for Planting, and large quantities of other Stock too numerous to mention, also the Erections of 9 GREENHOUSES and PITS, the whole of the HOT-WATER PIPING, BOILERS, STAGING, 200 LIGHTS and BOXES, Bay Market HORSE, 2 Spring CARTS, HARNESS, and other EFFECTS.

On view the day prior and morning of Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### West Wickham.

(Three minutes' walk from the Station.)

TWO DAYS' SALE of unusually well grown NURSERY STOCK, by order of Mr. T. Cook, to clear the ground.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, West Wickham, Kent, on THURSDAY and FRIDAY, October 29 and 30, at 12 o'Clock precisely each day, a large quantity of remarkably well grown NURSERY STOCK, the whole of which has been carefully prepared for removal. The Stock comprises 8000 Laurels, 1½ to 4 feet; 1000 fine Portugal Laurels, 3 to 6 feet; 3000 oval-leaved Privet, 1500 green Euonymus for pots, a large assortment of specimen Conifers and Evergreens, 1500 Green Hollies, 1 to 5 feet; 1500 Common Privet, 3 to 4 feet; 2000 Spruce Firs, 4 to 6 feet, for Christmas Trees; 6000 Deciduous Flowering Shrubs, 2000 Ornamental and Forest Trees, 2000 Gooseberries and Currants, and a great variety of other Trees and Shrubs.

Now on view. Catalogues had on the Premises, also at Mr. T. COOK'S Nursery, Beckenham, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### Sunbury.—Important to the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Turtle, to SELL by AUCTION on the Premises, Osborn's Nursery, Sunbury, on MONDAY, November 2, 8000 Maiden APPLES and PLUMS, from Osborn's well-known stock, fine trees; 10,000 Dwarf ROSES, 100,000 MANETTI STOCKS, 7000 PRIVET, 4000 CLIMBERS; also 2000 Double White PRIMULAS, in 48-pots, fine plants, 1000 TEA ROSES for forcing, 500 LOMARIAS, &c.

Further particulars will appear next week.

### Tottenham.

Adjoining the Tottenham Hale Station.

SALE of remarkably well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, adjoining the Railway Station, Great Eastern Railway, on TUESDAY, November 3, at 12 o'Clock precisely, by order of Mr. T. S. Ware, a large quantity of beautifully-grown NURSERY STOCK, comprising 5000 oval-leaved Privet, 3½ to 4½ feet; 2000 Caucasian Laurels, 3 to 5 feet; 8000 Dwarf Roses, 6000 Standard Ornamental Trees, 8000 Euonymus japonica, 1 to 2 feet, for potting 40,000 Seakale and Asparagus, 5000 showy border Carnations, 5000 good bulbs Lilium candidum, 2000 L. speciosum, rubrum, roseum, and album monstrosum; 5000 Gladiolus The Bride, 2000 Delphs spec ablis, 25,000 fine German Crowns Lily of the Valley, &c.

Fuller particulars next week.

### Betchworth, Surrey.—Expiration of Lease.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Betchworth Nursery, by order of Messrs. J. Ivery & Son, in consequence of the Expiration of the Lease of this Branch Nursery, on TUESDAY, November 3, the whole of the valuable NURSERY STOCK.

Further particulars will appear next week.

### Hampton, Middlesex.

A large quantity of beautifully grown FRUIT TREES selected with great care from the late Stock of Messrs. Osborn & Sons, whose reputation for the growth of Fruit Trees was unsurpassed. Thousands of Dwarf ROSES, and other NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, Osborn's Nursery, Hampton, on WEDNESDAY, November 4, by order of Mr. Will Tayler.

Further particulars will appear.

### Bromley, Kent.—Expiration of Lease.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. G. Stidolph to SELL by AUCTION, on the Premises, The Nursery, Bromley, Kent, on THURSDAY and FRIDAY, November 5 and 6, the whole of the remarkably well-grown NURSERY STOCK.

Fuller particulars next week.

### Great Sale of Planes.

MR. WILLIAM RUMSEY'S SALE on OCTOBER 29, contains the finest stock of PLANES ever offered by Public Auction.

Catalogue of Sale on application to Joyning's Nurseries, Waltham Cross, N.

### Martin's Nursery, Maybury Hill, Woking.

Adjoining the L. & S. W. Railway, close to the Oriental Institution, and within ten minutes' walk of Woking Station, main Maybury Road.

CLEARANCE SALE, WITHOUT RESERVE.

MR. F. W. ABRAHAM has been favoured with instructions to SELL by AUCTION (by order of Mr. H. Martin), on the Premises as above, on WEDNESDAY, October 28, at 11 for 12 o'Clock, the whole of the young and thriving NURSERY STOCK, consisting of 300 Aucuba japonica, 3 feet; 500 Euonymus, Retinosporas, gold Yews, Box edging, tree Box, specimen Conifers, 5000 common Yew, 20,000 Portugal Laurel, 2000 climbing H.P. and other Roses, common Laurel, Daphne Mazereon, 20,000 Rhododendron ponticum, 1 to 2 feet; 500 late Dutch Honeysuckle, 20,000 ovalifolium Privet, black and red Currants, 20,000 gold, silver, and green Holly; Euonymus radicans, and quantities of other useful Stock transplanted last autumn, all well rooted, and in splendid condition for removing and immediate effect; also 100 bushels of POTATOS, "Goodriche's Improved."

Catalogues may be obtained, five days before the Sale, at the "Albion," "Red House," and "Railway" Hotels; or free of the Auctioneer and Valuer, House and Land Agent, Woking, Surrey.

### Whittington Nurseries, 2 miles from Lichfield.

SALE of a well-grown and vigorous NURSERY STOCK, at the above widely known Nurseries, of several thousands of Trees and Shrubs, including Standard and Pyramid Apples, Pears, Plums, Nuts, and other Fruit Trees, part in a bearing state; Spruce, Austrian and Laricio Pines Oak, Ash, Elm, Beech, Sycamore, Chestnut and other Forest Trees; a large variety of Deciduous and Evergreen Shrubs, Hybrid and other Rhododendrons, a beautiful lot of Ivies, and Laurels, together with a choice selection of Cedrus, Cyprus, Junipers, Pinus, Retinosporas, Thuias, Yews, and fine Coniferæ, Clematis, &c.; a glorious lot of Maréchal Niel, Gloire de Dijon, Reine Marie Pie, Reine Marie Henriette Gloire Lyonnaise, Climbing Devoniensis, and other favourite, Roses: together with Camellias, Stove, Greenhouse, Seedling, Bedding, and other Plants, forming altogether one of the most attractive Nursery Stocks ever offered in the Midland Counties.

MR. GEORGE MARSDEN will SELL the above by AUCTION, by order of Mr. Holmes, at Whittington Nurseries, on WEDNESDAY, THURSDAY, and FRIDAY, October 21, 22, and 23, commencing at 10 o'Clock each day.

Conveyances will meet all the early trains up to 10 o'Clock each day, at the "Trent Valley" and "City" Stations, Lichfield.

For the convenience of purchasers, any lot or lots can remain on the ground until March 1, 1886.

### Edinburgh.

Drummond Brothers having resolved to give up the Florist and Nursery branch of their business,

MR. ALEXANDER DICKSON will SELL by AUCTION, at Larkfield Nursery, Ferry Road, Edinburgh, on WEDNESDAY and THURSDAY, October 28 and 29, at 12 o'Clock each day, a very fine lot of HOLLIES, YEWS, AUCUBAS, RHODODENDRONS, WEEPING TREES, &c, mostly suitable for immediate effect.

Now on view. Catalogues to be had from DRUMMOND BROTHERS, Agricultural Seedsmen, 82 George Street Edinburgh.

**Cart House Lane Nursery, Horsell.**
About 2 miles from Woking Station.

SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. WATERER AND SONS have received instructions from Mr. Richard Collyer, whose lease is expiring, to SELL by AUCTION, on the Premises, as above, on TUESDAY, October 27, and following day, commencing at 12 o'Clock precisely on each day, the FIRST PORTION of the well-grown NURSERY STOCK on the above land, in excellent condition for removal, having all been moved within two years, comprising a great variety of very fine Ornamental Evergreen Trees and Shrubs, including many Specimen Trees, 20,000 Green and Variegated Standard and other Hollies, 2 to 9 feet; 20,000 Yews, from 2 feet 6 inches to 7 feet; several thousand Common, Caucasian, and Portugal Laurels, Retinospora, Picea, Thuia, Cupressus Lawsoniana and erecta, Thuiopsis, Privet, 1000 Rhododendrons, principally choice named sorts; 5000 Spruce Firs, 2000 Half-Standard and Standard Roses of the choicest varieties, 6000 Manetti Stocks, 6000 Crab and Plum Stocks, 15,000 Birch, Poplar, Ash, and Chestnut Trees, 2 to 12 feet; and other Stock.

The Auctioneere would draw the special attention of purchasers requiring plants for ornamental and effective purposes to this Sale, as the whole of the Stock is grown on Specimen Trees and Shrubs, are in perfect condition for removal.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at their Offices, Chertsey, Weybridge Station, and High Street, Walton-on-Thames, Surrey.

**Sale at Chester of Valuable Nursery Stock, to clear ground** (portion of the Nurseries of the late firm of Messrs. Chivas & Weaver) on account of expiration of lease. The Sale consists of EVERGREENS, FLOWERING SHRUBS, ORNAMENTAL and FRUIT TREES, FOREST and UNDERWOOD TREES.

MESSRS. CHURTON, ELPHICK, AND CO. will SELL the above by PUBLIC AUCTION (by instructions of Messrs. James Dickson & Sons, Chester), at the Eaton Road Nurseries, Chester (fifteen minutes' walk from either Chester Railway Station), on THURSDAY, October 29, at 11 o'Clock precisely.

May be now viewed, and Catalogues obtained on the Premises; also from the Auctioneers and Vendors.

## IMPORTANT SALE
OF
## SHRUBS, FOREST TREES, ROSES,
*FRUIT TREES and HERBACEOUS PLANTS,*
AT
**John Stewart & Sons' Nurseries, Broughty Ferry, N.B.**
On WEDNESDAY, October 21.
**A. MONCUR, Auctioneer.**

TO BE LET, or SOLD, with Immediate Possession, a MARKET NURSERY, 6 miles from Covent Garden, comprising an Acre of Land, Eight-roomed Dwelling-house, Coach-house and Stable, Twelve Greenhouses, well heated and in good condition.

For particulars apply to PROTHEROE AND MORRIS, 67, and 68, Cheapside, E.C.

**To Nurserymen, Florists, and Others.**

TO BE LET or SOLD, on very advantageous terms, WILLS' NURSERY, situate in the Fulham Palace Road, Hammersmith, comprising an area of an acre and a half. There are several Hot-houses very efficiently heated by hot water on the premises. This Nursery would be invaluable to a Florist as a growing place for market, being so near Covent Garden; or the property, held for an unexpired term of sixty-six years, can be purchased.

Particulars on application to W. M. M. WHITEHOUSE, 26, Charles Street, St. James's, S.W.

TO NURSERYMEN and OTHERS.—The Proprietor of a good Nursery, 32 Acres in extent, situated on the high road, one mile from a county town, is desirous, from age (74), to give up business. No reasonable offer will be refused, either in the form of an Annuity or Purchase.

Further particulars on application to H. B. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, on Lease, a MARKET NURSERY, situated in N.W. district, consisting of an Acre of Ground, Eleven Houses, Cottage, Stabling, Yard, and every convenience. No premium. Stock at valuation. Some of the best Vines and Peaches in the county. Particulars of NURSERY, 41, Wellington Street, Strand, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

## WILLIAM CLAPHAM
SHAW HEATH, STOCKPORT,
*LANDSCAPE GARDENER and ROCK ARTIST.*

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Alban's, where work can be seen. Tufa formation, Sandstone, Natural Rockwork to suit any locality.

**Vines—Vines—Vines.**

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. each.

The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL."

ROYAL HORTICULTURAL SOCIETY'S GARDENS, Chiswick.
NATIONAL PEAR CONFERENCE and GREAT EXHIBITION of PEARS.
OCTOBER 21 to NOVEMBER 4, 1885.
Doors open at 1 P.M. on October 21.
Notice of intention to EXHIBIT to be sent to Mr. A. F. BARRON, Secretary, Royal Horticultural Society's Gardens, Chiswick, on or before October 14

THE ROYAL HORTICULTURAL SOCIETY of SOUTHAMPTON.
CHRYSANTHEMUM and FRUIT SHOW, on TUESDAY and WEDNESDAY, November 3 and 4. ONE HUNDRED and FIFTY POUNDS in PRIZES. Schedules and Entry Forms may be had of the undersigned. Entries close on October 27.
54, York Street, The Avenue. C. S. FUIDGE, Sec.

RICHMOND (Surrey) HORTICULTURAL SOCIETY 1885
The CHRYSANTHEMUM SHOW will be held in the "Castle" Hotel Rooms, on THURSDAY and FRIDAY, November 5 and 6. Special attention is directed to Class 5, in which £20 is offered for 48 Cut Blooms, distinct, 24 Japanese and 24 Incurved.
H.R.H. the Duchess of TECK has kindly consented to open the Show. Schedules may be obtained of
22, George Street, Richmond. J. H. FORD, Hon. Sec.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The ANNUAL EXHIBITION will be held on NOVEMBER 9 and 10. Schedules upon application to
Mr. W. GOLDSMITH.
1, Stafford's Place, Grove Road, Stamford Hill, N.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.
The NINTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 10 and 11, when, in addition to valuable Money Prizes, the CHAMPION CHALLENGE VASE, value TWENTY-FIVE GUINEAS, will be offered. Entries Close November 5. Schedules and further information of
Fife Road, Kingston-on-Thames. T. JACKSON, Hon. Sec.

SHREWSBURY CHRYSANTHEMUM SHOW, NOVEMBER 12 and 13. TEN GUINEA CUP for Forty-eight Blooms.
Mr. JONES, Secretary.

HUDDERSFIELD CHRYSANTHEMUM SOCIETY.
The SECOND EXHIBITION will be held in the Town Hall, Huddersfield, on FRIDAY and SATURDAY, November 13 and 14. Entries Close on Friday, November 6. Schedules and Entry Forms may be obtained on application to
Marsh, Huddersfield. JOHN BELL, Hon. Sec.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.
NOTICE IS HEREBY GIVEN that an ADDITION will be made to the PENSION LIST of this Institution in JANUARY NEXT. All persons desirous of becoming Candidates are requested to send in their applications to the Committee on or before November 4 next, after which day they will not be received. Forms will be given, in accordance with Rule 6, to those applicants (or their widows), who have been fifteen clear years on the books of the Institution.—By order,
E. R. CUTLER, Sec.
20, Spring Gardens, London.—October 5, 1885
Printed Forms of Application can be obtained from the Secretary.

**The Official Report of the Committee of the Orchid** CONFERENCE, held at the Royal Horticultural Society's Gardens, at South Kensington, on May 12 and 13, 1885.

THE ROYAL HORTICULTURAL SOCIETY will issue, about the end of the present month, a Full Report of the above
This Report in book form of octavo size, and containg about 150 pages, will be distributed to all Fellows of the Society as a number of the Journal, and it will embrace
1. A Report of the proceedings at the Conference, including a Paper read by Mr. H. J. Veitch, F.L.S., on the Hybridisation of Orchids, with illustrations; and a Paper by Mr. James O'Brien, on the Cultivation of Orchids.
2. Botanical and Horticultural Reports by Henry N. Ridley, Esq., B.A., F.L.S., Natural History Museum, South Kensington, and F. W. Burbidge, Esq., F.L.S., Trinity College Gardens, Dublin.
3. An Alphabetical List of the Genera of Orchids.
4. A Catalogue of Exhibitors and Exhibits.

It is proposed to admit a limited number of first-class Advertisements; and, as a large sale is anticipated in addition to the number of copies to be distributed, it will be a specially valuable medium for Orchid Growers and Manufacturers of Orchid Pots, Baskets, Rafts, &c, as well as to Fruit and Seed Growers, Florists, Horticulturists, Garden Implement Makers, &c.
Advertisements will be inserted in all issues at one price.
The Scale of Charges will be as follows:—

| | | £ | | |
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| Back Page | .. .. .. .. .. | 0 | 10 | 0 |
| Covers and Special Positions: Page | .. | 5 | 5 | 0 |
| Ditto ditto Half-page.. | | 3 | 3 | 0 |
| Ordinary Pages .. .. .. .. | | 3 | 3 | 0 |
| ,, Half-pages .. .. .. .. | | 1 | 15 | 0 |

All applications for Advertisement Spaces must be made to ADAMS AND FRANCIS (Advertisement Agents to the Royal Horticultural Society), 59, Fleet Street, London, E.C.

STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

CASH *v.* CREDIT.—300,000 Dwarf ROSES, on Manetti, the best plants money can buy; good sorts, 35s. per 100, 50 for 20s., worth double the money. Cash with orders, packing free. Also ASPARAGUS, 2 years, 2s. per 100; 3 years, 3s per 100; 4 years, 4s. per 100; much cheaper by the 1000 of all ages. All strong plants.
R. LOCKE, Fairseat, Wrotham, Kent.

**Special Offer.**

EPP'S NURSERY ESTABLISHMENT, Ringwood, Hants, have to offer this season a splendid stock of LARCH, Scotch and Spruce FIR, varying in height from 1 to 3 feet, at low prices; also a fine lot of Standard ROSES of leading sorts, equally cheap. Prices upon application.

FOR SALE, the favourite Black CURRANT TREES—Baldwin's Black, 9s. per 100; Green Bud, 6s. per 100. They are heavy croppers.

DAMSON TREES (the well-known Crutenden Cluster)—Standards, £4 10s. per 100; Half Standards, £2 10s. The trees are strong and well-rooted, and warranted true to name. Put on rail.—Sample on application to A. UNDERDOWN AND CO, The Vineries, Paddock Wood, Kent.

**Flowers for Winter and Spring.**

VIOLETS—sweet Violets.—Marie Louise, Victoria Regina, Belle de Chatenay, 6s. per dozen, 40s. per 100; Patrie, Comte Brazza, White Neapolitan, 12s. per dozen; twelve distinct varieties, package paid, 7s. 6d. per dozen; small plants, free by post, 3s. 6d. per dozen. The above are the best and most useful Violets in cultivation, have been grown in large clumps, and are now full of flower; if planted at once will ensure flowers all winter and spring.
FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

**Autumn Planting.**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application
The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6s. per dozen plants, 12s. per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3s. 6d. per dozen plants, 7s. 6d. per dozen clumps.
Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 2½d., free.
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

**"Irradiating the Present. Restoring the Past."**

A COMPLETE and ORIGINAL "LITTLE BOOK" of DAFFODILS, in its revised form, for 1885. *Price* 1s., *post-free.* There are numerous original Illustrations, and the Daffodils are the best ripened Bulbs to be got, Ireland being so genial to their cultivation. Over 140 sorts to select from. Early planting and early ripening of Bulbs should give grand results. Advantages offered by no other House in the Trade. WM. BAYLOR HARTLAND'S Old Established Seed Warehouse, 24, Patrick Street, Cork.

**To Nurserymen, Seedsmen, and Florists.**
DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAAC, Wholesale Importer of DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C. Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year

ROSES—ROSES—ROSES.—Splendid Plants of the following and other fine varieties, in 7-inch pots, 24s., 30s., 36s, and 42s. per dozen:—Maréchal Niel, Gloire de Dijon, Cheshunt Hybrid, Devoniensis, Duke of Connaught, Homer, Isabella Sprunt, Madame Lambard, Madame Willermoz, Niphetos, Rhodé de Lyon, Perle des Jardins, Safrano, &c. Our Roses are well known to be the finest and healthiest in the country. Complete LISTS of varieties in stock will be sent on application.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL."

**Pelargonium.**

VOLONTÉ NATIONALE ALBA.—All who were unable to procure this splendid new Geranium in May should do so at once. Nice healthy Plants in pots now ready, 5s. each, free by post. Awarded First-class Certificates, Royal Horticultural Society, Royal Botanic Society, Crystal Palace, Manchester, and the principal shows of the season. Sample flowers forwarded on application.
FREDERICK PERKINS, Nurseryman, Regent Street, Leamington.

**Novelties.**

CUPRESSUS LAWSONI ERECTA ALBA, novelty.
,, ,, robusta, novelty. For description, see my Catalogue of spring, 1885
,, ,, Silver Queen, novelty.
CHIONODOXA SARDENSIS, novelty, awarded a First-class Certificate in London, March 24 1885.
SPIRÆA PALMATA ALBA, novelty, awarded a First-class Certificate in London, June 17, 1885.
THYMUS LANUGINOSUS FOL. VAR., novelty. For description see my Catalogue of spring, 1885.
Prices on application.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

**The New White Hardy**

PASSION FLOWER, "CONSTANCE ELLIOTT," good plants.
HEDERA MADERENSIS VARIEGATA, the best Silver Variegated Ivy in cultivation, fine stuff.
Prices on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

**The Two Gems of the Season in Early Peas.**

MR. BURBURY desires to draw the attention of the Trade to these two PEAS, "EARLY KENILWORTH" and "WILLIAM the CONQUEROR"—the latter forming an excellent succession to the former. They are both Blue Marrows of the greatest excellence. The stock is about 200 bushels.—Apply for printed testimonials, price, &c., to W. BURBURY, Florist, &c., The Crew, Kenilworth.

MR. DODWELL'S GRAND CARNATIONS, the finest grown. 2000 Plants, including Seedlings of this autumn, to be Sold for the benefit of the Prize Fund of the UNION CARNATION and PICOTEE SOCIETY.
Special terms to the Trade. Particulars on application.
Address—HEAD GARDENER, The Cottage, Stanley Road, Oxford.

## CALCEOLARIAS, PRIMULAS,

**CYCLAMEN, and CINERARIAS.**

We simply wish to say that we have many thousands of lovely little Plants, and of the best strain in the World. *1s.6d.* per doz., *10s.* per 100, post-free. In small pots, *2s. 6d.* doz., *18s.* per 100.

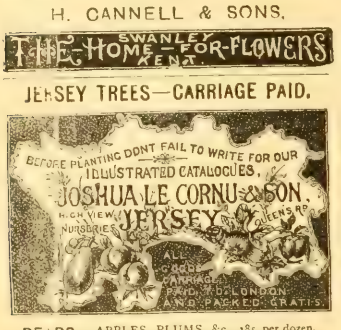
E. J JOHNSON, Esq., *Walton Street, Oxford.*
*September 21, 1885.*

"At our Show, June 16, I gained First Prize for Calceolarias. I am therefore anxious to secure that position next year. Send me a list."

H. CANNELL & SONS.

THE SWANLEY HOME FOR FLOWERS

## JERSEY TREES—CARRIAGE PAID.




PEARS—APPLES, PLUMS, &c., 18*s.* per dozen.
ROSES—Espalier trained, 24*s.* per dozen.
Magnificent Bushes 9*s.* per dozen.
Standards, strong, 15*s.* per dozen.
Cash Orders most liberally treated.

## BULB GUIDES.

These most interesting and instructive Catalogues are Now Ready, and may be had gratuitously upon application.

PART 1 consists of HYACINTHS, TULIPS, CROCUS, and a most complete LIST of MISCELLANEOUS BULBS.

PART 2 consists exclusively of LILIES and NARCISSUS, and includes every variety worthy of cultivation all of which are fully described.

**THOMAS S. WARE,**
Hale Farm Nurseries,
TOTTENHAM, LONDON.

## DUTCH BULBS.

*DIRECT FROM THE GROWERS.*

## ANT. ROOZEN & SON'S

CHOICE FLOWER ROOTS.

## OUR GUINEA PACKAGES

Of CHOICE HARDY FLOWER-ROOTS for Indoor and Spring Gardening have been much enlarged, and contain as under:

**COLLECTION "F." FOR SPRING GARDENING, Containing 938 Bulbs.**

36 Hyacinths, distinct colours.
50 Tulips, single early.
50 Tulips, single late.
20 Narcissus, Pyramidus.
40 Narcissus, in 6 sorts.
24 Narcissus, Poeticus.
50 Anemones, double.
400 Crocus, in 4 distinct colours
100 Ranunculus, double.
24 Gladiolus.
50 Snowdrops, sing'e.
25 Spanish Iris.
25 Ixias, in 6 named varieties.
25 Scilla hyacinthoides.
4 Lilium umbellatum.

**COLLECTION "C" FOR INDOOR. Containing 277 Choice Bulbs for Pots and Glasses.**

Hyacinths, 12 to 18 splendid named varieties.
3 Roman Hyacinths.
Tulips, single early—
12 to 14 fine named varieties.
6 Duc van Thol, red & yellow
6 ,, scarlet.
Tulips, double early—
6 La Candeur, pure white.
6 Rex Rubrorum, fine crimson.
6 Tournesol.
Crocus—
100 in 12 fine named varieties.
Narcissus, Paper White.
12 to 15 fine named varieties.
Narcissus, double and single—
12 in 4 named varieties.
Jonquils—
6 double, sweet-scented.
6 single, ,, ,,
12 Scilla sibirica (præcox).
12 Choice Ixias.
12 ,, Sparaxis.
12 ,, Oxalis.
12 Grape Hyacinths (H. botryoides).
6 Eranthis Hyemalis.
6 Snowdrops.
6 Iris Pavonia.

HALF OF EITHER OF THE ABOVE FOR 10*s.* 6*d.*

The above Packages may be had from our Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., on receipt of Cheque or Post-office Order.

For particulars of our other Collections of Bulbs for INDOOR and SPRING GARDENING, see our complete and revised CATALOGUE for 1885, which will be sent, post-free, on application to our Agents, or ourselves direct.

ANT. ROOZEN AND SON, Nurserymen,
Overveen, near Haarlem, Holland.

## STRAWBERRIES.

Strong Roots, 4*s.* per 100. Plants in small pots, 16*s.* per 100; ditto in large pots, 25*s.* per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

## CHOICE IMPORTED DUTCH BULBS.

**JARMAN'S No. 6 COLLECTION**

contains 1000 selected and assorted Bulbs, for Indoor and Out-of-door combined. Price 21*s.* cash. Package and Carriage Free. Others at 6*s.* 6*d.* to £4 4*s.*

**ROSES**, 9*s.* per dozen. A big stock and fine Plants.

*Send for large Descriptive LIST of Bulbs, Roses, Plants, Seeds, &c., to*

## E. J. JARMAN,

The People's Seedsman,
CHARD, SOMERSETSHIRE.

## AFRICAN TUBEROSES.

GROWN BY

WM. RISLEY, MARITZBURG, NATAL,
(The Original Grower).

The whole of Mr. Risley's crop is now landed, and has opened up in splendid condition. The Bulbs are exceptionally large and healthy, and such as have never before been offered in the Market. They are now for sale at very low quotations.

Intending Buyers are requested to make an early application to the undersigned. Terms, Cash.

WM. G. MAC GREGOR, 17, Fenchurch Street, E.C.

## "CORRISO, LONDON."

The above has been Registered as our Address for Telegrams

**CORRY, SOPER, FOWLER & CO. (Ltd.),**
Horticultural Sundries Merchants and Manufacturers,
18, FINSBURY STREET, E.C.

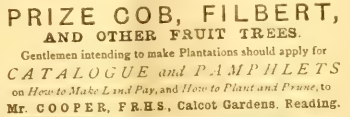
The Grand New Narcissus.

## "SIR WATKIN."

2*s.* each, 21*s.* per dozen, 160*s.* per 100.
The largest and finest known. First-class Certificate Royal Horticultural Society.
Descriptive CATALOGUE post-free. Plant at once.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

## PRIZE COB, FILBERT, AND OTHER FRUIT TREES.

Gentlemen intending to make Plantations should apply for *CATALOGUE and PAMPHLETS* on *How to Make Land Pay*, and *How to Plant and Prune*, to Mr. COOPER, F.R.H.S., Calcot Gardens, Reading.




An immense stock of healthy Trees of all kinds, true to name.

## CORDON FRUIT TREES

a Specialty. Send for Pamphlet on above.

## ORNAMENTAL TREES and SHRUBS

ROSES, RHODODENDRONS, &c.

*CATALOGUES post-free.*

## J. CHEAL & SONS

Crawley, Sussex.

Hooper's
Splendid Seeds and Bulbs at low prices
The Covent Garden
Catalogue free to Buyers
Seed Warehouse



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (2*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

## FRUIT. FRUIT. FRUIT.

*SEE NEW CATALOGUE.*

APPLES, PEARS, PLUMS, CHERRIES.—All the finest varieties.—Pyramids, 9*s.* and 12*s.* per dozen; Standards, 12*s.* per dozen; Dwarf-trained, 15*s.* and 18*s.* per dozen.
CURRANTS.—Black, Red, White, 12*s.* per 100, 2*s.* and 2*s.* 6*d.* per dozen.
RASPBERRIES, in variety, 12*s.* per 100; Northumberland Fillbasket, 6*s.* per 100.
GOOSEBERRIES, 15*s.* and 21*s.* per 100, 2*s.* 6*d.* and 3*s.* per dozen.
STRAWBERRIES.—All the most reliable croppers. Strong runners, 2*s.* 6*d.* per 100; in 2½-inch pots, 10*s.* per 100; in 3-inch pots, for planting 25*s.* per 100; Laxton's New King of Berries and The Captain, 2*s.* per dozen.

## ROSES. ROSES.

*See our New Catalogue.*

The finest H.P. varieties, 6*s.* per dozen, 40*s.* per 100
Tea-scented and Noisettes 15*s.* per dozen; 100*s.* per 100.
Beautiful Mosses, 6*s.* per dozen
Climbing varieties for Rockeries, Arbours, &c., 6*s.* p doz.
The above are all our own growing, and will grow and flower much better than Roses grown in a good climate and rich soil.

## FOREST TREES,

*ORNAMENTAL and DECIDUOUS SHRUBS,*

**RHODODENDRONS and AMERICAN PLANTS.**

Fine quality, low prices. See New Catalogue.

**OUTDOOR FLOWERS in SPRING.**

DAISIES, Red, White, Rose, &c.; POLYANTHUS, Single PRIMROSES, in variety of colours; WALLFLOWERS, CANTERBURY BELLS, 9*d.* per dozen, 4*s.* and 5*s.* per 100. PANSIES and VIOLAS (colours separate), ARABIS, ALYSSUM, SILENE COMPACTA, AUBRIETIAS, MYOSOTIS, 1*s.* 6*d.* per dozen, 8*s.* per 100; or, 500 assorted Spring-flowering Plants for 17*s.* 6*d.*, 1000 for 31*s.* 6*d.*
TULIPS, various colours, 5*s.* per 100; CROCUS, 2*s.* 6*d.* and 3*s.* per 100; SNOWDROPS, 2*s.* 6*d.* per 100; BORDER HYACINTHS, 16*s.* per 100; NARCISSUS, 5*s.* per 100; 500 assorted Spring Bulbs for 12*s.*, 1000 for 21*s.*
HEPATICAS, Blue and Red; Double PRIMROSES, Sulphur, 3*s.* 6*d.* per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

**BEAUTIFUL FLOWERS for GARDENS.**

POTENTILLAS, PYRETHRUMS, DELPHINIUMS.—Lovely hardy flowers for cutting or garden bloom, named, 5*s.* per dozen
SPLENDID PHLOXES, PENTSTEMONS, PINKS, PANSIES, in the finest varieties, 3*s.* 6*d.* per dozen.
HARDY HERBACEOUS PLANTS.—The most showy sorts, 3*s.* per dozen, 21*s.* per 100.
CARNATIONS and PICOTEES.—Good exhibition sorts, 6*s.* per dozen plants; fine Clove and Border Self varieties, 4*s.* per dozen—all from layers.
LILIES.—Candidum, Orange, and Tiger Lilies, 3*s.* per doz.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

**A GAY CONSERVATORY.**

CINERARIAS and HERBACEOUS CALCEOLARIAS, 1*s.* 6*d.* per dozen, from stores, our own fine strains.
BOUVARDIAS TREE CARNATIONS. DEUTZIA GRACILIS.—In pots for early blooming, 6*s.*, 9*s.*, and 12*s.* per dozen.
SPIRÆA JAPONICA, DIELYTRA SPECTABILIS.—Fine clumps, 3*s.* per dozen.
AZALEAS (chinese, mollis, pontica, or indica, all with buds for forcing, 18*s.*, 24*s.*, and 30*s.* per dozen.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

SEE our NEW CATALOGUE for this Autumn for Moderate Prices of all BULBS, PLANTS, or TREES you want for In or Out-door Gardening; also for CUT FLOWERS, WREATHS, CROSSES, BOUQUETS, &c.

## WM. CLIBRAN & SON,

OLDFIELD NURSERY, ALTRINCHAM;
12, MARKET STREET, MANCHESTER.

**SPECIAL OFFER TO THE TRADE.**

## CHR. BERTRAM,

**Seed Grower and Merchant, Stendal, Germany.**

Begs to offer, Free to London, for Cash or Cheque:—
TULIPA GREIGII, £1 10*s.* per 100.
IXIOLIRION PALLASII (TARTARICUM), £1 10*s.* p. 100.
The Bulbs of these beautiful and rare plants of Turkestan have just arrived, in an unusually fine condition. For Orders of upwards of 500 of each reduced rates on application.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may *now* be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

**Special Offer.—Expiration of Lease.**

ROSES, Best Dwarf H.P., 35s. per 100; fifty for 20s.
TEA ROSES, in 5-inch pots, all the leading varieties, including Niphetos, Maréchal Niel, and Grace Darling, 12s. per dozen.
NEW ROSES of 1885, in 48 pots, 12s. per dozen.
STANDARD ROSES, including Gloire de Dijon and Maréchal Niel, 12s. per dozen.

APPLE TREES, Standards, 18s. per doz.; Pyramids, 12s. doz.
,, ,, Bush, 6s. per dozen; Dwarf-trained, 21s. per dozen.
PEARS, Standards, 18s. per dozen; Pyramids, 5 to 6 feet, 21s. per dozen.
,, Dwarf-trained, 24s. per dozen.
PLUMS, Standards, 18s. per dozen; Trained, 24s. per dozen.
GOOSEBERRIES, Warrington and best leading sorts, 2s. 6d. per dozen, 18s per 100.
CURRANTS, Red and Black, 2s. per dozen, 15s per 100.
CONIFERS, for Lawn Planting, all good varieties, 12s. p. doz.
SHRUBS, Flowering, 4s. per dozen.
BOX, Tree, 8s. per dozen.
BAY, Sweet, 9s. to 18s. per dozen, 2 to 3 feet.
CHESTNUT, Scarlet, 5 to 10 feet, 8s. to 24s. per dozen.
IVIES, in sorts, Plain and Variegated, in pots, 9s. per dozen.
LAURELS, Portugal, Standards, 2 feet stems, good heads, 2s. 6d. each.
PYRUS MAULEI, fruit makes a delicious preserve, in pots, 9s. per dozen.
PRIVET, for Hedge Planting, 15s. to 25s. per 1000.
ASH, Weeping, stems 8 to 10 feet, 3s. 6d. each.
LABURNUMS, good heads, 1s. each
ELMS for Avenue Planting 9 to 12 feet, 1s. 6d. each.
PLANES, best for Town Planting, 8 to 10 ft., 2s. 6d. each.
POPLARS, Black Italian, 8 to 12 ft. 6s. to 12s. per doz
SYCAMORE, 8 to 10 feet 6s. per dozen.
THORNS, Standard, flowering, 15s. per dozen.
} Standard trees.

*The best Evergreens for Sea-side Planting.*

PINE, Austrian, 12 to 18 inches, 6s. per 100; 18 to 24 inches, 12s. 6d. per 100; 24 to 30 inches, 20s. per 100; 30 to 36 inches, 35s. per 100; 3 to 4 feet, 50s. per 100.
CUPRESSUS MACROCARPA, in pots, 4 to 5 ft., 18s. per doz.
ESCALLONIA MACRANTHA, in pots, 6s. per dozen.
EUONYMUS, best green, 12 to 18 inches, 4s. per dozen; 18 to 24 inches, 5s. per dozen.
AMPELOPSIS VEITCHII, best for covering walls, 6s. to 9s. per dozen.

*Cash to accompany order.*
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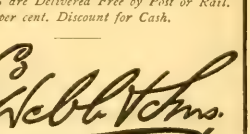
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Dr. MAXWELL T. MASTERS, F.R.S., 41, Wellington Street, Strand, W.C.
Mrs. DOWNING, 59, Lupus Street, Pimlico, S.W.
Mr. J. KEASLEY, 62, Saltoun Road, Brixton, S.W.
Mr. W. RICHARDS, 41, Wellington Street, Strand, W.C.

*Contributions gratefully received and thankfully acknowledged by* Mr. W. RICHARDS, "Gardeners' Chronicle" Office, 41, Wellington Street, Strand, W.C.

## National Pear Conference,

*Royal Horticultural Society's Garden, Chiswick, Oct. 20 to Nov. 4.*

NOTICE.

## THE GARDENERS' CHRONICLE

FOR

*OCTOBER 17 and FOLLOWING WEEKS,*

WILL CONTAIN SPECIAL ARTICLES ON

**PEARS AND PEAR CULTURE,**

Contributed by the Leading Growers of the day, and Illustrated with numerous

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Strong, healthy, and well-rooted.
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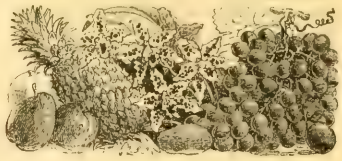
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To Her Majesty the Queen, and
H.R.H. the Prince of Wales,
READING, BERKS.



THE

# Gardeners' Chronicle.

*SATURDAY, OCTOBER 17, 1885.*

## PEARS FOR SMALL GARDENS.

THE approaching Pear Congress recalls some experiments in the cultivation of pyramids and bushes in my own garden in Essex. I had ten years' experience of the system which the late Mr. Rivers described in his *Miniature Fruit Garden*, and which he personally explained to me; and when last I saw my old favourites, all budded or double-grafted on Quince stocks to dwarf their growth, they were bearing large crops of fruit. I was an amateur, but in paying a recent visit to the famous nurseries at Sawbridgeworth one of the questions put to the existing firm was "Why should not the problem of Pear-growing for the million be solved by cottagers?" The Pear is peculiar. Other fruits can be grown by the acre almost anywhere, but I observed lately that Lord Sudeley, in his Worcestershire experiment, had planted thousands of other fruit trees, but a few hundreds only of Pears. It is the same in Kent, where Pears are grown in very small quantities compared with Apples, Cherries, Plums, and small fruits. The Pear of Old England, which gave the name of Pear Tree to scores of sites and spots in various counties, will flourish in all soils, drive its roots deep down in clays or gravels, still growing into the same sturdy, rigid, tree and bearing the same big crops of hard and indifferent fruit. But Pears that melt in the mouth, like Marie Louise, or buttery Pears like Beurré Bosc, are all fastidious subjects, requiring warm soils and plenty of sun. All the conditions of their production must be favourable—sort, stock, soil, and site must all be well chosen, and some will succeed where others may fail.

In a tent, on a village green in Sussex, the other day several prizes for Pears were awarded to cottagers, and each Pear would have sold at 6*d*. or 8*d*. in the fruiterers' shops at Eastbourne.

In another Sussex village I have more than once heard from a cottager the story of the Plum tree, price 1*s*., sort Victoria, which he planted against his house, and which soon brought him a crop of eight dozen, which he sold to a dealer at 12*s*. a dozen. Plums are not my subject, but near that profitable Plum tree, in another cottage garden, is a big bush of Williams' Bon Chrétien which produced nearly a bushel of Pears this year. I called several times in passing the cottage to admire the Pears and to witness certain smiling faces as the crop ripened, till one day I found the tree stripped. A dealer had called, and for each Pear he had left behind a penny. They were retailed in the nearest town at 2*d*. and 3*d*. each.

As in Essex, so in Sussex, or any other dry county not too far North. You may grow in dry climates the finest dessert fruit on the various kinds of dwarf trees. There are soils and sites here and there capable of producing the best Pears on large orchard trees, but it seems to me that the artificial system of Mr. Rivers might be carried out generally by cottagers, because the great obstacle to the plan,

the cost of labour, would be obviated. I cannot show a balance-sheet of my own Pear garden, inasmuch as the produce was consumed at home, but I can say that the labour cost nothing, for I planted, pruned, and pinched the trees myself and also picked the crop. In the case of cottagers, too, the labour of the garden is a labour of love. The cost of the best Pear trees, two and three years double grafted, is 30*s.* per dozen, or one year grafted 18*s.* per dozen, or less ; and I believe that if two or three millions of these dwarfed fruit trees were planted in cottagers' gardens by the landowners, who might charge ten per cent. on the outlay, that a considerable income would devolve upon a class whose homes cannot be made too attractive. I asked at Sawbridgeworth, the other day, "What do you think of this scheme?" and I got a reply conveying real information, with examples, for the cottagers of that neighbourhood have borrowed the practice set before their eyes during the past forty years by Messrs. Rivers, and are growing Pears on small trees as they do.

Within the limits of this nursery of 140 acres, mainly devoted to fruit trees, with a few acres of Roses, a number of Pear trees have been planted, as examples for the production of fruit and and to show the various methods of training. The espaliers, and five-branched cordons are kept in form by five wires held by sticks and supported by strong posts, 30 feet apart. Some of the cordons are diagonal, others upright, and some are trained to a single wire running parallel with the ground and 8 inches high. All the appliances are inexpensive. Those handsome and large fruited seedlings, Princess and Magnate, both raised from pips of the Louise Bonne of Jersey, and both prominent among the 100 varieties which gained Messrs. Rivers the 1st prize at the Crystal Palace, Oct. 7, were grown on cordons only three years old. It used to be said of a Pear planter, he "plants Pears for his heirs," but a cottager can now plant a pip at the birth of a baby, and the seedling will begin to bear almost as soon as his little one can run alone.

A great advantage of small trees consists in the opportunity offered for the testing of sorts. In many gardens sorts unsuited to the sites are planted, they stand ten years without bearing, and after encumbering the ground perhaps another ten years, they are cut down. They can be tested on the Quince stocks in a year or two by planting cordons, or dwarf maidens, which may be trained as you please. Some sorts, as Gansel's Bergamot, bear indifferently on the Pear and far better on the Quince, when double grafted. Others do well on either stock. Fondante d' Automne, a capital October Pear, with smooth tender skin, good eye, and a particularly well-bred appearance, is one of these. Beurré Hardy, another October Pear, with a good deal of colour when grown in full sunlight, is almost too vigorous in habit for the Pear stock, but it proves a free-growing, free-bearing pyramid on the Quince. A cynical remark is heard sometimes at markets that "a Pear is a Pear," and it must not be forgotten by growers for sale that good quality is not more indispensable than good crops, and therefore I would strongly recommend the principle of testing at home before planting doubtful sorts largely.

Another point to bear in mind is that Quince stocks require good soils. My own Pear plot was a stiff clay, which is as ungenial as a sharp gravel, and must be corrected. With this object I dug holes 2½ feet deep and 3 feet square, and placed broken bricks and tiles at the bottom. The holes were then filled up with a mixture of the clay, with friable soil, consisting of rotten turf and road-scrapings. The made earth was raised a foot above the surface, and the tree planted on the top to the depth of the bud or graft. I believe this plan promotes the absorption of moisture and solar heat, and assists the ripening. We kept the ground clean by hoeing, but avoided digging. It has been said that raised borders dry rapidly, but they will not do so if they are mulched, and I have always thought that the comparatively shallow root-hold of the dwarfed trees which keeps them out of hurtful subsoils is not unfavourable to them even during droughts, owing to the large mass of fibrous roots which such trees produce. Growers must remember that large fruit crops can only be obtained by means of abundant dressings. A strong manure used by Messrs. Rivers, especially in pot culture in orchard-houses, consists of half road-scrapings and half kiln-dust mixed together and saturated with strong liquid manure. Cottagers residing away from the great Hertfordshire maltings may substitute the manure of their pigs. But although raw manure may be used at the surface it must not be mixed with the soil at the time of planting. The speedy restoration of exhausted fruit trees when the turf of the orchard proper is liberally dressed shows the propriety of surface dressings.

The best shapes are pyramids and bushes, according to the habit of the particular variety of Pear. Pruning is a very simple matter. The crops these trees produce will prevent rampant growth, and nothing is needed beyond stopping the shoots in July and a necessary thinning-out in winter. Learners with gardening instincts soon fall into this system of culture. Some of the trees at Sawbridgeworth have been kept hollow in the centre, around which is a circle of long leading branches, cordon-like, rising 8 feet high, and literally crowded with fruit. Instead of ropes of Onions there are ropes of Pears, richly coloured, of various shapes such as different kinds of Pears present, and offering to my thinking a novel and beautiful spectacle. These trees stand about 6 feet apart, and the crop in many cases is not less than a bushel to a bushel and a half on each tree. There are bushels on trees of other habit and different shape, and some may be noticed spreading wide and not more than 3 feet from the ground, each bearing this year about a bushel.

In speaking of cottagers, I ought to have said, that in this parish of Sawbridgeworth, as elsewhere, they do not possess properly constructed fruit-rooms, and, therefore, they do not grow the keeping Pears, which require careful storeage and thin distribution on shelves. Except a few hard baking Pears, which may be heaped without injury, almost like Potatos—the Vicar of Winkfield, for example—they confine their attention to early sorts, which the dealers collect at the time of gathering. Doyenné d'Eté, ripening in July, is one of their favourite sorts, and the earliest. As a bush on the Quince it is most prolific, but it must be double grafted. Other favourite sorts of the same class are Beacon, Williams' Bon Chrétien, and its esteemed seedling Souvenir du Congrès, which ripens two or three weeks later ; and after them



Fig. 102.—Pear-cordon arch. (see p. 490.)

Marie Louise and Louise Bonne of Jersey, and Madame Treyve, ripening in October. Fertility is another promising Pear of the same month. These are followed in November and December, in the case of growers who can keep them properly, by a host of sorts—Beurré Bosc, Glou Morçeau, Pitmaston Duchess, Doyenné du Comice, Durandeau, Duchesse d'Angoulême—a Pear that recalls some of the "idiosyncrasies" of fruit trees, for it proves insipid when grown on a wall, though rich and melting as a pyramid on the Quince. I will merely remind the grower that the sorts he selects should if possible be subjected to the test of trial at home. It would spoil his profits to plant Pears like Beurré de l'Assomption, for example—a good Pear, but producing tender blossoms, which readily rot, or are easily cut by frost, rendering the variety quite unsuitable for outdoor culture, though it is a noble Pear under glass. He would do wrong, too, to plant any sort bearing very large fruit except as dwarfs, for such fruit growing on tall trees would be easily shaken down by wind. This seems another good argument in favour of the dwarfing system. *H. E.*

# New Garden Plants.

CATTLEYA SCITA, *n. hyb., nat.* (?)

Mr. B. S. Williams imported this very fine novelty amidst a mass of Cattleya intermedia. Finally it expanded its flowers, which are of quite the same shape as those of the larger variety of Cattleya guttata. The sepals and broad waxy petals are of the lightest ochre, with a few marginal, very light purple shades, and some small blotches of the same colour scattered in a most irrgular way over those organs. The lip has its lateral laciniæ half round, projecting in antrorse sharp angles. The general colour of them is lightest sulphur, anterior edges of the laciniæ purple, disc white with some purple lines. Claw of the lip broad linear, entire, long anterior blade transverse, oblong, emarginate in front, toothletted on the sides. The whole of this part, excluding, however, the white base of the claw, is of the finest purple, and the asperities on the disc teach us clearly the affinity with Cattleya guttata. The column is of the lightest yellow, with some fine purple lines and spots. T.m.t., it is exceedingly elegant, for the noble simplicity of its fine colours. There can scarcely be a doubt about its origin. *H. G. Rchb. f.*

DENDROBIUM PARTHENIUM, *n. sp.**

Take the stem of a very tall long-leaved Dendrobium revolutum, Lindl., or of Dendrobium Dearei, Rchb. f., give it two flowered inflorescences of flowers like those of Dendrobium radians, Rchb. f., and you have this lovely Bornese novelty, just introduced by Mr. W. Bull. The stem at hand exceeds 2 feet in length, and is as thick as a moderate goosequill, with 6–8 furrows and blunt angles. Leaves very strong, gristly, 1½ inch long by 0.6 inch wide at the base, tapering, blunt bilobed at the apex. Racemes very short, with two flowers. It appears most probable they will by-and-bye become richer. Ovary green. Long pedicel white, with green base. Apex of mentum green. Flower purest white. There is a fine purple blotch at the base of the lip, and similar lines in front of the column under the fovea. There are three purple blotches at the base of the anther. Are they constant? Petals oblong, blunt, far surpassing in extent the semilanceotriangular sepals, which have obscure keels. Lips basilar, lobes very short, triangular, midlobe cuneate, obovate, emarginate, a little wavy, very stately. It is named Parthenium in allusion to its white virginal flowers, which might, no doubt, have pleased Vesta herself, provided the Romans had known Dendrobia. *H. G. Rchb. f.*

* *Dendrobium Parthenium*, n. sp.—Aff. Dendrobio Dearei; caule elongato multisulcato; foliis densis cartilagineis a basi latiori oblongis apice obtuse bilobis; racemis inter folia bifloris (semper?); mento extinctoriformi ovarii pedicellati dimidium æquante; sepalis triangulis acutis obscure medio unicarinatis; tepalis oblongis obtusissime subacutis; labelli lobis basilaribus obtuse minuteque angulatis, lobo mediano producto magno cuneato oblongo bilobo undulato; columna apice constricta tridentata, infra ampliata, sub fovea stigmatica fovea altera oblonga. Flos candidus. Labellum disco basilari purpureum. Lineæ quædam purpureæ antice in columna. Ex Borneo insula introd. dom. W. Bull, Londinensis. *H. G. Rchb. f.*

MASDEVALLIA SENILIS, *n. sp.**

This was imported by Messrs. H. Low & Co., amidst specimens of Masdevallia Chimæra. Having before me a set of more than twenty "Saccilabiatæ" or Chimæroids, I hoped, indeed, to find a name for this, though its appearance was puzzling to me. I must, however, confess, I did not come to the point. A specimen of what may be the same I have from Wallis, left unnamed. Can it be a hybrid between Masdevallia spectrum and M. Chimæra? I should guess so, were it not for the large flowers of the last named species and the comparatively small one of Masdevallia senilis, and for the rather equal length of the tails and bodies of the sepals. The flower is equal in size to one of Masdevallia Benedicti (troglodytes). The reddish-brown colour of the sepals is as in Masdevallias Rœzlii, Winniana, spectrum, severa. The inside is covered with numerous exceedingly short yellow hairs. Petals white, with two to three mauve-brown spots. Lip lightest purple and white. Column light green. The large leaves are remarkable when compared with the comparatively small flower. *H. G. Rchb. f.*

* *Masdevallia senilis*, n. sp.—Aff. Masdevalliæ spectro et Chimæræ; folio spatulato acuto extus per nervum medium carinato, pergameneo, pedunculo breviori unifloro (semper?); sepalis a basi triangulis tensim in caudas æquilongas attenuatis lateralibus subdivaricatis, omnibus parce ac brevissime flavo-pilosulis; tepalis apice bivalvibus pulvinari incluso hispido; labello basi angulato calceolari antice assurgente valde angusto, limbo anteriori denticulato, carinis longitudinalibus ternis, lateralibus obliquis numerosis; columna apice apiculata seu denticulata. Perigonium rufulum, parte inferiori sepalorum lateralium ochroleucum. Lineæ obscuræ, 5–7 in basi sepalis imparis ochraceo-flava. Tepala alba maculis violaceo brunneis. Labellum pro parte majori carneum. Columna viridula. *H. G. Rchb. f.*



Fig. 103.—Marie Louise, on the pear-stock: branches trained down. (see p. 490.)

## PRUNING AND TRAINING PEARS.

By reference to my former remarks at p. 272, it will be noted that my second paper has to deal with "Pruning, training, aspects and the forms that are best suited to certain varieties." Pruning and training I take together, for the simple reason that the mode of training must in some degree determine the extent, and frequency or otherwise of pruning. To illustrate my meaning, here is a tree with a single or may be double stem, trained to a wall some 10 feet in height, and which we call a "cordon," and on the same wall is another tree trained horizontally, and covering a space at least twenty times the size of the "cordon," and each have roots proportionate to spread of branches; as a matter of course therefore, the one form requires very different treatment, as regards pruning, to the other; and here I ought to explain, that I apply the term pruning to both root and branch, for the one always acts in sympathy with, or rather is influenced by the treatment the other receives.

*Pruning.*—With this explanation I pass on to note the fact that some good gardeners, men of deep thought and of first-rate practical ability, disparage pruning, and do just as little of it as they are obliged to do, for appearance sake—I mean the appearance of the trees. Their favourite argument is that Nature ought to be allowed to prune by fruitfulness. Well, sometimes (very rarely though) Nature does oblige us, but she is far too freaky to be trusted at all times, and as regards Pears, never. Extension or freedom of growth combined with renewal of soil, will sometimes revive the waning vigour of an old tree, but once that vigour is assured there will be but little fruit unless the pruning-knife is judiciously applied. I grant that fruitfulness would be the best pruner, or, say the preventer of the necessity of it, but then how is this constant fruitfulness to be attained? Why, in no other way than by pruning. Call this dogmatism, or by whatever term you like, I have proved it by that best of all tests, namely, abundant crops of fruit from the same trees every year and for many years in succession.

Having decided that it is necessary to prune, next come the questions to what extent, and at what season it should be done—questions most difficult to answer in a way to suit varying climates and soils, hence general answers can only be given. In my former paper it will be seen that the Quince was most in favour as a stock for Pear growing, and it gains another mark in respect of this question of pruning. The fruitfulness of trees on the Quince over trees on the Pear stock is proverbial, and consequently less pruning is needed, and this pruning is best done in the summer by pinching out points of the young shoots as soon as they have grown to the desired length the form of training necessitates. And here I would observe that I am no believer in such constant repression of the summer's growth as to render winter-pruning unnecessary; so far from this being the fact I sometimes allow the growth of trees that are lacking or appear to be waning in vigour, to remain intact till the winter, and even then give pre-

ference to leaving the new shoots rather than rigid adherence to modes of training.

Trees on the natural or Pear stock, no matter in what description of soil they are growing, are so profuse in wood-growth that they require just as much summer pruning as do those on the Quince, and in addition winter thinning out of spurs is always necessary, except in seasons like the present, when abundant fruiting limits wood growth.

*Root-pruning* is a knotty point to deal with, but—Pharisee-like—I have settled it to my own satisfaction. It is necessary; and yet one can obtain fruitfulness of trees by all but dispensing with it. Trees on the Quince stock we never root-prune (they fruit abundantly every year). When our trees are received from the nursery the thick woody roots are cut rather hard back, and any that have manifested a tendency to go straight down we cut clean off. This is the first step towards prevention of root-pruning, and the next is that in two years from the time of first planting the trees are again dug quite up, all thong-like and particularly straight down roots are again cut off, and the trees replanted, and those on Quince never require curtailment of root again. Those on the Pear stock occasionally do, and when such is necessary one side of the tree is rather hardly dealt with one year, and the other half the following year; but it is only large trees that are allowed unlimited growth that require such curtailment frequently.

*Column Training.*—Whilst on the subject of root-pruning I would like to refer to a line of about fifty conical trained trees that we have here, every one of which is on the Pearstock. They fruit most regularly, and yet are never root-pruned, at least not in the strict sense of that term. They are growing at the back of a border 8 feet wide, and which is filled with Roses. These—the Roses—are all lifted every alternate year, and the border is deeply trenched and heavily manured. During the process of trenching any Pear roots likely to interfere with the growth of the Roses are cut away, but only such, and yet this appears to be sufficient to keep the trees in a high state of fruitfulness, and no doubt the rich dressings that are intended for Roses only has much to do with the production of fine Pears. The Marie Louise, on the Pear stock, fig. 103, p. 489, is one of these trees. The cut does not very clearly show the mode of training, but as I think this ought to have somewhat of the credit of continuous fruiting I refer to it. The tree is furnished with branches from one main stem, each branch at a distance of from 24 to 30 inches from the main stem is bent downwards, and in some instances, for the sake of uniformity, the bend is rather a severe one, but my belief is that the change in direction thus given conduces to the formation of fruit-buds; hence I most strongly recommend this mode of training for gardens or positions that are restricted with regard to space. I ought to add that the mode of training is simplicity itself, the branches are merely bent to the desired angle, and are then with a piece of cord secured to the main stem, and the operation is complete; of course care is needed not to break the branches by bending them too far at once. They should be got down by degrees.

*Bush Training.*—Another form of training that is much in favour here is what may be described as an "upright bush form," of which fig. 106, gives a pretty correct representation. It is a tree of Beurré Clairgeau on the Quince stock, and which was planted in the autumn of 1876, and except the year after planting, the crop of fruit has been as heavy as it is this year. The mode of training is self-explanatory. Root-pruning has only been that of lifting and replanting in the autumn of 1878, and which did not affect the fruiting of the following year. Rich surface-dressings of manure have been regularly applied, and which might be thought to aid wood growth, but such has not been the case, either in respect of this tree or of many others that were planted at the same time, and which are trained in a similar fashion. The only pruning the trees receive is that of pinching back the lateral growths of the principal branches twice during the season, the first pinching being done about midsummer, and the last at the end of July or beginning of August. Of course, when the trees are being pinched, and there is space for another principal branch, the most likely young shoot is left intact with that intent. The winter pruning required is almost *nil*, for there is really nothing to be done except it be the cutting out of any long spurs, or may be the removal of a main branch, with a view of making the trees more uniform.

We have some trees of the same form on the Pear stock, but they are much more difficult to keep in a fruitful condition. The reason will be obvious when it is stated that wood-growth is at least six times greater than that of trees on the Quince, consequently we have to check this redundant growth by root-pruning, in the manner indicated above.

*Stocks.*—The question will naturally be asked, why have trees on the Pear stock at all? To which I reply, because it is suitable for soils in which trees on the Quince would be very short-lived. Indeed, in shallow sandy or gravelly soils, trees on this stock would thrive and fruit; but a couple of years would be sufficient to kill trees on the Quince; moreover, some few varieties of Pears are finer, and fruit just as well on this stock as on the Quince. Amongst those that have come under my own observation are Duchesse d'Angoulême, Josephine de Malines, Winter Nelis, Swan's Egg, Dunmore, and Beurré de Capiaumont. It will be such information as this that the approaching Conference will elicit if each exhibitor will state in full the conditions, stocks, &c., under which each of his exhibits has been grown.

*The Cordon System.*—For some few years past the "cordon" system of training has been immensely popular, and I think justly so. Undoubtedly the great merit of the system is the power it places in



Fig. 104.—Diagram to show construction of the Pear. (See p. 491.)

the gardener's hands of having within the same space as previously a much longer succession of fruit. To take our own case: previously we had 9 yards of wall-space occupied by one large horizontally trained tree of Beurré d'Amanlis Pear; in the same space we have eighteen varieties of Pears, and though some few come in at near about the same season, we have a succession of fruit over from eight to ten weeks, in lieu of the three weeks that Beurré d'Amanlis continued in good condition. But this is not the only advantage. By high feeding we get finer, more beautifully coloured and highly flavoured fruit; and yet again, every cottager can now humour his fancy in his own little plot by the cultivation of Pears on this principle. The picture (from a photograph), fig. 102, p. 488, gives but a very faint idea of the beauty of an arch we have here trained on this principle, nearly every tree of which is annually clothed with fruit. About two-thirds of the trees are on the Quince, the remainder on the Pear stock, and these we sometimes have to cut round at the root, though very seldom, as close pinching of new growth, that cordon training entails, has necessarily its repressible effects on root extension.

### Sorts, Soils, and Aspects.

With regard to the second part of my subject—viz., "Aspects and forms that are best suited to certain varieties"—it must ever be borne in mind, that perhaps there is no fruit that varies more greatly, in various soils, aspects, and districts, than does the Pear. Some kinds that are quite worthless in one district are in others excellent, and some that are first-class for dessert in one district have to descend to the culinary class elsewhere, and it is the same more particularly with regard to position or aspect. Trained to a wall a bad kitchen Pear will oftimes prove a good table Pear, all of which considerations have to be taken into account in discussing this branch of my subject, and readers must therefore pardon me asking that my remarks under this heading may be interpreted as having local signification only. What I mean by local in this connection is the south and south-western counties of England.

*Aspects.*—The aspect of all others for the growth of Pears on walls is a west one—a conclusion that I have arrived at after years of experience with trees on all aspects, and without exception all varieties grow and fruit more regularly, ripen, and especially colour better than on any other aspect, not even excepting a southern one. The reason, I think, is sufficiently clear, namely, the lengthened amount of sunshine that this aspect commands over all others; and what is of still greater moment is the lessened intensity of it, so that, if I may so put it, the fruit is gradually ripened, not roasted into ripeness; and to this alone I think is attributable the high colour of fruit grown on this aspect.

*Training on Walls.*—As to form of training for walls I unhesitatingly advise the cordon, or what I shall call treble cordons—that is, a tree with three stems—planted a yard apart, thus allowing a foot for each branch, and by way of increasing the length of stems they should be trained obliquely, say at about an angle of 45°. If a quantity of any one kind of Pear is in demand then there is no better mode of training than the old-fashioned horizontal style.

*Sorts for Walls.*—As regards varieties for growing on walls I have yet to learn the one that does not merit that distinction by fruiting regularly. But it would be a waste of valuable space to give second class kinds such a position. Our own rule in the matter is to entirely exclude early varieties, because they ripen perfectly in the open borders or as cordons. As per fig. 102, p. 488, only mid-season and late kinds are favoured with wall training, and only the very best of these, that is, the largest, handsomest, and highest in quality. Any exception to this rule is only made in respect of very late though small kinds, such as Bergamotte d'Esperen, Knight's Monarch, Josephine de Malines, Glou Morçeau, and Huyshe's Victoria. The following are a few of the kinds that best deserve wall (west) training:—Beurré d'Amanlis, Flemish Beauty, British Queen, Beurré Superfin, Fondante Van Mons, Beurré Hardy, Brown Beurré, Louise Bonne of Jersey, Urbaniste, Beurré Diel, Doyenné du Comice, Durandeau, Maréchal de la Cour, Marie Louise, Pitmaston Duchess, Beurré Clairgeau, Délices d'Hardenpont, Nouveau Poiteau, Van Mons' Léon le Clerc, Chaumontel, Beurré Bachelier, Beurré d'Aremberg, General Todtleben, and Zepherin Grégoire.

*Standards.*—In regard to fruit trees in the open borders the Pear, as requiring the longest season to mature its fruit, should always have the most favourable position, and varieties of a straggling habit of growth should either have plenty of room or else repressive training, as illustrated in fig. 103 and 105. Marie Louise, Josephine de Malines, Beurré Bosc, and Knight's Monarch may be cited as examples of straggling growth. Compact, almost true pyramidal-shaped growing kinds are Beurré de Capiaumont, Huyshe's Victoria, Comte de Lamy, Marie Louise, and Beurré Diel, and these, of course, are best suited for planting in borders of limited width, because, without much labour in the way of pinching or pruning, they are easily kept within restricted lines.

*W. Wildsmith, Heckfield, Hants.*

*(To be continued.)*

## THE UNFRUITFULNESS OF THE PEAR.

It is a generally accepted fact that Pear tree blossoms must be properly fertilised to insure fine fruits that will properly mature in due season. My observation here has been now for some time in direct contradiction with this hypothesis. I have a very tall, large-headed specimen of the old variety Chaumontel, which is about 40 feet in height, and which, owing to its height and isolated situation has to contend against all cold winds and spring frosts which occur. Notwithstanding this I have noted now for a few years past not only that this tree flowers, but that it invariably gives its full crops of fruit. This fact naturally led me to inquire whether this was owing to extreme hardiness or to some other cause, and in the result I have found very many of the

fruits really contain no seeds. Similarly, therefore, as Cucumbers occasionally are found to possess no seeds, though growing to a fair size, &c., precisely as large as seedling fruits do, and appearing as if they must possess them, the Pears upon this tree, somehow or other, show the same peculiarity. Given a show of flower, a crop of fruit is assured accordingly. I need not say this phase in fruit growing is a very acceptable one, and worthy the attention of propagators, did it appear possible to perpetuate it. The pipless fruits are certainly not large, though as the tree is so very large, and necessarily of great age, this in a measure, no doubt, accounts for that fact. Certainly the whole of the crop continues upon the tree until the usual time, showing that in all but seeds the fruits derive all necessary sustenance to the last. When speaking of this matter to Dr. Masters lately, he informed me a permanent pipless variety was grown upon the Continent. Should not British gardeners secure this boon? *William Earley.* [Many varieties occasionally are devoid of seed, but Belle de Bruxelles, or the Poire sans pepins, is always so. The true fruit of the Pear is the core; the fleshy edible portion is nothing but the end of the flower-stalk, which swells and becomes succulent. This may be seen in the specimen shown at fig. 104, and by numerous other specimens figured in these columns from time to time. Ed ]

## TREES AND SHRUBS.

### Picea morinda.

The cone of the above figured recently in the *Gardeners' Chronicle* was quite characteristic of those produced in number on several trees at Penrhyn. This morning, although I examined several cones on three of the largest trees here (they are fully 50 feet in height), I quite failed even in one instance to notice what your correspondent (p. 435) directs attention to. All the cones were perfectly regular in formation, and with no appearance "as if a ligature of varying width were irregularly run round the cones." Very immature trees, or such as are unfavourably situated, often produce malformed cones. If there is anything more than another in the horticultural Press that requires remedying it is certainly the misleading fashion, too frequently adopted, of figuring abnormally large and fine specimens of flowers and fruit. In choosing specimens for drawing I have always been most particular not to take extraordinary, but such as are a fair average in every way, so that the inexperienced reader may not be deceived. The branches of this Spruce are never drooping, but horizontal, with upcurved points; the branchlets, however, droop in a remarkable degree, in fact project at right angles to the branch on the under-side. The cones are invariably produced on the three years old wood, or, in other words, at the joint of the third row of branchlets from the apex. I may here take the opportunity of pointing out that I do not at all agree with the statement made at p. 393, that the cones of this tree are at first erect, but soon become pendent, at least such I have never noticed in the trees here. *A. D. Webster.*

### Hippophae rhamnoides (Sea Buckthorn.)

This is a dwarf dioecious tree or shrub, with small linear leaves, and minute yellow flowers, succeeded by bright orange-coloured berries. It is a native of the east coast of Britain, and is very suitable for planting near the sea as a shelter, as is conclusively shown by the manner in which the trees forming quite a plantation in the neighbourhood of the Bass Rock, and within a few yards of the sea, which forms the eastern bounds of Tyninghame Park, in East Lothian, luxuriate. The mass of silvery foliage as seen under the light of a bright blue sky is very effective in the distance, an effect which as the distance diminishes, is at the present time considerably heightened by the profusion of bright orange-coloured berries, with which the individual shoots or branches are studded. Therefore, it seems strange that a shrub like the one forming the subject of this notice, which not only flourishes at the seaside regardless of being frequently washed, as is the case with the trees at Tyninghame, by the briny spray, but is also a shrub of a highly ornamental character, is not more widely known, and consequently more extensively grown as a shelter in our many places of seaside resort; such, for instance, as the east and west cliffs at Bournemouth, where scarcely a tree or shrub, except the green Euonymus, of the many that have been planted in those bleak situations with a view to affording shelter as much as improving the appearance of the place can be induced to grow in the face of the salt breeze and cutting winds from the sea. It is therefore with a view to bringing under the notice of those of your readers who have to do with the planting and beautifying of certain situations in and about seaside towns the name and character of a shrub (Hippophae rhamnoides), which cannot fail to give satisfaction in such situations, as it is pre-eminently a maritime shrub, that these notes are written in the hope that they may lead to a more liberal and judicious use of the tree in question being made in the places indicated above in the future, and that in consequence spots of vantage-ground which are now undesirable as places of resort to many of those visiting the seaside, by reason of their exposed situation, may be rendered comfortable, and favourite places of resort.

Having referred to Tyninghame, the beautiful residence of the Earl of Haddington, near Prestonkirk, in connection with the Sea Buckthorn, I may be allowed to say that the park, which extends far and wide, is beautifully wooded, and contains fine views of woodland and sea-coast scenery, as well as a series of pleasant walks, leading respectively to positions whence a variety of landscapes, composed of hill and dale, rich in sylvan beauty, and rugged though picturesque sea-coast, with the sea and distant rocks and hills in the background, present themselves in bold relief one to the other, the whole harmonising well with the character of the place.

In conclusion, I may remark that a short distance from Mr. Inglis' house, in the front and rear of which are well cared for flower and kitchen gardens, is a fine specimen Beech, having a clean straight stem for about 50 feet from the base, and a circumference of about 7 feet the entire height. *H. W. Ward.*

### Arbutus Unedo.

Messrs. Veitch send us under the name canariensis, from Combe Wood, flowering specimens of an Arbutus, which we take to be the red-flowered form of the common Arbutus Unedo, with deep rose-pink flowers. It is a very handsome tree or shrub, the dark green of the foliage contrasting well with the reddish flowers. We cite the name under which the specimen was sent to us, but it is by no means the Arbutus canariensis of the *Bot. Mag.*, t. 1577.

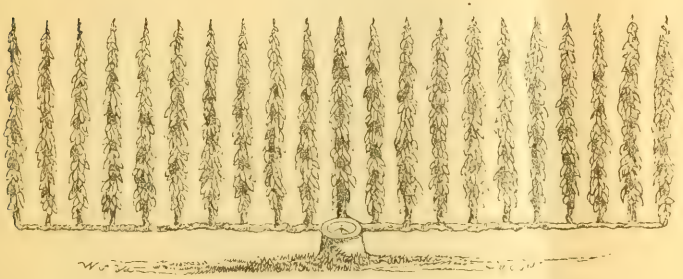


Fig. 105.—Mode of renovating old Pear trees.

## ROOT-PRUNING OF THE PEAR:

Almost the first operations of the original cultivators were on the roots of Pears and other trees. With a keen eye for the best wildling Pears and other fruits, they would naturally exercise their talents in selecting the best strains and transplanting them, either by transplantation or grafting, near to their home; and every step in cultivation has been one also in root-pruning, and this of necessity rather than of choice. The concentration of seeds into beds and borders, cultivated patches, for safety and more rapid germination and moisture, necessitated their speedy transplantation and frequent removal; and any such disturbance of Pear roots proved a root-pruning of the most radical sort.

The nursery treatment of young Pears was and is rough and rude rather than genial and gentle. The roots having little commercial value, were too often treated as worthless; the tops were worth so much a foot or yard, and hence were almost religiously conserved. The Pear, being naturally a deep-rooting plant, suffered more from rough-and-ready and reckless modes of lifting than most other plants. Unless the spade were long and sharp, it missed or failed to cut the roots; nevertheless, the drawer, by a strong vertical pull, or side strain, or various wriggles, was supposed to have heaved the roots of the tree, or snapped them off more or less closely to the base of the bole—either method resulting in samples of root-pruning of the most trenchant sort.

Having destroyed and mutilated the major portion of the roots of Pears by rough-and-ready lifting, a second step was taken in root-pruning by the practice of inlaying the young plants by the heels. It originated at a time when roots were held in little esteem, and hence a temporary interregnum between seed-bed and lined-out rows was accounted of little or no moment; but as the value of roots is more correctly assessed, out of the seed-beds into the row has become the rule in regard to seedling Pear or other trees. Pear plants, whether mere seedlings or those of older growth, inlaid by the heels, rooted with abnormal rapidity, made roots as the proverbial farmer is said to make hay, when the sun shines. And it frequently happened that when the inlaid plants were wanted for lining out, the whole of the earth with which they were covered was filled with a veritable network of young, soft, brittle white fibrils. These not only filled the earth, but interlaced each other in all directions, or the trees were mostly laid in by the heels thickly. However, when the plants were separated the roots were snapped and smashed up and ruined, like delicate glass tubes roughly handled. Other plants were lined out in single file to do battle with the severities of our winter and spring climate either without roots or with the latter in very sorry condition. The survival of the Pears under such severe dual root-pruning, crowded, as a rule, within the limited period of one or at most three months, gave ample proof of wonderful tenacity of vital power. Neither do these two examples exhaust our catalogue of cases of root-hacking or pruning in the history of the Pear or other fruit-trees.

Annually, or biannually, the trees are lifted and lined-out at greater distances, and between most of these liftings and replantings there were other interregnums of inlaying by the heels, and these three were the final liftings, packings, journeyings—inlaying before final planting in their permanent homes or growing quarters. It is hardly to be wondered at that trees subjected to such severe root-pruning not seldom grew so strongly afterwards as to give rise to the adage that "He that plants Pears plants for his heirs." These root hackings and lashings, in fact killed many trees, stunted and cankering many more into uselessness and disease. Nor did these severe methods or accidents of treatment exhaust the harsh treatment of Pears. Unsuitable selection of sorts, sites, and soils, unskilful planting and treatment, irrational top prunings and trainings tended to the misdirection or waste of power, and to check the healthy development of roots of a service-

able character. So numerous and severe were the rigorous measures applied to the Pear, that growth was well nigh stopped, or wholly misdirected. Well nigh denuded of roots, these, so soon as made, bored deeply below, and sent up fishing-rod-like shoots above. Like most extremes, the root hackings and slashings, air dryings, and general neglect, were succeeded by a period of semi-root-growth. Root culture, careful husbanding, was proclaimed as the new gospel of Pear and general fruit culture; therefore roots, before held as little better than shoddy, became the be-all and end-all of fruit culture. "Roots, roots, more roots," was heard in all directions, and the Pear trees possessed of roots all things were possible, hence the rage for deep rich borders, the best loams were even further enriched with a third, more or less, of good farmyard manure.

The excessive stimulation and over-feeding of the roots resulted in Pear timber in plenty, and few or no fruit.

At this stage, with ages of previous experience in Pear treatment and its results to guide them, the principles and practice of modern root pruning were well and surely laid. The chief of these may be briefly stated thus. The modification of the character and function, rather than the mere reduction of the number of the roots, and the establishment of a sure and certain correlation between root condition and fertility of top. The fact that a cut Pear tree or other plant is a unity, as well as to some extent a congeries of independent individuals, in the matter of its buds, has been too much lost sight of. The action of root and top upon each other is reciprocal, Hence the truism "Like top like bottom," is almost absolutely true. And had this been borne in mind during the period of the root culture of the Pear, such success in fertility might have been reached as would have rendered most of our modern root-prunings needless; but instead of that, when roots were long fostered by every available means, the tops of Pears were pruned with greater severity, and hence of necessity became more and yet more sterile. For the richer the root-runs, and the more severe the top-pruning, the less the benefit, or, rather, the greater the evil that comes to them as fruit trees through their liberal equipment of vigorous roots. But let these roots below find their equivalents in superior shoots above, and reciprocity being thus established the long shoots would yield back their acknowledgment in having boughs of mellow fruit.

The second principle of root-pruning should aim at improving the character and functions of roots rather than reducing their number. The majority of the old root-pruners, and not a few modern practitioners, seem to think that the curtailing of an excess of root-force is the be-all and end-all of root-pruning. It is hardly the beginning of it. True, the removal of some roots is mostly the first step in the practice; but this step is as often as otherwise taken, not because there are already too many roots, but too few. We prune for more root-force, not less, and by increasing the number we not only vastly augment the root-force of Pear and other trees, but improve the quality of them, and probably considerably modify and improve the supplies of food they either directly or indirectly formed. This is really the main point. As far as the health and durability of the Pear tree goes, and its capacity to make timber goes, prune its roots not at all. It will also be shown presently that there are certain natural and artificial substitutes for root-pruning that may render it superfluous or even injurious; but, as a rule, and especially with young trees that are to be limited severely as to area, root-pruning is the shortest, safest, and an absolutely sure cut to fertility. There is no doubt whatever that Pear and other trees can be pruned into fertility.

Fortunately, too, for Pear growers, the reciprocity or correlation between root and top is not only a one-sided one. The root takes the initiative in inducing fertility, but once established the top also exerts a fertilising influence on the roots. Fruitful tops strengthen and sustain fibrosity of roots, and as nothing succeeds like success, so there is no aid so potent for fertility as a heavy crop of fruit. In fertility, as in other conditions of plant life and growth, like produces like. Hence, once Pears are root-pruned into fertility, they mostly continue so; and just as the physician ceases his prescriptions when his patients are cured, so the root-pruner should cease his operations on the roots of his Pears, and may, therefore, be accepted as absolute truth.

To insure this fertility, however, the root-pruner must prune for small fibrous roots. The more of these the better, and these are the products of culture as well as cutting. Dressings of maiden loam, new sweet soil, and fostering composts enact and foster the rapid multiplication of fibrous roots. Frequent and successive cutting may occasionally be needful to break up the one fork-like roof into two, four, eight, sixteen, thirty, sixty, or a hundred; and it is only or chiefly in this extreme fibrosity of root that the basis of present and permanent fertility is laid. The fibrous roots result in fruitful tops, the trees are linked together in vital bonds that last as long as the verisimilitude exists between the two; so soon as their fertility is thoroughly established, and has become habitual, then the root-pruner should stop. Strange, however, as it may seem, not a few have failed to do so, and the disastrous results of root-pruning too severely or too long have in not a few instances counterbalanced its obvious and substantial advantages. Pears may speedily be root-pruned into unhealth by continuing the practice after fertility has been established. At times slight prunings may be needful to maintain the trees in bearing condition, but more frequently fertility will reproduce itself; and there are other aids to, or equivalents for, root-pruning in the maintenance of a fruitful state.

Among these substitutes the most potent, as we have already seen, is fertility; poor, dry root-runs are others of considerable potency. How a lean larder can result in full crops of fruit may seem a mystery, but it is, nevertheless, a fact. Pear trees, may be, are often starved as well as pruned into fertility. The lifting of the roots of Pear and other fruit trees nearer the surface has similar results, the additional warmth and more free access of air inducing a fibrous—that is, fertile—condition or state of root. Dry borders are also warmer than wet, and it is no mystery to practical men that though semi-drowned roots might grow wood, they would fail to contribute to the production of fruit. Alien stocks, such as the Quince, Whitethorn, or Medlar, especially the first, have been found to favour fertility. Free-rooting weak-growing Pear stocks raised from the seeds of such Pears as Louise Bonne of Jersey, Winter Nelis, Beurré de Capiaumont, the old Swan's Egg, &c., foster fertility, though not to the same extent as root-pruning.

### Double, or Multiple Grafting,

is another equivalent or substitute for root-pruning. It is found that the introduction of one or more foreign cylinders between the root stock and the fruit-bearing top of a Pear tree exerts a powerful effect on its fertility. The supply of food is doubtless



Fig. 106.—Beurré Clairgeau on the Quince, bush-trained. (see p. 490.)

less, and probably considerably altered, in its passage from the roots to the branches. This seems but an improved mode of ringing and ligatures so generally practised in olden times. The check may be less severe and less injurious, but fertility in both cases alike was or is heightened and hastened by the check. Ascending from operations on the stems to those on the extremity of the tops of trees, there is little doubt that severe and incessant summer pinching may prove somewhat of an equivalent or substitute for root-pruning. The breaking up and reducing the strength of wood in the making is a very different matter, and has diametrically opposite effects on fertility than severe pruning of shoots or branches after they are formed. The former—that is, shoot-pinching—judiciously practised, promotes fertility, severe pruning sterility.

Paradoxical as it may seem, it is as consistent and philosophical as true to add that top extension may exert as potent an influence in promoting fertility as top-pinching. All depends on inclining the balance of

reciprocity between root and top towards fertility. True and copious extension of top also involves great ramification and subdivision of branch. These will have their counterparts in the roots beneath; in fact, by the mechanical obstructions offered to the latter through bad, impervious soils and subsoils, stones, &c., the roots will of necessity be more minutely divided than the tops; and in this extra subdivision will be found the key to the fertility of the grand old Pear trees in gardens and orchards; their fertility is the result of the same principles and laws here set forth as the basis of successful root-pruning. It took them longer to reach it, that is all; and it is to be hoped they will no longer be trotted out as conclusive proofs of the uselessness or folly of root-pruning. Rightly read and interpreted, their fertility but establishes the soundness of the practice they were brought forth to destroy. The annual harvests of lusciousness is the product of reciprocal action and reaction between their far-running roots and wide-spreading branches, and the root-pruned cordon, bush, or pyramid is made and kept fruitful on exactly the same principle.

But while these monarchs of the field or orchard are gradually growing and root-pruning themselves into fertility, it is a great cultural triumph of root-pruning to be reaping a long series of good harvests from small trees. It has been said, with much truth, that all things are possible for him who can afford to wait, and assuredly Pears in plenty are among them; but how few can afford to wait?—and why should any one do so when root-pruning puts into our hands the power of hastening as well as heightening and broadening the area of fertility?

It is difficult to say which of these merits is the greatest. In this age of red-hot haste and hurry-scurry who can estimate the advantage of gathering ripe Pears from late trees two or three years from the graft? Talk of planting Pears for heirs now—plant your Pears on baby's birthday, and the fruit will be ready for him before he has cut all his first teeth.

Root-pruning heightens fertility to the uttermost. Carried to excess the tree dies from exhaustion, virtually droops, and dies beneath its heavy burden. But it ought not to be carried to excess. The skilful root-pruner will prune sufficiently to support a good crop, and will then thin the fruit in proportion to the vigour of the tree. Neither will be root-pruning abreast of any of its substitutes or equivalents. He will also cease to prune, lift, replant, pinch, double-graft, or check growth in any way after fertility is well established. "Let well alone" is his motto—a motto that would have saved thousands of Pear trees, slain by fussy prunings, pinchings, &c., persisted in for years after all need for them had ceased.

By lessening the area of fertility what a boon root-pruning has conferred on amateurs, tradesmen, mechanics, working men in towns and suburbs, as well as in the country. A huge Pear tree is as impossible to millions, and would prove almost as great an incumbrance, as the proverbial white elephant. But these baby Pear trees, root-pruned into fertility, one, two, six, a dozen, a score can be packed into a few yards, and preserved in health and fertility without greatly enlarging their size for a dozen or even a score of years. In smaller areas still it would be easy to sell or exchange the tiny trees as they outgrow their space. But no one who has not tried the *petite culture* of the Pear which root-pruning and its equivalents have rendered possible and easy, can have the faintest idea of its immense capacity for continuous fertility within the compass of the most limited area. But for root-pruning the pot-culture of the Pear, now so popular among amateurs with small or without gardens, would have continued impossible. *D. T. Fish.*

(To be continued.)



Fig. 107.—Pot culture of Pears.

## CULTURE OF PEAR TREES IN POTS.

I am well aware that this system of cultivating the Pear does not meet with universal acceptance; indeed, considerable diversity of opinion exists as to the advantages to be derived from cultivating any class of fruit trees in pots. Most advocates of the system will freely admit that it is not adapted to supply the toiling millions with cheap fruit; but by cultivating three or four dozens of Pear trees in pots, under the shelter of a very cheaply constructed orchard-house a sufficient supply for a family may be produced of superior fruit to any that can be obtained from walls in the majority of British gardens. This statement is not made without a considerable experience, extending over nearly a quarter of a century. When I had charge of the gardens at Loxford Hall we cultivated Pear trees in pots during nearly the whole of the period, and I never saw or tasted better fruit of the choice varieties grown under any other condition. Whenever the fruit was exhibited it always gained a high position, either for flavour or appearance. I have frequently recommended the system, and still adhere to all I have stated of its advantages. A well-known amateur cultivator, G. F. Wilson, Esq., of Heatherbank, Weybridge Heath, can bear even a better testimony than I can. On one occasion he was awarded the 1st prize for a dish of Louise Bonne of Jersey at the Crystal Palace for flavour against thirty-six competing single dishes of any kind. How was the fruit produced? may be a reasonable question to ask. The trees were grown in pots. One Louise Bonne was 5½ feet high and 2 feet in diameter (fig. 107). It was growing in a 13-inch pot, and bore 118 fruits, all of full average size, the largest specimen 5½ inches in length and 9½ inches in circumference.

Another tree bore forty-two fruits, and a third, growing in a 16-inch pot, bore eighty-two fruits.

Specimens of Williams' Bon Chrétien were 5¾ inches in length and 10 inches in circumference.

A dwarf standard of Marie Louise, in a 16-inch pot, 4 feet 10 inches high and 2 feet in diameter, was laden with forty-five Pears, some of which were 5¾ inches long by 8½ inches in circumference.

Winter Nelis, a bush 3 feet 6 inches high and 3 feet through, in a 14-inch pot, ripened seventy-three fruits, many specimens being 4 inches long and 7¼ inches in circumference.

An Easter Beurré, 4 feet high by 3 feet in diameter, in a 15-inch pot, bore twenty-seven fruits, some of which were 5 inches long and 10 inches in circumference.

A loose bush of a Glou Morçeau, 3½ feet by 3½ feet, in a 14-inch pot, ripened forty Pears, which measured on an average 5 inches long by 8¾ inches in circumference.

Maréchal de la Cour, a bush 4 feet high by 3½ feet through, in a 15-inch pot, ripened seventy-seven fruits, 5½ inches long by 9 inches in circumference.

Triomphe de Jodoigne, 3 feet high and 4 feet through, growing in a 15-inch pot, ripened sixty-eight fruits, some of the specimens were 6 inches long by 9½ inches circumference. These were a few specimens selected from a collection of Pear trees grown in pots in Mr. Wilson's garden, cultivated by himself. I allude to them here as an example of what can be done when an earnest amateur takes the management into his own hands. I have also alluded to my own experience as that of a gardener having to study the best method of supplying a private family with first-class fruit. Such examples effectually silence the carping critics, who dismiss the subject with the remark that pot trees are mere toys. A house for Pear trees in pots may contain twice as many as

could be brought to perfection in it. Half of them may be removed out-of-doors about the first or second week in June; where the fruit will ripen later and be quite as good in flavour as that in the house. One of the principal advantages of the system is the certainty of getting a crop. East winds and dull, cold weather at blooming time are completely set at defiance.

The cultural directions are very simple and may be summed up in a few words. I prefer the pyramid form to any other, and purchase two-year-old trees of that form, which have generally a few flower-buds upon them, although no fruit can be expected from such trees the first season. The trees are mostly grafted on the Quince, and are planted into pots from 9 to 11 inches diameter according to the size of the trees. They do not require much pruning. The young wood may be cut back a little, that is all. Pot them firmly in good turfy loam three parts, one part decayed stable manure, ramming the compost in firmly with a wooden rammer.

The trees require an abundant supply of water at the roots as soon as they are growing freely. They will form plenty of blossom-buds during the season, and the year following invariably produce a good crop of fruit. They will not require to be repotted at the end of their first season, but as soon as the fruit is formed, place some rich surface-dressing on the surface of the soil in the pots. I mix up a few barrowloads of the following three weeks before it is required:—One barrowload of loam, one of fresh horse-droppings, and one of malt or kiln dust. This heats violently, and must be turned over daily to prevent its being overheated. Next season the trees may be repotted into larger pots, using the same compost as before. When the trees are in 14-inch and 16-inch pots they do not require repotting for five or six years; all that is required is to dig out some of the top soil with a piece of pointed iron, and replace it with some loam and decayed manure in equal parts. The trees do not require much syringing, as they are not so liable to be attacked by aphis and red-spider as Peach and Nectarine trees. They should be syringed once a day only in hot, dry weather. They also require to be watered at least twice a day in hot weather. Success or failure will greatly depend upon the care with which the water supply is administered. *J. Douglas.*

## PEARS AND STOCKS.

THE undermentioned are found to succeed and do well upon a wall, especially when protected in spring with canvas, viz.:—Bergamotte d'Esperen, Beurré Rance, and Beurré Sterckmanns (are much improved when protected), Baronne de Mello, Beurré Duval, Beurré Bachelier, Beurré d'Aremberg, Beurré Capiaumont, Beurré Hardy, Beurré Six, Colmar d'Eté, Conseiller de la Cour, Doyenné du Comice, Duchesse d'Angoulême, Fondante d'Automne, Huyshe's Prince Consort, Jersey Gratioli, Marie Louise d'Uccle, Napoleon, Olivier des Serres, and Prince Napoleon.

The undermentioned succeed upon the Pear stock as pyramids, viz.:—Althorpe Crassane, Autumn Josephine de Malines, Basiner, Beurré Clairgeau, Beurré d'Amanlis, Beurré de Jonghe, Beurré Diel, Beurré Langelier, Beurré Rance, British Queen, Clapp's Favourite, Comte de Lamy, Doyenné Boussoch, Eyewood, Easter Beurré, Forelle, Fondante d'Automne, General Todtleben, Glou Morçeau, Graslin, Huyshe's Prince of Wales, Huyshe's Victoria, Jargonelle, Knight's Monarch, Louise Bonne of Jersey, Marie Guise, Marie Louise, Passe Crassane, Passe Colmar, Pitmaston, Duchesse, St. Germain, Seckle, Urbaniste, Van Mons' Léon le Clerc, Vicar of Winkfield, Victoria, and Williams Bon Chrétien.

The list I have given of Pears on both Quince and Pear stocks includes sorts which have proved suitable, have succeeded admirably, and been laden with fine fruits. Nothing could exceed the beauty of some of the trees while in bloom—the trees were perfect pictures. Our situation is low and damp, and we have heavy fogs, much rain, and prevailing east winds; for instance, last spring, during March and April, when most of the trees were in flower, the wind was from the east, or north-east, for forty-two days, often accompanied by sleet or rain, the average rainfall here, during the two months named being 3.1 inches, consequently we suffer much from spring frosts, the blossom being often destroyed, but I find, when protected by canvas, the fruit does not become spotted and deteriorated in appearance, and, as a matter of course, keeps much better.

Root-pruning is regularly attended to, a certain number of trees being done each year. The trees are of all ages. The soil is a strong retentive loam resting on clay. *Thomas Jones, Royal Gardens, Windsor, Oct.* 10.

## A DEVONSHIRE GARDEN.

OWNERS of gardens in Devon may be envied for two very good reasons—firstly, on account of the copious yield of large, well-favoured Apples they annually garner; secondly, for the luxuriant growth and wider selection of trees and shrubs allowed by their genial presiding climate. In both these respects there are few better typical examples than Killerton, Sir T. D. Acland's homestall in the basin of the Exe. The soil is an exceeding rich loam, resting upon hard rock or the Red Sandstone.

The orchards contain trees in all stages of growth. From the teeming nature of the soil Apples grafted on Rivers' Paradise stocks have attained the proportions of standard trees on the Crab. The three most useful varieties to name to your readers are, perhaps, Royal Somerset, Ross Nonpareil, and Mère de Ménage. The two first are unflagging bearers, and profitable and desirable sorts. The third, although not so prolific, grows up into a robust tree; its large, brilliantly coloured fruit, which will keep far into the new year, always command a ready sale.

Some of the Pears sent to South Kensington by Mr. Garland have been sensational. He has shown Doyenné du Comice 1½ lb. in weight, and dishes of Knight's Monarch and Winter Nelis so large as to be hardly recognisable. The current year has favoured him well. If he shows at the Congress, his collection is sure to be valuable, so unusually good is the soil. Information about late Pears is frequently requested. Here the three best are L'Inconnue, Bergamotte d'Esperen, and Winter Nelis; Beurré Rance and Ne Plus Meuris are very unprofitable servants, albeit prolific ones. The best of the former I have ever seen were packed away in bracken in air-tight drawers and not opened till Easter. Beurré Clairgeau, on the other hand, comes fairly good, and the Chaumontels are excellent when grown upon a south wall. It is not generally known that by gathering early ripe Winter Nelis can be had in the first half of October. The fruit must be put in a warm kitchen or room and kept unexposed to the air. In this way by successive gatherings this most luscious of all Pears (barring, perchance, Doyenné du Comice) can be had from October to January.

Peach trees on a wall facing more to the east than south were loaded with fine fruit; Dymond and Hale's Early being found second to none for outdoor culture. Gooseberries on a north wall produced edible fruit until the second week in September. Most things are so well done at Killerton that it will not be amiss to mention other *notanda* besides the two strong points enumerated above. Outside, along the front of the vineries, above the sashes, is placed a disused gaspipe, into which have been inserted at short intervals brass jets. This pipe is connected to the main water supply by leaden tubing, so that by the mere turn of a tap the Vine border can be rained upon for as long a period as desired. Simple and effective, was a verdict unhesitatingly arrived at. In the late vineries are two uncommonly fine plants—to wit, Encephalartos Altensteinei, and Platycerium alcicorne. Both are growing in late vineries; the latter is 5 feet through and 6 feet 6 inches high. The compost for it is made up of two-thirds park-loam and one of peat. A Lapageria is planted out in a prepared walled-in border 4½ feet square. It is growing in 20 inches of soil resting upon a rubble drainage. The growth was most luxuriant, and the number of flowers produced from St. Swithin's Day to Yule-tide very large. This was the finest plant I have ever seen. By putting brickwork round the border, planks or iron grating can be spread across for pot plants to rest on; thus no space is lost. That a Lapageria does best when planted few will question, only it must be planted out where the conditions are favourable. A house built on to a north wall will be found very much to its taste.

The trees in the park and grounds are simply magnificent, and the grouping at the foot of the Beech woods above the house richly deserves the visit of your special artist or photographer. At this point compact-growing Conifers, such as Cupressus torulosa and Thuia gigantea, stand out against the forest background. The specimens of the Cypress are giants of their kind. The beds of shrubs on the sloping lawn contain Bamboos, Aralias, Colletias, Desfontainea spinosa, and suchlike tender shrubs, which not only live but flourish in Devonshire. Tasmania aromatica is perfectly hardy on the lawn, in which position Buddleia globosa will also be found useful.

The extent of ground planted with Conifers is large. The collection of species is not large, but the trees are healthier and more robust than those at Bicton. Deodars are fine, and have been numerously planted. The most imposing tree was a pendulous Scotch Fir growing on the lawn near the mansion. Some of the branches hang down as much as 33 feet, and give the old fellow a most singular and handsome garb. A better lawn tree, *ex mea sententia*, than a good Pinus sylvestris is well nigh impossible. Yet what pains have been taken to supersede it with fresh faces. If further proof is needed go to Meikleour, on the Tay side. A thickly branched Araucaria imbricata is 60 feet high. The tallest Thuia dolabrata is 25 feet. Rare as this is it is not so surprising as a Mount Atlas Cedar, which is more than 80 feet in height. This tree, planted in 1809, has a girth of 12 feet 6 inches at more than a yard from the ground. A Lebanon Cedar in the park is as much as 16 feet, but that is not so out of the common. A Tulip tree near the Scotch Fir is also 16 feet in girth, and forms a good companion to it.

Near the kitchen garden is probably as fine a Lucombe Oak, all points taken into consideration, as any in the country. The trunk rises, bare of branches, for about 50 feet; at 3 feet up it girths 13 feet 4 inches. A defeated rival of the same age exists at Carclew, in Cornwall, planted by that good arborist, Sir Charles Lemon. I have, in some measure, spoilt my advocacy by using too many laudatory epithets already, but I must be assertive once again, and say that the planting on the rising ground behind the house is a most brilliant effort of landscape work. Owing to the Press a certain name and fame are easily acquired now-a-days. It would be strange if Killerton House had not obtained a fair meed of both. *C. A. M. C.*

## PETWORTH PARK.

THE Pears are grown here as pyramids on the Quince stock, and are admirable examples of such culture, not being quite so formal as they frequently appear. The following were carrying heavy crops:—Emile d'Heyst, one of the finest autumn Pears, heavily laden with very large fruit; Durandeau, very large and evenly cropped; Beurré Diel, heavily cropped with clean fruit (this sort is bearing heavily this hot season, and the fruit is free from cracks or spots, even on standards); Pitmaston Duchess, a regular crop of very large fruit; Souvenir du Congrès, heavily laden trees of this grand September fruit; standards of Beurré Capiaumont and Catillac, heavily cropped.

But the pride of the gardens is found in the cordon walls, the trees all being trained upright (not oblique), and in most cases they were regularly fruited from base to summit; the fruit was good and clean as I saw it, and now that copious rains have fallen it will doubtless gain size and colour. Easter Beurré did not appear at home in any position, and Napoleon was not happy—but most of the Pears in general cultivation were represented by admirably managed trees, carrying a regular crop. The palm (on cordons) must be given to Pitmaston Duchess, but Duchesse d'Angoulême, Marie Louise, Beurré d'Anjou were grand; Bergamotte d'Esperen, Glou Morçeau, Marie Benoist were excellent; as also Louise d'Uccle, Nouvelle Fulvie, Winter Nelis, and Emile d'Heyst, Madame Millet, a Pear that generally is not good, was cropping heavily, clean well formed fruit, Beurré Bosc, Conseiller de la Cour, Soldat Labourer, Doyenné du Comice, were among the cream of the cordons—and better examples I never yet saw—as candelabra-trained trees. A grand tree of Beurré Rance was remarkable, and this is a Pear that seldom does well; and in the same forms were Fondante d'Automne, Napoleon, doing well on an east wall with Josephine de Malines. One standard-trained Catillac was a marvel of fertility.

Apples do not do so well as Pears, the great drought has affected them, and red-spider has been prevalent, but we noted remarkable specimens of Peasgood's Nonsuch, Waltham Abbey, and Mère de

Ménage on pyramids, and extraordinary fruits of Melon, and Calville Blanc on the walls. Plums were mostly gone, and a few trees of Coe's Golden Drop did the honours for the family; a standard tree of Scarlet Nonpareil was remarkable for an enormous crop of richly coloured fruit. Growers on sandy soil should note this, as generally this is a shy bearer. On the lawn was a fine example of the Sussex Nanny Apple, a rich dessert fruit, that has been neglected, but which for September use is first-rate, and very handsome in appearance. Sturmer Pippin also does well, being eminently happy in a light warm soil.

The Peaches under glass were specimens of successful culture, and it was a treat to see them with the Nectarines on the south wall outside, with rich dark green foliage covering the bricks entirely, and carrying large crops, which struck me would have been much larger in a less dry season. The Grapes were, and had been, fine—a full crop of well finished bunches. But the wonder of the houses is an immense white Ischia Fig, which entirely fills a house 30 × 18 feet, a picture of health and vigour, and crowded with its second crop of fruit in all stages, from the geeen figlets to the luscious splitting morsels of sweetness and flavour. The main stem was of enormous dimensions, and one could almost credit that it was planted in the reign of the great pioneer of fruit growing, Henry VIII., whose grand portrait in the carved room (rich with the priceless work of Gibbon) seems to give colour to the report.

It is scarcely necessary to say that the glass houses contained everything that was needed for such a vast establishment, and each department was conspicuous for good management and care, and a credit to Mr. Breese, the gardener. In the greenhouse I noted a fine mass of Nerine Fothergilli that had apparently not been potted for a dozen years—treatment which seemed to suit this somewhat fickle subject, as shown by several fine heads of its coral-coloured flowers.

In the pits were a splendid set of Pines in all stages of development, beautiful to look on—so clean and vigorous. A young Bougainvillea in the stove was covered with its gay sprays of coloured bracts, of a larger size than is usually seen; and in a pond-like depression was a mass of the American Cranberry, full of fast-ripening fruit—a novel sight. Provision is made to flood this pond at the proper seasons.

I cannot close this notice without reverting to the noble timber trees in the park, the principal kinds being Spanish Chestnut, Beech, Lime, and Oaks, some remarkable examples of which exist. In evergreens there are finely-coloured Golden Queen and Waterer's Hollies, with some fine specimens of the best green forms, such as Scottica, recurva, opaca, and Hodginsii. There is a noble group of Scotch Firs; of Silver Firs there are several examples of massive erect growth, like a man-of-war's masts, and some Cedars of Lebanon, vieing with those on the historical mount, carrying immense boles without a knot or branch.

There is a very large Tulip tree near the mansion, the trunk of which near the turf must be about 24 feet round, and in the woodland walk I noted a very fine Liquidambar, a pleasing contrast to the surrounding timber trees.

Rhododendrons and Azaleas were quite at home, and on the mansion wall were magnificent trees of Magnolia exoniensis, and Photinia glabra. *Visitor.*

## PEARS FOR MARKET.

Our orchards in the Maidstone district contain many old kinds which cannot be named, and which may probably have been planted for perry in times gone by, or they may be merely chance seedlings, but for market work the kinds required are few. Starting with the July sorts the old Green Chisel is the earliest. The Chalk, a yellowish-green sort, is next, and is a local kind, called also the Sweetwater. It is a valuable market Pear, as it is a regular heavy bearer, owing, no doubt, to the fact that the tree recovers itself after the fruit is picked. Doyenné d'Eté, the first really good Pear, succeeds well as a standard tree. The old London Pear, the Lammas, is the next, and from its red cheek and bright yellow colour it is a good "coster's" sort. There is, then, a little break, and September sees the "City" Pear *par excellence* in the markets. The well known Williams' Bon Chrétien is largely planted, as it never fails to command a good price, but the tree is very tender when in flower, and it is not a regular bearer. Such favour does this sort gain in the markets that other sorts of the same season do not sell while it is "in." After September the Beurré de Capiaumont, a pretty russety Pear, comes, and the fertile Aston Town or Summer Crassane are ready. Fertility, which may be called an improved Capiaumont, also claims notice, as it is a most valuable fruit and a constant cropper. In September also the Hessle or Hazel Pear is most lucrative, as it is a very fertile tree; and as it does not readily bruise it can be kept till its almost ripe stage. This is perhaps one of the most beautiful sorts in growth, and when heavily laden, its pendent branches and conspicuous bunches of fruit make a strking picture. The old "Bergamy," or Autumn Bergamot, is still found on very old trees, and is a favourite London Pear, being one of the three-a-penny sort, which is the *acmé* of a coster's wants.

In East Kent, Beurré Bosc, Marie Louise, and Louise Bonne, are well grown, but such Pears require a warm situation, and the rich deep loams of the brick-making country. There are but few winter sorts. Broom Park and Bishop's Thumb are fine croppers, but for profit, Pears are best fit to market from the trees. Kent cannot be considered a Pear country as far as marketing goes, but it is conspicuous in garden fruit. The county lacks the deep rich loams of Hereford and Middlesex; and Plums, Damsons, and Cherries, which succeed on lighter and shallower soils, are preferred. It is astonishing the effect of winter manuring and sheep-folding on the old Pears in orchards, and it is not too much to say that most of our pears are starved for want of proper attention. *George Bunyard, Maidstone.*

# The Flower Garden.

No time should now be lost in clearing, dressing, and replanting the beds with winter shrubs, and spring plants and bulbs. In performing this work now, not only will the garden present a changed and bright appearance, but by being planted early the spring plants become well established, and, therefore, better able to endure the severity of the winter. In removing the summer plants it is always advisable to preserve a few plants of each of the different varieties of Pelargoniums and other useful plants, to be potted singly or planted thickly in shallow boxes, which should then be placed in pit or house, where they can have heat for two or three weeks, till they have made fresh roots and re-established themselves; they then will only require to be preserved from frost and damp. If these plants are not cut back too hard they will be found most useful for planting vases and for filling the centres of large beds, and places where large specimens are required. In preparing the beds for transplanting, it is not desirable at this season, when the soil is light and free, to dig them, but simply to clear off the plants and rubbish, and level the surface. By this means much labour and time are saved, and the condition of the soil is more conducive to the health of the plants during winter than when the soil is rendered light and loose by digging. In heavy soils, however, not only will digging be found necessary and advantageous, but where Violets, Polyanthuses, double Primulas, or any such plants are intended to be grown a liberal dressing of well decayed manure or leaf-mould mixed with sharp sand. Then if not wet the soil should be trodden before planting, and when bulbs are planted much mischief afterwards arises from the holes in which they are planted being filled in with rich light soil or sand, and without the precaution being taken to make the soil surrounding them equally firm with the other parts of the bed. These holes, made by the dibble, form in wet weather easy receptacles for the water to drain into, and frequently are the cause of great destruction to bulbs and other plants.

### Plants and Bulbs for Beds.

For small beds for early flowering the Winter Aconite is very pretty, especially when associated with Snowdrops and early flowering Scillas: Crown Imperials are most effective for centres of large beds and for mixed borders. The Crocus, when planted in masses, is one of the most hardy and also the most brilliant of spring bulbs. Narcissus, Jonquil, and Daffodil are good for early spring gardens, their golden hues being very gorgeous. To succeed they should be planted deep, and be allowed to remain in the ground undisturbed. The more suitable varieties are N. Bulbocodium, poeticus, biflorus. The Tulip, both single and double, must also claim a first place in the spring garden, which cannot be complete without them; if those already mentioned give chiefly the orange tints, the Tulip gives the scarlet, rose, crimson hues. It also extends the period of bloom far beyond those already mentioned. The Hyacinth, with its lovely and varied shades of purple, red, pink, must ever command a prominent position. The Hyacinth when massed in borders produces a charming effect, but for baskets and vases they are particularly suitable. It is more liable to injury from frost than those already mentioned, and requires slight protection during severe weather by placing leaf-mould or similar material over the bulbs. To prolong the season of blooming a few bulbs should be potted at different times, to replenish with as the others are removed. There are many more most beautiful bulbs that can be used for the spring garden, such as the Anemones, the early dwarf Iris, Ranunculus, Dog's-tooth Violets, the Grape Hyacinth; but to be effective the different kinds of bulbs should be planted with great care and due regard to their habits and nature

### Store Houses.

Recently propagated plants should now be safely housed. Pelargoniums winter best on shelves in a cool dry house, damp is their great enemy, and should be guarded against; and Verbenas, Petunias, and Ageratums will require the same treatment for the present—Alternantheras, Coleus, and Iresines a moist heat, a minimum temperature of 60°, if they are to winter well. Any succulent plant of which it is desired to increase the stock should be placed in heat, to induce them to throw out offsets or cuttings. *Wm Smythe, The Gardens, Basing Park, Alton.*

# Fruits Under Glass.

### Strawberries in Pots.

These plants, after developing their growth, will naturally need a resting period. For this object they should now be placed in a cold pit or frame, and be kept much drier at the roots than they have been hitherto; in fact, only sufficient water should be given to prevent them from becoming dust-dry, and the lights should be kept off them whenever it is not excessively wet or frosty. No place in my opinion is so well adapted for wintering Strawberry plants in as cold pits or frames with a floor of coal-ashes, on which to stand the plants at no great distance from the lights, which should only be placed on them whenever rain or frost is severe. If the pots are not plunged in some sort of light material, they should be covered up during very severe weather.

Towards the end of the current month all the plants should be brought together in their winter quarters. Those which are to be forced at an early and intermediate date should have the protection as recommended, but the later ones, in my opinion, do not require it at all. These plants do exceedingly well with considerably less trouble when they are placed entirely out-of-doors, in beds, and even plunged up to the rim of the pots in coal-ashes with the same also beneath them to prevent the ingress of worms. With regard to the best variety for early forcing opinions vary considerably. Black Prince is early, but too small; La Grosse Sucrée is much extolled by some growers, but we have abandoned it for early work because of its acidity when ripened early. Keens' Seedling is still a favourite, and can be depended on when subjected to good management, but taking all points into account, Viscomtesse Hericart de Thury stands pre-eminent in my estimation as being the best of all the old varieties for very early forcing. Our customary practice is to start a batch of this kind early in December; the plants are usually placed on a shelf which commands every ray of sunshine and light, and when these elements abound they get the advantage of a place having the fullest amount of air consistent with keeping up the house to a moderate temperature, and syringing is freely done whenever circumstances admit once or twice a day. *G. T. Miles, Wycombe Abbey.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Oct. 19 | Sale of Bulbs from Holland, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Clearance Sale at the Vauxhall Nursery, Canterbury, by Protheroe & Morris (four days)<br>Pear Conference at the Royal Horticultural Society's Gardens, Chiswick (fourteen days) |
| TUESDAY, | Oct. 20 | Sale of Linums, Tuberoses, Roman Hyacinths, &c., at Stevens' Rooms<br>Sale of Plants, Roses, &c., at Protheroe & Morris'.<br>Sale of Nursery Stock at Joyning's Nursery, Waltham Cross, by Protheroe & Morris' Rooms. |
| WEDNESDAY, | Oct. 21 | Sale of Dutch Bulbs, at Stevens' Rooms.<br>Sale of Nursery Stock at the Manor Lane Nursery, Lee, by Protheroe & Morris |
| THURSDAY, | Oct. 22 | Apple and Pear Show at Exeter (two days)<br>Sale of Established and Imported Orchids from Mr. F. Sander, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Oct 23 | Sale of Established Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Oct 24 | Sale of Dutch Bulbs, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

OUR present number is largely occupied with matters relating to PEARS and PEAR CULTURE, and the subject will be continued in subsequent issues, as it will necessarily be incumbent upon us to report upon the large collections to be brought together at Chiswick next week. The Pear Conference—a misnomer in some respects—is well timed. Rarely has there been so general a crop of Pears throughout the country—rarely therefore, so favourable an opportunity of bringing together and of studying all that pertains to Pears.

It can hardly be expected that the same unlooked-for success which attended the Apple Congress will be experienced on this occasion; nevertheless, the entries are very numerous and the "Conference" is well-timed. Those who look to fruit culture to supplement the deficiencies of agriculture may profit much; they may learn from the exhibition and from the articles we now publish that Pear culture now-a-days is not so risky a matter as it once was—that although the obstacles offered by our climate are not lessened gardeners have found a way round the obstacle. The introduction of the Quince stock *on suitable soils* has rendered Pear culture vastly more certain and more productive, and has caused the old adage to become obsolete. But while strongly advising the farmer to take a leaf out of the gardener's book we as strongly advise him to let it be a leaf and not the whole volume. To drop metaphor, fruit-culture, and more especially Pear culture, must not be depended on as the main source of revenue. As an accessory it may be very useful, but it would, in most cases, be disastrous for a farmer or market gardener to attempt to make it his mainstay. After all, however, fruit-culture is not more risky and uncertain than that of Hops. The beautiful little pyramids which we lately saw in Mr. BUNYARD'S nursery at Maidstone furnish an astonishing spectacle to those who remember the old disheartening proverb, and call to mind the *status quo ante* the introduction of the Quince stock. They would excite the envy of the distressed agriculturists and speculator. But it must be remembered that Pears have, this season at any rate, been a drug in the market, and that it is not every agriculturist who is in a position to give the unremitting personal attention and skill which a RIVERS, a BUNYARD, or a LEE give, in planting and training their trees. A visit to Mr. BUNYARD'S nursery—and the same may be said of many others—is in itself an instructive lesson in watchful care, symmetry, method, and appropriateness. This is only attained by years of personal supervision, and a complete knowledge of the business. Is it likely that a farmer occupied with other matters, or a speculator going into fruit-culture without any previous training, can expect to succeed at once? He must do as the gardener and nurserymen have done—begin at the beginning and go on by degrees. If this cautious method of procedure were adopted fruit culture might be made a very valuable addition to the resources of the farmer, and the disastrous consequences of plunging into an ill-considered venture would be obviated.

As to fruit growing on a small scale in private gardens, the case is somewhat different: the risk is here infinitely less, indeed the art and resources of the gardener, the introduction of the Quince stock, and the selection of suitable sorts have rendered a crop of some sort almost a certainty. In order to help on fruit-culture on the one hand, and to obviate the disappointment just alluded to on the other, we have thought it well to utilise the exhibition of Pears at Chiswick, by the publication of a series of articles from the pens of our best cultivators and largest growers. To the courtesy of these gentlemen we are indebted for the opportunity of laying before our readers an amount of information as to modes of culture and the sorts suitable for different localities, such as we believe has not previously been gathered together.

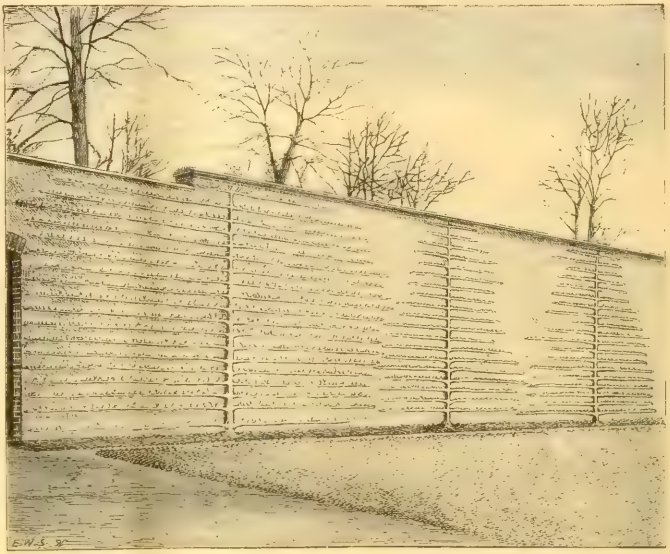


FIG. 108.—PEARS HORIZONTALLY TRAINED. (SEE P. 499.)



FIG. 109.—MARIE LOUISE PEAR ON BOTHY. (SEE P. 499.)

—— The Proposed International Exhibition.—The tone of the conference of the members of the several committees, with the Council of the Royal Horticultural Society, and which was held at South Kensington on Tuesday last, for the purpose of considering the feasibility of establishing an International Horticultural Exhibition on a large and comprehensive scale, in 1887, was, to say the least, not enthusiastic. The matter was carefully laid before the meeting by Sir Trevor Lawrence, the President, and by Mr. W. T. Thiselton Dyer, on behalf of the Council; but a cautious spirit evidently pervaded the meeting, and there was no such eagerness displayed to take the matter up as there was in 1866. Nor is this either to be wondered at or regretted. An exhibition so vast and varied as the one contemplated must needs be, one partly continuous for many months, partly intermittent, cannot be undertaken without much consideration; and hence, after some discussion, it was resolved that the meeting be adjourned for one month, to give the Council the opportunity of inviting the presence at another meeting not merely of the members of the several committees, but of the horticultural world in general, and of ascertaining their views. It seemed to be the general feeling that not mere exhibitions of plants, but of horticultural produce and appliances, home, foreign, and colonial, and of all descriptions—forestry products, illustrations of insect injuries, and diseases caused by fungi — models, artificial flowers—indeed, speaking generally, of anything and everything pertaining to the vegetable kingdom and its products, should be got together; and that as even such a programme would probably not suffice, the exhibition should be tacked



Fig. 110.—Palmette trained tree.

on as an adjunct to some other subject, much as music now is to machinery in the Inventions Exhibition.

If such a programme, even in considerably reduced proportions, is to be carried out, a site must be found, and, above all, money must be obtained. It appears that there is little likelihood of any difficulty at all as to site, while if the Commissioners be really desirous, as it is alleged they are, of helping forward the scheme, there need not be great apprehension as to the needful funds being forthcoming. As to exhibitions of living plants the exhibitors present were very shy of committing themselves, for which caution they are not to blame; but there can be little doubt, we think, that if the scheme is more definitely elaborated, the exhibitors, as a body, will not be found wanting. In the meantime a month is now given for consideration, and during that time we trust the Council of the Society will take every means, by circular or otherwise, of gaining the opinion of the provincial exhibitors and nurserymen, of the members of the several horticultural societies throughout the kingdom, and of all those who may be concerned, directly or collaterally, in the proposed exhibition. When the Council has gained such evidence, and is in a position to state more decidedly what support the Commissioners will give, it will be time to decide what—if anything—shall be done. Probably some of our readers may, in the meantime, be disposed to give their fellows the benefit of their opinions through the medium of the Press.

—— THE ROYAL HORTICULTURAL SOCIETY.—While we rejoice at the spirit manifested by the Council in even suggesting such an Exhibition as that above alluded to, we can but think that there are other matters which in the present state of things are more pressing and of greater importance. First and foremost is the urgent necessity for proper accommodation and meeting places for the Fellows, proper offices for the officials, a proper home for the library. It is probable, however, that all these might naturally be evolved out of the Exhibition scheme, indeed it is certain that the preliminary business of such an Exhibition could not be carried out with such accommodation as the Society now has.

—— THE PROVINCIAL EXHIBITIONS.—While doubts may fairly be felt by some people as to the propriety of embarking in so vast an undertaking as an International Horticultural Exhibition must needs be, there will, we imagine, be no doubt whatever that the time has come, and more than come, to resume those annual provincial exhibitions which were, on the whole, so successful in former years. The experience gained in the past should lead to the avoidance of the blunders that led to the disaster at Preston. Bury St. Edmund's has been mentioned in this connection, and it certainly has claims by reason of the cordial welcome it gave the Society before, if not from mere priority. Still, we can but think that it would be well to hold the provincial show in some larger city, and one more distinctively associated with horticulture. Why not Liverpool? Such a show has never been held in that city, and it seems not unlikely that the Liverpool authorities would, if proper representations were made to them, invite the Society, and perhaps make the Provincial Horticultural Show an adjunct for the time to the great Exhibition of Navigation, Travelling, Commerce, and Manufacture, proposed to be held in that city in 1886.

—— INTERNATIONAL EXHIBITION OF NAVIGATION, TRAVELLING, COMMERCE, AND MANUFACTURE.—This Exhibition, which it is intended to hold in Liverpool next year, has the support of the citizens—so much so that a guarantee fund of over £50,000 has been formed. The exhibition will be opened in the middle of May, and kept open for six months, on the Edge Lane Park estate, about 35 acres in extent. This land, which has lately been acquired by the Liverpool Corporation as a public park, is within two miles of the Exchange, and adjoins Edge Hill Station on the London and North-Western Railway Company's main line. It was thought proper that Liverpool should give to its first exhibition the stamp of its own individuality, and that the second seaport of the world should show a collection illustrating navigation in ancient and modern times. Travelling by land was naturally added, and so the chief feature of the scheme is a "Travellers' Exhibition." As closely allied to this there is also a division for the "Commerce and Manufactures of the World." In this latter section the raw materials of the animal, vegetable, and minerable kingdoms, the processes through which they pass, and the resulting products will be shown. Special prominence will be given to food, drink, and clothing. As no English exhibit will be admitted to the Indian and Colonial Exhibition to be held at South Kensington next year, Liverpool will be the only place where home exhibitors can display their goods. It is calculated that in Liverpool and fifty miles round there is a larger population than in London and fifty miles round it, so there should be plenty of visitors to the Exhibition; moreover, there is a great number of American and other foreign travellers who pass through Liverpool to whom the Exhibition will recommend itself.

—— HORTICULTURAL EXHIBITION IN 1887.—The following note has been sent us for publication:—A meeting of the Council and Committees of the Royal Horticultural Society was held at South Kensington, on Tuesday, the 13th inst., Sir TREVOR LAWRENCE, Bart., M.P., in the chair. The object of the meeting was to consider the advisability of holding an International Horticultural Exhibition at South Kensington in 1887, and it was resolved that, with the view of obtaining a larger representation of horticulturists than was then present, another meeting be held on November 10. The Council invite the co-operation of all who are interested in this matter, and invite them to take part in the proceedings of the forthcoming meeting.

—— THE FRUIT SHOW OF THE ROYAL HORTICULTURAL SOCIETY, OCTOBER 13.—So well did fruit growers respond to the invitation of the Royal Horticultural Society on Tuesday last that the large number of 1709 dishes of Apples and Pears were exhibited, inclusive of non-competing fruit.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The annual dinner of the above is fixed to take place in 1886 on the evening of July 2.

—— HORTICULTURE AND THE DEPRESSION OF TRADE:—Messrs. SMITH & LARKE send us the following:—

"The Secretary of the 'Royal Commission on the Depression of Trade and Industry' has intimated to Messrs. SMITH & LARKE, of Ashford Nursery, that he will be happy to lay before the Royal Commission any information relating to the nursery trade which they think may be useful. That firm will, therefore, be pleased to receive any suggestions for improving the present state of the trade. All communications on the subject should be addressed to Messrs. SMITH & LARKE, at their London house, 14, High Street, Kensington, W."

—— WHO, WHERE, WHAT?—One of our Continental colleagues, speaking of an Orchid, says that it flowered "Chez Emil et Derby à Knowosby." Can it be the Earl of DERBY, of Knowsley, who is intended?

—— NATIONAL CHRYSANTHEMUM SOCIETY.—The autumn general meeting of this Society will be held on Monday evening, October 19, at the "Old Four Swans," 83, Bishopsgate Street Within, City. The President, E. SANDERSON, Esq., will take the chair at half-past 7 o'clock precisely.

—— THLADIANTHA DUBIA.—Mr. LYNCH sends us from the Cambridge Botanic Garden a fruit of this curious yellow-flowered Cucurbit. The fruit is very ornamental, 2⅝ inches long by 1¾ inch broad, elliptical, pointed at both ends, thinly covered with short rough hairs, and deep crimson in colour. At the top of the fruit are the remains of the perianth.

—— AGRI-HORTICULTURAL SOCIETY OF INDIA.—At the ordinary general meeting, held on Wednesday, August 28, Captain J. F. POGSON forwarded, as a curiosity, a hood made from the leaves of the Maue Dhun creeper (Bauhinia Vahlii). It forms an excellent protection from rain for coolies, and lasts out a rainy season; its price was four annas, and the hood is much worn. Mr. A. C. BLECHYNDON, of Doomra Factory, Sitamarhi, sent an exceptionally large specimen of the Jack fruit, one of a pair brought to him on account of their unusual size. The larger of the two was 3 feet in length, 3 feet 5 inches in girth at the thickest part, and 2 feet 10 inches at the thinnest, and weighed over 60 lb. The seed has been sown in the Society's garden, and the plants will be preserved.

—— LORD SUDELEY ON SMALL HOLDINGS.—At a meeting lately held at Tregynon, on Lord SUDELEY'S Montgomeryshire estate, it was resolved to forward a petition to his lordship, asking him "that all industrious and thrifty persons on the Gregynnog estate may have sufficient land allotted to them to enable them to keep a cow, and that the number of small farms should be increased." The following reply from Lord SUDELEY has been received by Mr. BOWEN, chairman of the meeting:—

"Toddington, Winchcombe, Cheltenham, Oct. 2.

"Dear Sir,—I have to acknowledge the receipt of a petition drawn up at a meeting at which you were the chairman, praying that all industrious and thrifty persons on the Gregynnog estate may have sufficient land allotted to them to enable them to keep a cow, and that the number of small farms should be increased. You are probably not aware that on the Gregynnog estate the proportion of small farms is fully maintained, that there are at present no less than seventy-six small holdings under 45 acres, and that of these fifty range from 2 to 11 acres, so that ample scope is given to the smaller tenantry to gradually rise to larger-sized farms. It is, however, perfectly true that there are still several cottages which have little or no land attached. At Toddington, on my Gloucestershire property, all the cottages (numbering about 150) have gardens of a quarter of an acre attached, and an extra quarter of an acre can always be obtained if desired. This principle of granting in arable districts a quarter or half an acre, or instead, where there is pasture available, land under proper conditions sufficient to enable cottagers to keep a cow, is one which I have always been much in favour of, and I am extremely glad to see that there is a wish to have this system more fully carried out. It is not of course possible in every case to give sufficient pasture to keep a cow, as due regard must be paid to the conditions and requirements of neighbouring farms; but so far as I am concerned I can only say that I should be extremely pleased to see no exception to the rule, and in all cases where it is wished, industrious and thrifty persons in cottages on the Grgynnog estate possessed either of half an acre of garden land, or, where possible in pasture districts and where the tenant has sufficient capital, land enough to keep a cow. It will be clearly quite impossible to extend this system hurriedly, but every consideration will be given to carry it out fully as soon as practicable.—Yours faithfully, "SUDELEY.

"Mr. BOWEN."

—— IS A TENANT'S GREENHOUSE A BUILDING?—The following letter has been sent us for publication, and in view of its great importance we solicit the opinions of our readers:—

"On Wednesday, September 30, [I Mr. A. DENT, horticultural builder] was summoned by Mr. ELKINGTON, district surveyor of Penge, to appear at Lambeth Police Court, on a charge of erecting a greenhouse, 12 feet by 8 feet, in the district of Penge, without having given the notice required under the Buildings Act.

"I contended that this greenhouse was a tenant's fixture, and did not come under the Act, being made portable in every respects boarded up to sill of sashes; standing on, but not fixed to another sill or frame at bottom, formed of 7 by 2½ inch deal.

"I was advised to have wheels put on this greenhouse, to save being compelled to comply with the Act, which states that all buildings shall have 9-inch brick walls, with proper footings and concrete foundations, which, of course, I could not carry out, being only a tenant's fixture. Accordingly I had four wheels put on the bottom frame, so that the whole could be moved in one if necessary, or taken apart, and stowed away in a shed if required.

"The result was that Mr. CHANCE (magistrate) decided that this greenhouse, although not connected with the ground either by posts driven in, or by brickwork under, but only laid on top of the earth, was a building within the Act, and gave it as his opinion that even Cucumber frames were not exempt.

"Now, sir, I report this case to you, feeling that it is a matter not to be trifled with, but should be dealt with promptly and decisively, and in the interests of flower growers generally I take the liberty of asking you to give this matter all the publicity possible.

"Having seen the uncertainty which existed among tenants and the gardening papers generally, I took the precaution of employing a first-class solicitor to defend the case, thus incurring considerable expense, the case being adjourned and having to reappear on Saturday;

but it was all no use. I was fined a nominal fine of 5s. and the cost of the summons, with, of course, the privilege of appeal.

"Now this appeal will be of no use to me, but if your readers feel sufficient interest in the cause of tenants' rights, as to having a greenhouse of their own, and will offer some assistance towards the cost of an appeal against this decision, I am quite willing to join in the expense and allow my case to be used as a test case, in the interests of tenants and flower growers generally.

"Should you deem this worthy of insertion, those of your readers who wish to help in this important matter may forward their names, addresses, and amount they promise to contribute, to BASIL E. GREENFIELD, Esq., solicitor, 17, Katharine Street, Croydon, and they will receive an acknowledgment in the paper they choose to name.

"In writing please write the word 'appeal' on outside of envelope."

—— CHRYSANTHEMUM SHOWS. — The Royal Horticultural Society of Southampton will hold a show on November 3 and 4, when liberal prizes will be awarded in leading classes.—Highgate, Finchley, and Hornsey will hold a show for the same flower, and for fruits and vegetables on November 5 and 6, when nearly £70, with Medals and Certificates from the National Chrysanthemum Society, will be awarded. —The second exhibition of the flower will be held in Huddersfield on November 13 and 14; and Stoke Newington will have its Chrysanthemum annual show on November 9 and 10.

—— HACKNEY MICROSCOPICAL AND NATURAL HISTORY SOCIETY.—The Council have arranged for a Fungus foray to take place in Epping Forest, on October 24. The trains will leave Liverpool Street Station at 10.9 A.M. for Chingford, and 2.10 P.M. for Loughton. The route will be through the Green Ride and High Beach to the "Robin Hood" by the early train, where the afternoon party from Loughton can join at from 3 15 to 3.45 P.M. The President (DR. M. C. COOKE, F.L.S), WORTHINGTON G. SMITH, F.L.S., Mr. J. ENGLISH, Dr. H. L. WHARTON, F.L.S., E. M. HOLMES, Rev. J. MCCROMBIE, and GEO. MASSEE, are expected to give their valuable assistance on this occasion. Mr. COLLIS WILLMOTT, F.R.M.S., of The Triangle, Hackney, is the Hon. Secretary.

—— LE JARDIN ALPIN D'ACCLIMATATION DE GENÈVE. — The following is from M. CORREVON:—

"Permettez moi de remercier par l'organe de votre estimable journal les personnes qui ont répondu à votre articles du 11 Juillet, passé relatifs à la question de la protection des plantes Alpines et de notre Jardin Alpin. Bien des personnes m'ont écrit à ce sujet, et je leur ai généralement répondu par l'envoi de notre bulletin et de nos comptes-rendus. Je pense toute-fois qu'il est nécessaire que je fasse connaitre ce fait—c'est que le jardin d'acclimatation que nous avons fondé, et qui est encore de création fort récente, a déjà rendu d'utiles services à la cause que nous défendons. Un grand nombre d'amateurs de plantes, qui les eûssent autrefois arrachées dans les montagnes, se sont adressés au jardin pour avoir des plantes élevées de semis chez nous. C'est là que nous estimons qui doivent se porter nos efforts, et c'est à aider, à secourir le Jardin Alpin de Genève, en devenant actionnaires ou en souscrivant à la liste des donateurs, que sont invités tous les amis de cette belle cause. La flore alpine, acclimatée dans les jardins, offre beaucoup d'attraits, et le peuple Anglais, mieux que tout autre, sait l'apprécier. Notre jardin s'efforcera aussi de développer cette science d'acclimatation et de répandre la connaissance de ces cultures. Notre établissement, bien qu'encore dans l'enfance, a reçu cette année la visite d'un grand nombre d'étrangers, qui nous ont témoigné leur satisfaction pour ce que nous avons déjà obtenu. Nous espérons ainsi faire connaitre et apprécier la flore de nos montagnes tout en empêchant sa destruction. Jusqu'à présent nous avons acclimaté le plus grand nombre d'entre ces plantes par le moyen du semis.

"Recevez, Monsieur le Rédacteur, l'assurance de notre entier dévoûment.

"Le Secrétaire, H. CORREVON, Directeur du Jardin.

"N.B.—Les dons et les demandes d'actions doivent être adressées au Jardin Alpin d'Acclimatation de Genève."

—— GARDENING APPOINTMENT. — Mr. GEO. MARTIN, late Foreman at The Gardens, Danesbury, Welwyn, Herts, has been appointed Head Gardener to J. S. CRAWLEY, Esq., Hockwood Park, Luton, Beds.

## PEARS.

THE photographs from which the engravings on p. 496 were taken were prepared some years ago. The large tree on the left of fig. 108 is a Passe Colmar, the next Glout Morçeau, and the next Beurré Diel. The Passe Colmar has never been very fruitful, the fruit always following the young wood at the extreme ends of the horizontal branches. No matter how the spurs were managed the greater portion of the surface of the tree ran to breastwood. The tree is now undergoing a process of grafting with selected sorts; the experiment so far bids fair to be a successful one. Glout Morçeau and Beurré Diel crop very satisfactorily. The latter is not particularly deserving of a wall, but one does not like removing a tree, as vacant spaces on walls look so bad. With these trees the wall space is now well filled up.

The Pear on fig. 109 is a Marie Louise. It has been a prolific bearer of handsome fruit for many years, but I think I must admit the crop this year to be the best I have ever known upon it. It fruits generally all over the tree. The greater portion of one side of the tree derives a considerable amount of beneficial warmth from the bothy chimney, against which, as may be observed, it is trained. The loosely trained tree in the corner is a Castle Kennedy Fig, now replaced by a Cherry. The old man close by, whose height is 5 feet 8 inches, will give some idea of the height of those buildings.

We have another long Pear wall similarly trained, having a south-east aspect, some of the varieties on which are Beurré Rance, Williams' Bon Chrétien, Marie Louise, Thompson's, Forelle or Trout Pear, Easter Beurré, Glout Morçeau, Winter Nelis, Van Mons' Léon le Clerc, Victoria, Beurré Langelier, Brown Beurré, Beurré d'Amanlis, Louise Bonne of Jersey, Jargonelle, &c. These are this year a more or less excellent crop. Some of these were also more or less addicted to fruiting at the extreme ends, and with a view to obviate this, seeing that the yearly cutting away of the breastwood did not produce on the spurs fruit-bearing buds, but only another formation of wood-buds again to be cut away, I cut away every alternate horizontal branch, and laid in lateral shoots close to the wall, precisely like that known as the Seymour system of Peach training. My object in doing this was in the hope that at the base of these shoots fruitful buds would form and give fruits such as we generally have it always, at the extreme ends of the horizontal branches. The result of my experiment has this year turned out a very happy and beneficial one, for on several of the trees these lateral shoots have been well loaded with fruit—producing a pleasing appearance as compared to having fruit only at the extreme ends of the branches. Of course it may be argued that these lateral shoots may also become barren, like the others, when they become old and the knife has to be applied. The remedy for this will be simply to cut out these old laterals and train in young ones. It is, however, satisfactory to know that our effort in producing fruitfulness has been so far successful. My experiment has been closely watched and freely criticised by practical neighbours, and their coming this year and seeing a fair crop of fruit on these laterals was rather convincing proof of the success of the experiment.

I have no particular faith in root-pruning trees on walls with a view to produce fruitfulness. Fruitfulness is produced by this method at the expense of the health of the trees. Rather, I should advise encouraging a vigorous growth until the wall is covered, and then if fruitfulness does not follow some gentle means of producing it might be tried. *W. Miller, Coombe Abbey Gardens, Warwickshire.*

## GATHERING AND STORING FRUIT.

IT is of the utmost importance to store fruit in a clean and perfectly sweet place; a fruit-room should be as sweet as a dairy. The principles to be kept in view in the construction of a fruit-room are darkness and dryness to a certain extent, and a low and steady temperature of 40° to 45°. Light is not essential. Fruit, while growing on the tree, is perpetually supplied by the stem with water sufficient to replace what is given off by its surface. As soon as the fruit is gathered the source of supply is removed, then with the action of light upon it the fruit loses weight, without being able to replace its loss. It is thus that fruit becomes shrivelled and withered prematurely. Light, therefore, is not essential to a good fruit-room. It is, however, advisable to have some windows, which should be kept darkened, except when storing the fruit or for the necessary inspections of the fruit, which should be frequent, and for the greater facility for selecting the ripest and best specimens. The air should be kept moderately dry, but ventilation should not be used except for the purpose of getting rid of offensive smells arising from decayed fruit.

Great care should be taken in gathering, handling, and storing the fruit, placing each kind by itself and keeping wall fruit apart from standard fruit. Gather the fruit in baskets lined with hay, and place them on the shelves side by side, with the eyes downwards. No fruit ought to be beaten down from or shaken off the trees, all should be carefully plucked and put into the basket, not thrown or tumbled in; they should be then taken carefully to the fruit-room and placed carefully on the shelves. Those kinds that are plentiful may be placed three or four deep on the shelves.

Early Apples are, as a rule, softer in texture than the late keeping sorts, and on that account special care should be taken in handling them. If roughly thrown into baskets or emptied therefrom they are seriously damaged by being bruised; the contusions may not show immediately, but in the course of a few days the fruit will be unsightly and the reverse of acceptable, and it will speedily decay.

Some persons do not know when fruit is sufficiently ripe to gather. The first symptom of ripening is a slight change in colour, followed immediately by the falling of several of the specimens. When this occurs the crops should be examined, by gently lifting a few fruit. If matured they will separate from the trees, and fall into the hand without any twisting of the stalk whatever; if they cannot be taken without breaking the stalk, they are not ready for gathering. When early Apples and Pears are allowed to hang on the trees after becoming quite ripe, the fruits are apt to turn mealy in texture. It is seldom that the whole of the fruit on a tree ripens exactly at the same time. This is often an advantage, as by gathering a few two or three times a week, the produce of one tree—it may be a favourite Pear—is usable over a longer period than would be possible if all were secured at once. Those who have small trees containing choice fruits in the garden can, and should, gather the crops periodically. They will find the period of their use, of particular kinds, that are often, if not invariably, over too soon, materially prolonged. Late fruit of all kinds should be put in place in the fruit-room, from whence they need not be removed until wanted. Early fruit should be placed where they can be taken from when wanted. When the fruit is all gathered the house should be cleaned, the atmosphere should be kept as uniform as possible, the temperature not lower than 40° nor higher than 45° if possible. A few nice dessert Pears and Apples should during the autumn be put periodically into a warm house to ripen. Avoid handling fruit much, the less they are moved about the nicer they look when ripe. *M. Saul, Holgate, York.*

## GARDEN PEARS.

THEIR name is legion, and a source of perplexity to the grower of trees, but to ensure a regular supply a much larger number of kinds is necessary than would be the case if we had sorts which could be depended on for a certain supply; the spring frosts are the great bane of Pears, and, curious to say, those having pendent flowers seem no better protected by the corolla than the upright bloomers.

The introduction of the Quince stock has in the last thirty years revolutionised the growth of Pears, and except in soils where they do not succeed (which are few) garden trees on free stocks are seldom planted. "Plant Pears for your heirs" is no longer a safe proverb, being ousted by "Fruit the first year" under the modern system. It is the opinion of many that the praise of cordons has been over-blatant, and in many cases this is so. They are to be recommended where a variety is wanted in a small space or to cover vacant walls quickly, and perhaps for villa gardens; but the most serviceable tree for general wall or espalier planting are trained trees on Quince, and for choice the candelabra style of training; such can be seen in perfection at Barham Court, and Mr. Haycock, the champion grower, considers the fruit from open trees as large and of better flavour than from a wall. The culture of Pears on the free stock as pyramids or other garden trees generally results in a luxuriant growth of foliage and shoots, with the

minimum of fruit, because the demands on the garden staff will not admit of root-pruning, which must be regularly carried out. A successful example of this operation was mentioned in the *Gardeners' Chronicle* as performed by Mr. Smith, of Kenward Gardens, Yalding, and whose trees I had the pleasure of seeing in full regular bearing. On the Quince stock this work is much facilitated, as the roots are mostly those called fruit fibres, in opposition to growth producers. After two or three vigorous root-prunings, such trees (as an amateur whose trees are the best in England, and who has had them under his care from infancy, says) are conquered, and when once they get into a fertile state they bear so freely that exuberant growth is checked, in fact, the tree is a scientific success, the proper balance having been found between root power and fruit produce. When fruit is set the fruits should be thinned out, leaving only those exposed to the sun and in the best positions, and if the crop is a heavy one, mulching may be carried out, but never without a crop, as unfertility will only be encouraged.

It is lamentable to see in many old walled gardens perfect forests of breastwood with only a few fruit on the ends of branches. Here judicious root-pruning would be well repaid, but if the sort is obsolete the trees can readily be grafted with better sorts, and in two years will commence to bear. Much of this excess of wood growth is owing to the constant manuring necessary for the crops grown on the fruit borders, and the frequent disturbance of the roots. It should be as a law of the Medes that no fruit-tree border should ever be dug within 3 feet of the wall or 6 feet of espalier tree stems. These few remarks would scarcely be complete without a list of the best twenty-five kinds for general garden culture (see pp. 502, 503), and as a rule, where the later and slowly ripening sorts succeed, it is preferable to plant duplicate trees, than to increase the number of varieties. *G. B.*

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St. Ambroise Apricot.—This is a large unevenly-shaped variety, well worthy of being more planted. It seems to form a hardy tree, and can generally be depended upon in most seasons to produce a goodly number of high-coloured fruit. Mr. Webster, of the Gordon Castle gardens, manages his Apricot wall extremely well. He is an advocate of constant root-lifting, and prefers seedling trees. One of his trees, a seedling from Moor Park, and identical with the parent, extends along the wall for 24 feet, with never a sign of decay. It would be valuable information if some of your correspondents were to give their experiences of not only seedling Apricots, but also Peaches. *C. A. M. C.*

# Home Correspondence.

**Satyrium carneum.**—Mr. Webster asks (p. 470) concerning the soil that is best suited for the cultivation of this plant. In its native country it grows in moist sandy soil a few miles inland from Cape Town, and apparently not ascending above 1000 feet on the mountains, so that it is perhaps a little more tender than some of the species. The soil seems to consist of about three parts silver-sand and one part black vegetable loam. For further information Mr. Webster may refer to what I have quoted from a note of Sir John Herschell's on p. 403 of this volume. *N. E. Brown.*

**Covent Garden Prices.**—Under the heading of "Country Growers and Town Salesmen," which appeared in your columns Sept. 26, p. 408, "C.," in a lengthy article, aired a fancied grievance before the public. The article in question, though giving no name, points so directly to us, that we feel compelled to take up the matter on behalf of ourselves and other salesmen whose lot it is to be brought into contact with small and unsatisfactory growers. On July 23 a consignment of 13 dozen Artichokes was received from "C.," whom we assume to be the same as your correspondent. These were a small bluish Artichoke, about the size of the proverbial Thistle, and as valuable. At that time the finest green Artichokes were selling at 9*d.* to 1*s.* per dozen (wholesale), and only limited quantities could be sold at those prices. To our knowledge plenty were uncut by large growers, as they would not repay the trouble of marketing. Other salesmen whom we could mention were also throwing away quantities, not being able to sell them; consequently, we could not dispose of such an extremely indifferent sample as we received, and after offering them for sale for a few days, they were at last thrown away. Our sender was informed of the fact as soon as we saw there was no possibility of effecting a sale, and though "C." states that he received no information respecting them for six weeks after their dispatch, we distinctly affirm that a return note marked "worthless" was sent after a lapse of a few days. "C.'s" insinuation respecting the extent of our business is illtimed, seeking, as it does, to cast aspersion upon the abilities of salesmen whose fault consists in not being able to realise paper prices for goods that might justly be termed rubbish. "C." no doubt will resent having his goods indicted in such terms, for too often does the private grower think his geese swans, and is only too ready to bespatter the salesman when the prices realised do not bear out his views. Should the supposed market prices quoted in many papers by any fortunate and unforeseen circumstances prove to be correct these prices, as a rule, apply to the best produce in the market, grown and packed by practical growers. The private grower may imagine, no doubt, that his goods are quite equal to any grown by professionals, and markets them with the expectation that he will get the same value for them; failing to do so he makes no allowance for his own want of knowledge as regards growing and packing, and casts the blame upon the head of the salesman. *Squelch & Barnham.*

**Chrysanthemum G. Wermig.**—The small flowers sent are of the fine sport from Mad. Desgrange grown out-of-doors. It grows to 6 inches in diameter, and has been blooming with me since the middle of August, going through the frosts well. I find it do very well as a late one, too, if you take the cuttings in June, in fact I had some as late as January last year, which it is of importance to know, as there is scarcely one, even amongst the late ones, which can beat it in colour and elegant form, and certainly not in its abundant flowering. All the plants, and I have nearly 10,000 of them, are literally one mass of flowers, and the sale in Covent Garden Market has been better than any other variety. *G. Wermig.* [Handsome yellow flowers of an early kind, very free in blooming—an acquisition. Ed.]

**Annual Chrysanthemums.** — I enclose a few flowers of the annual Chrysanthemum for your inspection. I find them free bloomers, very useful to cut from, and keep a remarkable time in water after cut. In addition to the above they have just stood three consecutive nights of frost—7° each night—almost unhurt. At dawn this morning it was 25° warmer than yesterday at the same time. *J. Shrimpton, Aston Clinton.* [Showy useful border flowers, some of which had discs of yellow, whilst the rays were either some other shade of yellow or white. Some others were quite double and full. Ed.]

**Larkspurs.**—I presume that it would be difficult to say that our cultivated Delphiniums have sprung from any one species. One of the oldest is, no doubt, the Siberian D. elatum, which was introduced nearly 300 years ago. This is the well-known Bee Larkspur. But is it a native of Siberia, or did it find its way there from the mountains of Virginia and Carolina, and then to Britain? By some D. exaltatum is considered to be identical with D. elatum, but a catalogue published in 1817, and considered to be a very reliable one, makes them to be distinct. Next to D.



Fig. 111.—Beurré Clairgeau: pyramid on quince four years old: from a photograph.



Fig. 112.—Beurré Clairgeau: horizontal espalier on quince four years old: from a photograph. (see p. 499)

elatum in point of earliness of introduction came D. intermedium. These, with D. grandiflorum, D. puniceum, and D. urceolatum, appear to be the only species in cultivation in this country seventy years ago. D. Barlowi and D. Hendersoni, which were in all probability seedling varieties of D. elatum or D. grandiflorum, have, no doubt, been the remote progenitors of some of the finest varieties in cultivation. Later in point of time came the large blue D. formosum, the origin of which is, perhaps, not accurately known; and this fine form appears to have been the forerunner of many of our present striking varieties. They are now very numerous, varied, and wonderfully fine; English and foreign raisers have vied with each other in the production of new forms, and every year brings additions to them. Now the varieties give flowers of many shades, and especially of blue, from clear azure to deep indigo, with pure white, pale lavender, and orange centres; then there are other shades, and combinations of shades—pink, rose, red, bronze, and blue. There are fully double, semi-double, and single varieties, and they vary in the height of growth from 2 to 5 feet. A good selection of fully double flowers

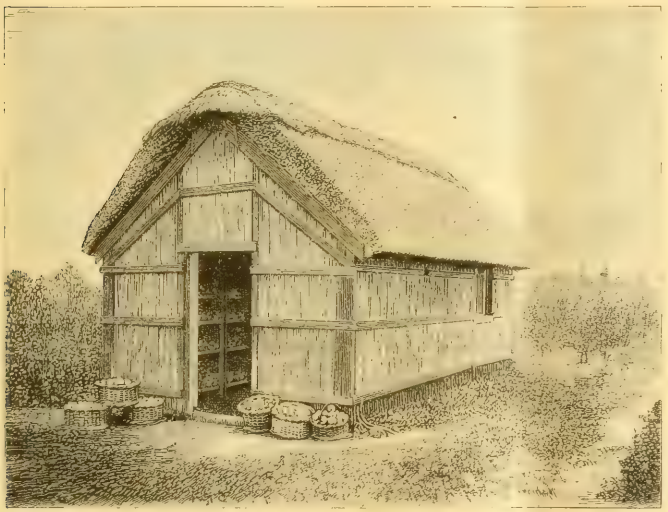


Fig. 113.—Messrs. Bunyard's fruit-room: walls of reed, roof thatched.

will be found in the following:—Alopecuroides, rich blue and bronzy-red; Amadée Hans, bright shining blue, with light centre, flowers very double and well formed; Globe, pale lavender, light centre; Herman Stenger, outer petals blue, centre petals rosy-pink, extra double; Hybridum, rich blue, very fine; La Lorraine, bright metallic blue, fine and distinct; Madame E. Geny, reddish-purple, tipped with blue, centre blue and white, flowers large and fully double; Mons. Rile, rich indigo-blue, with purple centre, extra fine; Mons. Le Bihan, double bluish-lilac, white centre; Prince of Wales, azure-blue, white centre; Ranunculæflorum, rosy-lilac, the edges of the petals broadly margined with cobalt-blue, very double and distinct, and a beautiful variety; and Victor Lemoine, blue with lighter centre, a beautiful variety. The semi-double varieties include Barlowi, dark blue shaded with bronzy-red; Barlowi versicolor, dark blue, suffused with rosy-crimson; Etoile, blue, white centre, very fine; Exquisite, brilliant cobalt-blue, tinted with rosy-lilac, extra fine; Mrs. James Helme, azure-blue and rose; and Phœnix, rich purplish-red and bright violet-blue, large and fine. A selection of thoroughly good single varieties will be found in the following:—Amabilis, azure-blue, changing to rosy-lilac; Beauty of Charrone, rich blue; Conspicua, light blue, white and orange eye; Grandis, light blue; Gloire de St. Maude, brilliant blue, suffused with rosy-crimson, extra fine; Magnificum, blue and red; Madame Chate, porcelain-blue and bronzy-red, very fine; Madame Henri Jacotot, azure-blue, tinted with rosy-pink, distinct and very fine; Nahamah, dark blue, suffused with bronzy-crimson, very fine; Schamyl, dark blue, very handsome; and Wheeleri, dark blue, with bronzy-red centre. The foregoing are intended to be suggestive rather than exhaustive lists. The best way to enjoy the peculiar beauty of the varieties of the Delphinium is to plant a bed of say two dozen plants of distinct varieties; having three lines to the bed, the tallest plants down the centre, the dwarfest at the sides. To do them justice, they want to be in a good loam, enriched with decomposed manure and leaves. The plants root freely and somewhat deeply, and therefore the soil should be trenched to a good depth, and the dung mixed in with it. Clumps can also be placed along the back of the mixed border, according to the height of the variety, and they can be used in many other suitable spots. It is always pleasant to find a mixed border in a kitchen garden, and the Delphinium is always a conspicuous ornament in these, as well as very useful for cutting from. The scarlet Delphinium — D nudicaule—has a marked individuality of its own, and it deserves a place in every collection. Unlike the other Delphiniums, while doing well in the same soil, it forms corm-like roots, which lie near the surface, and during winter these are apt to become exposed, and so in danger of being washed away by heavy rains; therefore, it is a good plan to top-dress the surface over the roots with some soil during the summer, and again in the autumn, so that the plant may be preserved during the winter. Years ago Delphiniums were much more grown in pots than they are now. Good strong plants were selected, and potted in 12-inch pots in a soil made up of equal parts of turfy loam, coarse sand, well-decomposed manure, and leaf-mould. This was done in early spring, and the first shoots were cut back to three or four eyes, which broke strongly again, and any shoots thrown up directly from the roots were also stopped, and in this way good bushy specimens were formed. The plants were started into growth in a gentle heat, and then gradually hardened off, and brought on into flower in the open air. It is scarcely necessary to mention that the Delphinium can be propagated by division of the roots, and also by means of cuttings made of the young growths thrown up at the end of the summer. The Delphinium seeds freely, and it is very interesting to raise seedlings. It is well to sow the seed as soon as gathered, as it is found by experience that if kept long it does not germinate so freely. Some shallow wooden boxes, drained with broken crocks, and some moss laid over them, are well adapted for sowing the seed. After being filled with a good and rather light gritty soil the seeds should be scattered thinly over the surface, then covered to the depth of an eighth of an inch, and the whole gently pressed down. Then the boxes can be placed in a cold frame, raised on inverted flower-pots, or stood on pieces of slate, to prevent the worms working up into them, and disturbing the seeds. Some patience is necessary, as it is found the seeds of some of the sorts will not germinate until nearly a year afterwards. The boxes should be kept free of weeds, and the surface gently stirred occasionally. The annual Larkspurs are not so well appreciated, or so much grown, as they deserve to be. The branching Larkspurs are doubtless improved varieties of the British field Larkspur, D. consolida. They grow somewhat tall and branch freely, producing many flowers, and there are now several pretty varieties. The progenitor of the fine German Larkspurs is, it is believed, the Swiss D. Ajacis. By means of careful selection there are now something like five different types with their varieties, viz., the Dwarf Rocket, Stock-flowered; Emperor, Candelabrum, and the tall Hyacinth-flowered. All these are very fine, and show the results of many years' careful selection both in this country and abroad. Seeds of these can be sown in the open ground in spring in a good free soil, and the plants thinned out, so as to allow ample space for the development of each. There is a curious legend referring to the origin of D. Ajacis (Ajax), which is given by Mr. Folkard in his book on *Plant Lore*, &c. "Ajax, the son of Telamon and Hessione, was, next to Achilles, worthily reputed the most valiant of all the Greeks of the Trojan War, and engaged in single combat with Hector, the intrepid captain of the Trojan hosts, who was subsequently slain by Achilles. After the death of Achilles, Ajax and Ulysses both claimed the arms of the deceased hero. The latter was awarded them by the Greeks, who preferred the wisdom and policy of Ulysses to the courage of Ajax. This threw Ajax into such a fury, that he slaughtered a flock of sheep, mistaking them for the sons of Atreus; and then upon perceiving his error, stabbed himself with the sword presented to him by Hector—the blood spurting from his self-inflicted death-wound giving birth as it fell to the earth to the purple Delphinium, which bears upon its petals the letters at once the initials of his name and an exclamation of grief at the loss of such a hero." Those who have eyes to see it can read upon the petals the letters A. I. A., and which the botanists term Delphinium Ajacis—truly a flower upon which the name of a king is written. In conclusion it seems superfluous to allude to the value of the Delphinium for cut purposes; but now that collections of cut blooms of hardy flowers figure in most schedules of prizes, the Delphinium is one of the most valuable and effective subjects that can be grown for this purpose. But few other hardy flowers supply such rich hues of blue and violet. *R. D.*

**Disa macrantha (D. crassicornis).**—I am sorry Mr. Burbidge should be so offended with me for trying to answer his original question as I thought he wished it answered. I understood that he wished to know the name of the plant represented in a sketch of Mr. Sanderson's under the name D. macrantha, a copy of which, made by Mr. Burbidge, is in the Kew herbarium. I replied that I believed this drawing to represent D. crassicornis, but that the flowers were larger and more highly coloured than represented in that species as grown here, but whether the large size and heightened colour of the drawing is real, or due to the imagination of the artist, I could not tell. I can now, after another careful examination, only repeat that my firm conviction is that the drawing in question is an inexact and possibly exaggerated representation of Disa crassicornis. Neither can I do more than repeat what I said concerning the true D. macrantha, Swartz—namely, that up to the present time it is unknown what plant is intended by this name; certainly it is not the plant represented by Mr. Sanderson's sketch; and the plant Mr. Burbidge alludes to as being in the British Museum, collected by Cooper, in Caffraria (if I am right in supposing he means Cooper, No. 1291, which was erroneously distributed as D. macrantha), is Disa crassicornis, Lindl. *N. E. Brown.*

## NOTES FROM THE PEAR-GROWING DISTRICTS.

BERKS.—The following varieties of Pears in good condition, and bearing fine crops on splendid young trees, were observed at Benham Park, Newbury, the seat of Sir Richard Sutton, Bart., viz :—Glou Morceau, Beurré Rance, Beurré Diel, Marie Louise, General Todtleben, Pitmaston Duchess, Duchesse d'Angoulême, Winter Nelis, Passe Colmar, Beurré d'Aremberg, and others, some being horizontally trained, others fan-trained—Mr. Howe, the gardener, preferring the latter style of training, especially for those Pears having a slender habit of growth. *Y.*

CHESHIRE.—We now send you a list of the Pears which seem to suit our climate best. We may remark that this is not a very good Pear country (we mean for standard or orchard), and for some years past the crops have been very poor—nearly a failure, in fact :—

Autumn Bergamot, excellent : too hardy Pear or Quince.
Beurré d'Amanlis, excellent : forms a grand pyramid on Quince or Pear.
Beurré de l'Assomption, a very good early Pear.
Baronne de Mello, an excellent late autumn Pear. Grows well on Quince.
Beurré de Capaumont, very free an l hardy, a most useful Pear here.
Beurré Diel, very fine, but requires a wall to do well.
Beurré Superfin : this is one of our best Pears.
Citron des Carmes : with us this is an excellent early sort.
Comte de Lamy, of first-class quality ; tree hardy, good bearer.
Jargonelle, ripens well on standards.
Louise Bonne of Jersey, perhaps the best Pear grown here, hardy, free and in every way first-rate.
Marie Louise, tree hardy, blossom tender ; seldom produces crop except on wall.
Marie Louise d'Uccle, hardy, free bearing, and excellent : a most desirable Pear.
Pitmaston Duchess, large and fine, but requires a wall here.
Seckle, first-rate, hardy and free bearing.
Suffolk Thorn : this is a hardy, free growing and bearing sort, and well deserving a place.
Summer Doyenné : this is a delicious early Pear, very fine ; does well on Quince.
Swan's Egg, tree very vigorous, bears well : a useful Pear.
Thompson's, a hardy free growing sort, and of first-rate quality.
Williams' Bon Chrétien : this is one of our most useful and reliable sorts.

**The above we consider the best twenty Pears grown in this neighbourhood. There are of course many excellent Pears besides these, but some are tender as trees, others tender in blossom, and many requiring walls, which are not worth extensive cultivation. The following have done reasonably well here :—Durandeau, Beurré Hardy, Easter Beurré, blooms early, generally killed by frost ; Flemish Beauty, General Todtleben, Glou Morçeau, bears well, but does not ripen thoroughly ; Jersey Gratioli, Bergamotte d'Esperen, bears well, but requires a wall and a good climate.** *James Dickson & Sons, Newton Nurseries, Chester.*

—— The following Pears succeed well on Quince, bear well, and ripen their fruit on the open quarter in this nursery :—

| | |
|---|---|
| Louise Bonne of Jersey | Soldat Laboureur |
| Beurré d'Amanlis | White Doyenné |
| Williams' Bon Chrétien | Citron des Carmes |
| Jargonelle | Doyenné d'Eté |
| Marie Louise d'Uccle | Fertility |
| Comte de Lamy | Beurré Diel |
| Beurré d'Aremberg | Beurré de Capiaumont |
| Beurré Superfin | Beurré Clairgeau |
| Alexandre Lambre | |

**The following bear well on the Quince, but rarely ripen their fruit satisfactorily unless on a wall :—**

| | |
|---|---|
| Doyenné du Comice | Glou Morceau |
| General Todtleben | Chaumontel |
| Bergamotte d'Esperen | Beurré Bachelier |
| Duchesse d'Angoulême | Maréchal de la Cour |
| Pitmaston Duchess | Easter Beurré |

**Few Pears bear well in our cold soil on the Pear stock (in open ground), the fruit generally being small, unless in hot dry seasons. The remarks apply only to our cold damp soil. The following do fairly well on standards for orchard :—**

| | |
|---|---|
| Hessle | Marie Louise d'Uccle |
| Louise Bonne of Jersey | Fertility |
| Beurré d'Amanlis | Alexandre Lambre |
| Doyenné d'Eté | Seedling Pergamot (Rivers) |
| Citron des Carmes | |

*F. & A. Dickson & Sons, Chester.*

DEVON : *Killerton.*—I send you a list of the Pears we grow, with a description of their fruit-bearing characters, and the stocks on which they are grown :—

PEARS ON PEAR STOCK.

| | |
|---|---|
| Beurré Rose—good bearer | Bon Chrétien (Williams')—good bearer |
| ,, d'Amanlis — good bearer | British Queen—very shy bearer |
| ,, Diel—good bearer | Easter Beurré—good bearer |
| ,, Superfin—fair bearer | |

Pears on Pear Stocks—*continued.*

| | |
|---|---|
| Josephine de Malines—good bearer | Passe Colmar—good bearer |
| Glou Morceau—fair bearer | Pitmaston Duchess—good bearer |
| Marie Louise—shy bearer | Thompson's—shy bearer |
| Monarch (Knight's)—great bearer | Van Mons' Léon le Clerc—shy bearer |
| Ne Plus Meuris—great bearer | |

PEARS ON QUINCE STOCK.

| | |
|---|---|
| Bergamotte d'Esperen—good bearer | Gansel's Bergamotte—good bearer |
| Beurré Bachelier—fair bearer ; often cracks | General Todtleben—shy bearer |
| ,, Clairgeau—great bearer | Gratioli—good bearer |
| ,, d'Aremberg—fair bearer | Huyshe's Victoria—good bearer |
| ,, Easter—good bearer | Jargonelle—good bearer |
| ,, Gutfeil—shy bearer | Josephine de Malines—good bearer |
| Chaumontel—good bearer | L'Inconnue—good bearer |
| Comte de Lamy—great bearer | Louise Bonne of Jersey—good bearer |
| Conseiller de la Cour—fair bearer | Madame Treyve—good bearer |
| Crassane—good bearer | Verulam—good bearer |
| Doyenné du Comice—good bearer | Vicar of Winkfield—good bearer |
| Duchesse d'Angoulême—shy bearer | Winter Nelis—good bearer |
| Eyewood—great bearer | Zepherin Grégoire—good bearer |

*John Garland, Killerton, Exeter.*

ESSEX.—The most suitable Pears in this district are the following :—

PEARS, STANDARDS OR PYRAMIDS, ON THE PEAR STOCK.

*July.*—Doyenné d'Eté, Citron des Carmes.
*August.* Jargonelle, Beurré Giffard, Clapp's Favourite, Beurré.
*September.*—Bon Chrétien (Williams'), Summer Beurré d'Aremberg, Beurré d'Amanlis, Madame Treyve, Colmar d'Eté, Jalousie de Fontenay Vendée.
*October.*—Fondante d'Automne, Fertility, Beurré Hardy, Hessle.
*November and December.*—Marie Louise d'Uccle, Emile d'Heyst, Winter Nelis, Beurré d'Aremberg, Josephine de Malines.

**Pears on the Pear stock are so long in bearing when planted as pyramids or standards that the result is often disheartening. The following are selected because they are comparatively early producers :—**

PEARS ON PEAR STOCK FOR WALL.

*July.*—Doyenné d'Eté, fruit small, but very productive.
*August.*—Jargonelle, Beurré Giffard, Clapp's Favourite.
*September.*—Bon Chrétien (Williams'), Beurré d'Amanlis, Madame Treyve, Beurré Superfin, Souvenir du Congrès.
*October.*—Louise Bonne of Jersey, Fondante d'Automne, Beurré Hardy, Gansel's Bergamot, Brown Beurré, Marie Louise, Beurré Bosc.
*November and December.*—Glou Morçeau, Pitmaston Duchess, Doyenné du Comice, Duradeau, Marie Louise d'Uccle, Emile d'Heyst, Beurré Diel, Beurré d'Aremberg, Marie Benoist, Monarch (Knight's).
*December to March.*—Passe Crassane, Bergamotte d'Esperen, Easter Beurré, Ne Plus Meuris, Beurré Rance, Olivier des Serres.

PEARS ON QUINCE STOCK.

*July.*—St. Swithun's, Doyenné d'Eté, Citron des Carmes.
*August.*—*Jargonelle, *Beurré Giffard, *Clapp's Favourite, Beacon.
*September.*—*Bon Chrétien (Williams'), Summer Beurré d'Aremberg, *Beurré d'Amanlis, Madame Treyve, *Beurré Superfin, Colmar d'Eté, *Souvenir du Congrès, Jalousie de Fontenay Vendée, Fair Maid, Hogg.
*October.*—*Louise Bonne of Jersey, Fondante d'Automne, Gratioli, Fertility, *Beurré Hardy.
*November.*—Thompson's, *Conseiller de la Cour, Baronne de Mello, Glou Morçeau, *Pitmaston Duchess, *Marie Louise, *Doyenné du Comice, *Duradeau, *Emile d'Heyst, *Duchesse d'Angoulême, *Gansel's Bergamot.
*December.*—*Beurré Diel, *Beurré d'Anjou, *Beurré d'Aremberg, *Passe Colmar, *Princess.
*January and February.*—Winter Nelis, Josephine de Malines, Iris Grégoire, *Marie Benoist, *Passe Crassane, *Monarch, *Bergamotte d'Esperen, *Nouvelle Fulvie, *Prince Napoleon.
*March.*—Easter Beurré, *Olivier des Serres, *Ne Plus Meuris, *Beurré Rance.

**The above sorts will grow equally well as cordons, espaliers, bushes, and pyramids. Those marked * are large, and suited also for espaliers and walls.** *Francis Rivers, Sawbridgeworth.*

HEREFORDSHIRE.—We beg to hand you a list of desirable Pears for Herefordshire ; our soil does not suit all Pears, and in planting a good quantity of finely pulverised bones should be added, as we find bones in this form suit all crops, either trees or agricultural produce :—

| | |
|---|---|
| Andrews's Pear | Durandeau, ditto |
| Aston Town, ditto | Fertility, Quince and Pear |
| Belle Jersaise d'Hiver, Quince | Flemish Beauty, ditto |
| Bergamotte d'Esperen—Quince and Pear | Cauillac, ditto |
| Beurré d'Amanlis, ditto | Gratioli of Jersey, Pear |
| ,, d'Aremberg, ditto | Hessle, Pear and Quince |
| ,, Bachelier, ditto | Jargonelle—Pear |
| ,, Clairgean—Pear | Josephine de Malines—Pear and Quince |
| ,, Easter Pear and Quince | Madame Treyve, ditto |
| ,, Ballet Père, ditto | Marie Benoist, ditto |
| ,, Capiaumont, ditto | Maréchal de la Cour, ditto |
| ,, Diel, ditto | Marie Louise d'Uccle, ditto |
| ,, Goubault—Quince | Monarch (Knight's Pear. |
| ,, Rance, Pear | Nouveau Poiteau—Quince and Pear |
| ,, Hardy — Pear and Quince | Ne Plus Meuris Pear |
| Comte de Lamy, ditto | Pitmaston Duchess—Quince and Pear |
| Doyenne Boussock, ditto | Summer Doyenné—Pear |
| ,, du Comice, ditto | Uvedale's St. Germain, ditto |
| Duchesse d'Angoulême, ditto | Williams' Bon Chrétien, Quince and Pear. |

**Louise Bonne of Jersey and Glou Morçeau canker badly: of little use.** *The Cranston Company, Hereford.*

MESSRS. LANE & SONS' NURSERY.—The celebrated nurseries of Messrs. Lane & Sons, at Berkhamstead, have long been famous, not alone for one class of plants or productions, but for several. It will be within the recollection of the older men in the profession, when the firm was well known as possessing the best collections of herbaceous plants, and Pansies especially, to be found in the home counties. But that was long before the public had become tired of the monotony of bedding out. Pears are not largely grown here, the district being cold and the soil unsuited to most kinds. Few standard trees are found in the extensive orchards belonging to the nursery, of which there are three, and what varieties are grown for the purpose of obtaining fruit are worked and grown as oblique cordons, the edges of the orchard quarters being planted with them. Early varieties are mostly made use of for this purpose, the late-maturing, long-keeping kinds seldom attaining perfection. The sorts are—Citron des Carmes, Doyenné d'Eté, Gratioli, Louise Bonne of Jersey, Marie Louise d'Uccle, Souvenir du Congrès and Seckle. The list published by the firm contains less than four dozen kinds, but these are the recognised good ones, which are to be found in most gardens, and which are found to bear well, either as bushes, standards, espaliers, or wall-trained. The following is the list of varieties (exclusive of those mentioned previously) that are grown for sale, and which may prove of some value to persons residing in hilly districts and on cold soils :—

| | |
|---|---|
| Bon Chrétien (Williams') | Passe Colmar |
| Brookworth Park | Pitmaston Duchess, or Williams' D. d'Angoulême |
| Brown Beurré | Seckel |
| Catillac | Souvenir du Congrès |
| Chaumontel | Uvedale's St. Germain |
| Citron des Carmes | Vicar of Winkfield |
| Doyenné d'Eté | Victoria (Williams') |
| Doyenné du Comice | Winter Nelis |
| Duchesse d'Angoulême | Alexandre Lambre |
| Durandeau | Althorpe Crassane |
| Easter Beurré | Autumn Bergamot |
| Gansel's Bergamot | Bergamotte d'Esperen |
| Glou Morçeau | Beurré Bachelier |
| Gratioli | ,, Clairgeau |
| Hacon's Incomparable | ,, d'Amanlis |
| Jargonelle | ,, de Capiaumont |
| Josephine de Malines | ,, de l'Assomption |
| Knight's Monarch | ,, Diel |
| Louise Bonne of Jersey | ,, Hardy |
| Madame Treyve | ,, Rance |
| Marie Louise | ,, Superfin |
| Marie Louise d'Uccle | |
| Ne Plus Meuris | |

JERSEY.—There are many varieties of Pears comparatively worthless for general cultivation. Nurserymen keep them in stock, as they are occasionally inquired for. I send you a catalogue on which I mark the varieties generally grown here in quantity, all of which are acceptable varieties and succeed one another in their periods of maturity. The question of quality is the result of soil, whilst size is attainable by careful pruning, thinning, and manuring. The Chaumontel Pear, which is most grown here, surpasses all others as to quality in the months of November and December. I think no fruit equal to a good specimen of it. It requires a rich, moist soil, to bring it to perfection, and fine fruits often weigh from 12 to 20 oz. Sometimes extraordinary specimens weigh as much as 24 to 30 oz. each. The Pound (Catillac) Pear, and the large Belle de Jersey, Belle Angevine or Uvedale's St. Germain, are the culinary Pears best worth growing—the former being best for flavour, whilst the latter is the largest and finest looking Pear grown, ranging from 16 to 50 oz. in weight. I have seen larger specimens, but they are unusual. The trees of both these varieties are of vigorous habit of growth, and will answer to any amount of manuring and thinning, if large fruits are desired. They require sheltering situations, as from the great weight of the fruits they are liable to be blown down by the wind. The flesh of a well matured Pound Pear becomes red in cooking, and was described to me by an epicure as being "both meat and drink," and of excellent quality. The Madeleine, or Citron des Carmes, is our first dessert Pear, and ripens in July followed by Mouille Bouche, Jargonelle, Williams' Bon Chrétien, Beurré d'Amanlis, Louise Bonne, Marie Louise, Beurré de l'Assomption, Conseiller de la Cour, Beurré Diel, Doyenné du Comice, Crassane, Chaumontel, Glou Morçeau, and Easter Beurré ; and in this collection of fifteen varieties we have the *crême de la crême* of Pears generally cultivated. Many other varieties are acceptable, but not so worthy of general cultivation. *Charles B. Saunders, St. Helier's.*

KENT.—The following Pears are most suitable for gardens in the warmer districts of Kent :—

*July to August.*—Beurré Giffard, medium size—best of the earlies; Jargonelle, medium size—bush on Quince or wall.

*September.*—Souvenir du Congrès, very large—a constant bearer; William's Bon Chrétien, very large—best on Quince stock pyramids; Triomphe de Vienne, very large—exquisite flavour, fertile; Madame Treyve, medium—of honeyed sweetness, fertile; Fondante d'Automne, medium—most fertile, exquisite flavour.

*October.*—Louise Bonne of Jersey, medium—prolific on Quince; Marie Louise, medium—best flavour from open trees; Pitmaston Duchess, enormous—fertile and handsome; Emile d'Heyst, medium—very fertile, delicious.

*November.*—Beurré Superfin, large—exquisite flavour; Beurré Hardy, medium—fertile, rich flavour.

*December.*—Winter Nelis, small—best on wall; Thompson's, medium—among the best, shy bearer; Vineuse, large—good bearer, very rich; Doyenné du Comice, large—grand and fertile; Monarch (Knight's), medium—very rich, best from open trees.

*January to March.*—Duchesse de Bordeaux, medium—keeps well, rich flavour; Nouvelle Fulvie, large—best on wall, fine; Josephine de Malines, small—best on pyramids on Quince; Marie Benoist, very large—most delicious; Olivier des Serres, small—a Bergamot, of delicious flavour; Incomparable, small—very delicious; Bergamotte d'Esperen, medium—worth a wall, very fertile, and good for a late sort.

**It is often said that pyramidal trees are over-pruned, the examples figured are natural pyramids, partly pruned—such are objects of beauty and utility.** *Geo. Bunyard, Maidstone.*

MIDLOTHIAN.—The following list of Pears has been kindly furnished by Mr. Dunn, of Dalkeith Gardens, and should be found useful for those planters of the fruit residing in the colder parts of the country, where some of the finest varieties of Continental origin do not usually succeed in any position in the open air:—

TWELVE BEST DESSERT PEARS IN THE ORDER OF RIPENING.

1, Jargonelle, wall or standard—free stock; no good on Quince, good from standards; neat early Pear. 2, Williams' Bon Chrétien, wall, bush, or standard—free and Quince stocks always fine; very good from standards. 3, Beurré d'Amanlis, wall, bush, or standard—free and Quince stocks; best on free stocks. 4, Louise Bonne of Jersey, wall, bush, or standard—free and Quince stocks; best on free stock. 5, Thompson's, wall and bush—free and Quince stocks; very fine, but not always a sure bearer. 6, Marie Louise best all-round Pear), wall or standard free stock only; very good as a standard, not good as a dwarf tree. 7, Winter Nelis, wall and bush—free and Quince stocks; best on wall; rather small, but delicious. 8, Napoleon, wall, bush, or standard—either stock; equally fine from wall and standard. 9, Hacon's Incomparable, wall, bush, or standard—free and Quince; best from free stock; very good from standards. 10, Beurré Diel, wall, bush, or standard—free and Quince; best from free stock; best on a wall. 11, Glou Morgeau, wall, bush, or standard—free and Quince; best on a wall, but very good on standard. 12, Easter Beurre, wall, on bush—free and Quince; keeps later and equally good from bush.

CULINARY PEARS.

1, Catillac, wall, bush, or standard—either stock; best on free stock; does well on standard, need not get a wall. 2, Bellissime d'Hiver, wall, bush, or standard—either stock; best on free stock; very good. 3, Black Worcester, wall, bush, or standard—free stock; good.

**Mr. Dunn remarks that in ordinary seasons "all the Pears mentioned, except Thomson's, Winter Nelis, and Easter Beurré, do well here as standards; and the fruit they produce is generally better flavoured than from wall trees, although in most instances slightly smaller. Many other sorts are grown, some of them very good and useful—such as Brown Beurré, Beurré Bosc, Doyenné du Comice, Josephine de Malines, Comte de Lamy, Jersey Gratioli, Beurré Rance, Matthew's Eliza, Passe Colmar, Doyenné d'Eté (very early); Muirfowl Egg, Ne Plus Meuris, Hessle (very free-bearing as a standard); Duchesse d'Angouleme, Beurré Superfin, and others too numerous to mention; but the twelve dessert Pears named in the list are the best here for a continuous supply of first-rate Pears from August to March, or during the season of good Pears."**

SUSSEX.—In the Horsham district Pears grow well, as do likewise Apples, superb examples of which are frequently witnessed at metropolitan shows. We are indebted for this list to the kindness of Mr. Sidney Ford, the experienced gardener to W. E. Hubbard, Esq., Leonard's Lee:—

TWENTY FIRST-CLASS PEARS ON THE QUINCE.

| | |
|---|---|
| Duchesse d'Angoulême | White Doyenné |
| Chaumontel | General Todtleben |
| Madame Millet | Souvenir Beurré d'Arembergh |
| Winter Nelis | Doyenné du Comice |
| Beurré d'Amanlis | (Thompson's) |
| ,, Stræckmans | Napoleon |
| ,, d'Anjou | Glou Morgeau |
| ,, Bachelier | Bon Chrétien (William's) |
| Louise Bonne of Jersey | Fondante de Cuerne |
| Madame Treyve | Marie Louise d'Uccle |
| Pitmaston Duchess | Durandeau |

PEARS WHICH SUCCEED ON FREE STOCKS.

| | |
|---|---|
| Gansel's Bergamot | Gratioli of Jersey |
| Beurré Bosc | Louise Bonne of Jersey |
| ,, Clairgeau | Marie Louise |
| ,, Diel | Madame Millet |
| ,, Rance | Knight's Monarch |
| Easter Beurré | Winter Nelis |
| Bon Chretien | Olivier des Serres |
| Brookworth Park | Pitmaston Duchess |
| Chaumontel | Thompson's |
| Duchesse d'Angoulême | Vicar of Winkfield |
| Durandeau | Souvenir du Congrès |

*(To be continued.)*

# Reports of Societies.

## ROYAL HORTICULTURAL:

October 13 and 14.

THIS was again one of those successful meetings of which the Society has had several during the year now waning, and must have promoted as great satisfaction in the minds of the executive as it appeared to give to the numerous visitors. Rarely has fruit been shown in better condition, or of finer quality, equally noticeable in Pears and Apples, and certainly the number of dishes—1700—must have exceeded the expectations of the most sanguine.



FIG. 114.—WALTON PEAR TREE.

As was most proper flowers, were not present in any great quantities, so that there was nothing that could much distract the sole attention due to the fruit.

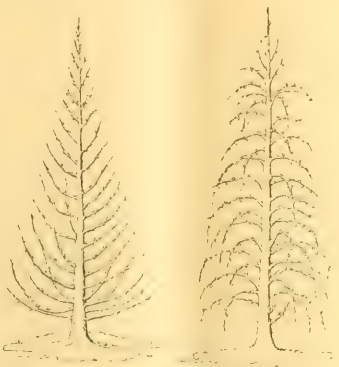


FIG. 115.—PYRAMID DEALS WITH UTURNED OR DEFLEXED BRANCHES.

An exception must be made, in so far as regards Mr. A. E. Campbell's Gladioli, which, fine as they were, failed to obtain the same amount of general criticism as fell to their lot on an earlier occasion.

Vegetables shown for Messrs. Sutton & Sons' special awards were not very numerous, nor were there many things included in them of supreme merit; and some exhibitors failed to see that to show vegetables that attain to excellence only during the summer months disqualifies when shown in late autumn.

### Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. J. Douglas, J. Lane, W. Bealby, H. Bennett, H. Herbst, W. Wilks, J. Fraser, G. Duffield, H. Ballantine, J. Dominy, H. Williams, H. M. Pollett, J. O'Brien, E. Hill, H. Turner, J. Smith, J. James, J. Walker, J. Child, W. B. Kellock, T. Baines.

Messrs. J. Veitch & Sons showed a number of varieties of greenhouse Rhododendrons, some of which are of recent raising. An intense scarlet was seen in R. cardinale. R. Minerva is pale yellow, with a truss which is close yet large; R. Apollo, an orange-scarlet, with a very nice truss. These two last-named were awarded a First-class Certificate. Other varieties were shown, in which salmon or yellow tints prevailed, and sometimes both in the same bloom. A novel free-blooming Begonia, John Heale × B. socotrana, and a tuberous variety of their raising came also from the Chelsea firm. The colour is bright lake, the flowers being pendent in slender racemes, and the habit altogether distinct. Female blooms were absent, so that long-continued flowering is likely to be a property of the plant. A First-class Certificate was given. A pretty panful of Amazonia punicea, Babingtonia Camphorosmæ, a myrtaceous plant from the Swan River, Western Australia, having pinkish-white silver-like blooms in racemes, and Heath-like foliage. A good plant of Callicarpa purpurea, standing 4 feet, and as much in breadth; it had a number of drooping bunches of its singular purple berries, making it exceedingly attractive. The plant is by no means a novelty, but it is rarely seen in plant collections. A Cultural Commendation was awarded. Vanda Hookeriana received the same award, being shown by Mr. E. Hill, gr. to Lord Rothschild, Tring Park. There were four flowers open on the small specimen, on which the lip spottings were very fine. The growth was hard and wiry; evidently the culture of this beautiful Orchid is well understood at Tring Park. De B. Crawshay, Esq., Rosefield, Sevenoaks (gr., Mr. Cook), had a plant of Odontoglossum odoratum leuchochilum; and from the garden of A. H. Smee, Esq., Wallington (Mr. Cummings, gr.), a plant of Cattleya speciosissima and Lycaste Smeeana, the first-named of but small pretensions to beauty, and the last a pale form of Skinneri. D. Duke, Esq., The Glen, Lauriston (gr., Mr. A. Noakes), brought Barkeria Lindleyana Centeræ, with purple sepals and petals, and a lip of a much darker tint. It was nicely flowered, and obtained a Cultural Commendation. Some pretty early flowering Chrysanthemums from Mr. Boyce, 87, Norbury Road, Holloway, were seen in Mandarin, Madame C. Desgranges, G. Wermig, and some new Anemone and pompon-flowered varieties. Mr. W. Bull, The Nurseries, King's Road, Chelsea, had Gastronema hybrida under the name of Maliota intermedia, a beautifully flowered Eucharis Mastersii, showing admirably the character of the plant, which some think is no advance on E. candida; Oncidium Barkeri (tigrinum), the sepals and petals of rich brown barred with yellow, the lip of the purest yellow, 2 inches across, a beautiful showy species. From the same establishment were Alocasia Regina, a dark metallic-green foliage plant; Lælia autumnalis atrorubens, bearing a pretty spike of bloom. Several new varieties of Chrysanthemums in Roi des Précoces, a chocolate-brown Japanese; Fleur d'Eté, rosy-mauve, partially incurved Japanese; and La Bien amiée, a rose pompon. Mr. Herrin, gr., Chalfont Park, showed some showy Celosia pyramidalis coccinea, receiving a Vote of Thanks. Mr. Thomas Ware, Tottenham, had a quantity of cut blooms of hardy plants, mostly varieties of Michaelmas Daises; some varieties of Colchicum, inclusive of two double-flowered varieties. From the Gourrock Gardens Mr. Campbell showed a very fine collection of Gladioli, about which we may have something to say at another time. Some varieties of Ixoras were sent by Mr. J. Hudson, as Morseii, a fine truss, sent out some years since by Mr. B. S. Williams; Prince of Orange, Williamsii, a distinct rosy-scarlet; and coccinea. Mr. Forbes, gr., Dover House, Roehampton, sent cut blooms of Japanese Chrysanthemums, viz., Margot, a pale pink, with a fawn coloured centre; M. Mousillac, a rich red-brown; Ile des Plaisirs, also rich brown, the reverse of the petals dead gold colour—a handsome kind, and which was awarded a First-class Certificate. Messrs. H. Cannell & Sons showed several showy kinds of scarlet, white, and pink Pelargoniums, and likewise Begonia blooms, both single and double flowered. Some Cannas from Swanley, Pride of Penshurst, a good smooth flower, pale yellow, were much admired. Early flowering Chrysanthemum Faberta, a bright canary-yellow, was a good kind and obtained a Vote of Thanks. The single flowered tuberous Begonia Earl of Bessborough, with deep orange coloured blooms, obtained a First-class Certificate. From Leonardslee Mr. S. Ford sent cones of Pinus excelsa and Abies Webbiana. Messrs. Hooper & Co., Covent Garden, sent some flowering Tree Carnations of some merit.

FIRST-CLASS CERTIFICATES.

To Mr. J. Forbes, for Chrysanthemum Ile des Plaisirs.

To Messrs. J. Veitch & Sons, for Begonia John Heale.

To Messrs. J. Veitch & Sons, for Rhododendron Apollo.

To Messrs. J. Veitch & Sons, for Rhododendron Minerva.

To Mr. W. Bull, for Eucharis Mastersii.

To Mr. W. Bealby, for Ivy-leaf Pelargonium Alice Crousse.

To Messrs. H. Cannell & Sons, for Begonia Earl o' Bessborough.

To Mr. Laxton, for Apple September Beauty.

To Mr. Gilbert, for Chou de Burghley.

### Fruit Committee.

Present: H. Veitch, Esq., in the chair; and Messrs. J. Lee, J. Woodbridge, G. T. Miles, T. F. Rivers, G. Bunyard, J. E. Lane, J. Ellam, J. Burnett, C. Ross, S. Ford, F. Rutland, W. Paul, A. Sutton, J. B. Haywood, G. Page, G. Paul, J. Roberts, and J. Sheppard.

APPLES.

For the best collection of Apples (nurserymen), not exceeding 100 varieties, six fruits to constitute a dish.—1st, Messrs. G. Bunyard, The Old Nurseries, Maidstone, whose exhibits were, if anything, superior to that shown by them at the Crystal Palace in the previous week, and comprised mainly the same varieties; 2d, Messrs. J. & G. Lane, St. Mary's Cray, Kent—thus reversing the order of their names at this competition. The 3d prize was taken by Messrs. Paul & Son, Old Nurseries, Cheshunt. The Sawbridgeworth collection, which failed to win, numbered eighty dishes.

For the best collection of fifty varieties (amateurs).—Mr. Ford, Leonardslee, was 1st. Some of his fruit being remarkably fine, as Broadhurst Pippin, Emperor Alexander, Minshul Crab, Bedfordshire Foundling, Hawthornden, Lady Henniker, Pitmaston Nonpareil, and Stone's Apple; 2d, Mr. D. C. Powell, The Gardens, Powderham Castle, Devon—a well coloured collection, but one in which the fruit was smaller than in the first lot; 3d, Mr. A. Waterman, of Preston Hall, Aylesford. In this competition five collections were tabled.

For the best twelve culinary Apples, distinct.—1st, Mr. C. Ross, gr., Welford Park, who had fine examples of Peasgood's Nonsuch, Prince Albert, Brabant Bellefleur, Pomona, Annie Elizabeth, Mère de Ménage, and Stirling Castle; 2d, Mr. D. C. Powell, his Blenheim Orange, Reinette du Canada, and Galloway Pippin were excellent dishes; 3d, Mr. J. Grey, Normanton Gardens, Stamford.

For six dishes of culinary Apples, Mr. F. Miller, gr. to J. T. Friend, Esq., Northdown, Margate, was 1st—in this lot were fine Alexander and Blenheim Orange; 2d, Mr. F. Rutland, gr., Goodwood, Sussex, the Frogmore Prolific, Lord Suffield, Peasgood's Nonsuch, and Blenheim Orange being capital samples; 3d, Mr. Ross. In this class there were eleven lots staged.

For the best twelve varieties of dessert fruits.—In this class Mr. F. Rutland was placed 1st—good samples were observed of Brownlee's Russet, Nanny, Kerry Pippin, Mannington's Pearmain, Cox's Orange Pippin, and Melon; 2d, Mr. F. Miller, with good samples of Duke of Devonshire, Braddick's Nonpareil, Ribston and Orange Pippin; 3d, Mr. A. Waterman. Six lots were shown.

For six varieties of dessert kinds, the prizes fell to Mr. Jacobs, Petworth; Mr. Rutland, and Mr. C. Ross, in the order of their names.

In the smaller classes for Blenheim Orange, Cox's Orange Pippin, Ribston Pippin, King of the Pippins, Dumelow's Seedling, Mère de Ménage, Golden Noble, Cockle Pippin, Court Pendu-plat, Warner's King, Waltham Abbey Seedling, Gloria Mundi, Peasgood's Nonsuch, Lane's Prince Albert, and Bramley's Seedling, were many fine samples, but nothing which can be said to be of superlative merit, and in which classes the names of exhibitors in larger classes repeatedly occur; other prize-winners being Messrs. Lane & Son, Berkhamstead; J. Gilmour, J. Bolton, Combe Bank, Sevenoaks; G. Thompson, T. F. Halsey, J. Burnett, Goldsmith, and A. Smith.

COLLECTIONS OF APPLES AND PEARS.

Messrs. J. Veitch & Sons showed 160 dishes of Apples and 100 of Pears, for which a Silver Medal was awarded. Messrs. Cheal & Sons showed a collection of Apples consisting of 140 dishes, and of Pears thirty-three dishes; a Silver Medal was awarded also in this case. Messrs. W. Paul & Son, Waltham Cross, showed 152 dishes of Apples, as did Messrs. C. Lee & Son; in each case the Silver Medal was given.

PEARS.

In this division of the show there was not only considerable competition but in many instances the samples were remarkably fine as, for instance, the wonderful Pitmaston Duchess, Duchesse d'Angoulême, shown by Mr. Thomas, of Sittingbourne, who had in addition a huge heap of these fruits, and some wonderfully coloured Louise Bonne, that did literally make one's mouth water.

In the nurserymen's class not to exceed fifty varieties, there were four lots, all of good average merit. Mr. Thomas was 1st, having in his collection some noble samples, besides those named above, of Beurré Clairgeau, King Edward, Conseiller de la Cour, Doyenné Boussoch, Beurré Diel, Durandeau, and Beurré Bachelier. Mr. T. F. Rivers, Sawbridgeworth, was 2d, having in his collection very fine fruit of Beurré Benoist, Pitmaston Duchess, Rivers' Princess, very handsome; Beurré Diel, Glou Morçeau, Doyenné du Comice, and Lebrun. Mr. G. Bunyard, Maidstone, came 3d, with a very interesting collection, including, with many above-named, Marie Louise d'Uccle, Bellisime d'Hiver, &c.

A duplicate class of fifty kinds for amateur growers brought fine lots, or a total of some 250 dishes. Here Mr. Roberts, Gunnersbury Park Gardens, was 1st, his exhibits being neatly set up with foliage; the collection included kinds previously mentioned, of good colour and fair size, though all the amateur lots in this class were wanting in that feature as compared with the nurserymen's lots. Mr. C. A. Hoare, Kelsey Manor, Beckenham, was 2d; and Mr. A. H. Smee, The Grange, Wallington, was 3d.

In the class for twelve kinds, Mr. Allan, gr. to Lord Suffield, Gunton Park, was a strong 1st, having splendid Maréchal de la Cour, Pitmaston Duchess, Beurré Diel, Glou Morçeau, Beurré Clairgeau, Doyenné du Comice, Marie Louise, Marie Louise d'Uccle, Beurré Hardy, Louise Bonne, Winter Nelis, and Fondante d'Automne. Mr. Thomas came 2d here, with fine kinds, showing good colour, as previously named. Mr. A. Waterman, gr. to H. A. Brassey, Esq., Preston Hall, Maidstone, was 3d. There were seven lots in this class, whilst in the one for six kinds there were not less than sixteen, and a grand class it was. Here Mr. Allan was again 1st, with capital samples of Pitmaston Duchess, Maréchal de la Cour, Marie Louise d'Uccle, Doyenné du Comice, Jersey Gratiola, and Fondante d'Automne. Mr. A. Smith, gr. to W. H. Sewell, Esq., Warren Hill, Loughton, was 2d, having fine Brookworth Park, Van Mons' Léon le Clerc, and previously named kinds. Mr. Hoare came 3d.

Of stewing Pears, in three dishes, there were nine lots, Mr. Rutland, gr. to the Duke of Richmond, Goodwood, being placed 1st, with large samples of Uvedale's St. Germain, Grosse Calebasse, and King Edward. Mr. W. Johnston, gr. to the Marchioness Camden, Lambert-hurst, was 2d; and Mr. Sharpe, gr. to F. Halchett, Esq., Lee, Kent, was 3d.

Coming now to single dishes, in some of the classes of which there was considerable competition, there were seven lots of that capital Pear Doyenné du Comice, Mr. Allan having the best, Mr. C. Ross, Welford Park, and Mr. Johnston coming 2d and 3d.

There were twelve lots of Beurré Superfin, Mr. Bunyard having the best, and very handsome samples too; Mr. Burnett, The Deepdene, Dorking, coming 2d; and Mr. R. Smith, gr. to Lady Fletcher, Yalding, 3d.

There were but four dishes of Maréchal de la Cour, Mr. Allan having grand samples; the next best coming from Mr. Divers, Wierton Place Gardens, Maidstone; and Mr. Silk, gr. to J. Abernethy, Esq., Margate.

No less than thirteen dishes of that beautiful Pear, Marie Louise, were staged, Mr. R. Smith having beautiful clean samples; and Mr. Powell, Powderham Castle, coming 2d with large, if less handsome fruits. Mr. Smee had the next best lot.

Of that grand late Pear, Glou Morçeau, there were thirteen dishes, Mr. Ross, Mr. C. Howe, Benham Park, Newbury, and Mr. Powell taking prizes in the above order.

Of Beurré Rance there were twelve dishes, Mr. R. Smith coming 1st, with fine fruits; Messrs. Howe and Sewell following.

Beurré Benoist brought but one dish, a fine sample, from Mr. Rutland, and there was but one lot of Urbaniste—a good sample—from Mr. Thomas.

The popularity of Beurré Diel, on the other hand, was shown by its eighteen dishes, generally very fine samples, the best coming from Messrs. Thomas, Sewell, and Bunyard.

The less showy Pear, Winter Nelis, found eight dishes to represent it, Messrs. Silk, R. Smith, and Allan taking the prizes, whilst the huge Pitmaston Duchess brought only three dishes, all grand samples, from Messrs. Thomas, Howe, and Rutland.

There were but three dishes of Beurré Bachelier, Mr. W. Johnston having very fine samples; Mr. Neighbour, of Bickley Park Gardens, and Mr. R. Smith, coming 2d and 3d.

Of Fondante d'Automne there were but five dishes, Messrs. Allan, Silk, and R. Smith having the awards; and but four lots of Passe Colmar, whilst of Louise Bonne there were six dishes, some beautifully coloured samples from Mr. Thomas coming 1st; Mr. W. Tate, Streatham, was 2d; and Mr. Allan 3d.

The trade collections of Pears from Messrs. Veitch & Sons, Cheal & Sons, Sussex; W. Paul & Sons, Waltham Cross; Paul & Sons, Cheshunt; were of exceeding interest, and will doubtless be seen to better advantage at the Pear Congress next week, when Pear matters will have more than usual examination, and secure more interest.

VEGETABLES.

The valuable special prizes offered for a collection of eight kinds of vegetables at this meeting brought eight lots, and very high quality throughout—better has seldom been seen at this time of the year. Mr. Haines, gr. to Earl Radnor, Coleshill, Berks, was 1st, with high-class samples of Autumn Giant Cauliflowers, Sutton's New Intermediate Carrot (very beautiful), Rousham Park Onions, Perfection Tomatos, Schoolmaster Potatos, Canadian Wonder Bean, Exhibition Brussels Sprouts, and Clarke's Red Celery; Mr. W. Meads, Beckett Park Gardens, Shrivenham, was 2d, also having beautiful Carrots of the same kind, and fine Trophy Tomatos; Mr. Pope, Highclere Castle Gardens, was 3d, also having grand Carrots, Giant Cauliflowers, and White Gem Celery; Mr. Waite, Esher, was 4th, having in his collection pretty Snowdrop Potatos and Stamfordian Tomatos; and Mr. Richards, Somerley Park Gardens, was 5th; and Mr. Richards' stems of Brussels Sprouts spoilt his chances, as other samples were excellent.

Mr. S. Jacobs, Petworth, showed a fine French Pumpkin of 213 lb. weight, prettily tattoed with Fern foliage.

## THE WOOLHOPE CLUB.

FOR sixteen successive years has the writer found himself in the city of Hereford during that week in autumn which the Woolhope Club devotes to the study of mycology. In these sixteen years many old faces have passed away, many new ones have appeared, but still, this reunion of kindred spirits continues to be looked forward to by all those fungologists who have once been initiated into a personal participation of the fungus foray as one of the red-letter days or weeks of the year. The *habitués* began to muster from north, south, east, and west, on the evening of Monday, October 5; mutual felicitations were indulged in, and amongst genial hand-shaking, the prospects of the morrow were discussed.

The morning of Tuesday, October 6, broke bright and sunny, so the party of eighteen gentlemen who assembled at the Hereford station were in high spirits. New ground was to be hunted in the woods at Pontrilas. The party included the President of the Woolhope Club, Mr. C. G. Martin, Dr. Bull, Dr. Carlyle, Rev. Canon Du Port, Messrs. Cunningham, Vize, C. E. Broome, W. Phillips, G. Massee, C. Bucknall, J. Griffith, Morris, Edwin Lees, C. B. Plowright, and others.

Just as the start for Pontrilas station was made, under the guidance of Dr. Bull, a few drops of rain fell, but too few to disturb the equanimity of the fungus-hunters. One by one, however, the umbrellas went up as the raindrops came down slowly and surely, increasing in frequency and volume. A belt of trees yielded several interesting species, amongst which was a Tricholoma, very much like A. terreus, but turning red when injured, for which character it was first assigned to A. inodorus, Fr., but subsequently to A. atro-squamosus, Chev. Having the habit and odour of A. terreus, it more resembles the figure of A. guttatus, Schæffer, in Cooke's *Illustrations*. Mr. Bucknall produced some fine specimens of the new Boletus tenuipes, a plant with the habit of B. piperatus, but abundantly distinct. The rain now settled into a steady downpour—

"The land was water, and the sky was lead."

Such a soaking the mycologists had not had since the memorable days, in years gone by, at Whitfield and at Cabalva. The party were entertained to luncheon by Mr. Attwood-Mathews, of Pontrilas.

It is not too much to say the tables were loaded with fungi. The would-be mycophagists were, however, at first taken aback, by observing amongst these A. muscaria and several other beautiful but poisonous species. Confidence was, however, soon restored when word was passed round that these were not intended for consumption, but were models skilfully constructed for artistic effect in honour of the assembled company. The luncheon came in due course, and was peculiarly grateful to the sodden fungologists. The party returned in the afternoon to Hereford, when a general rush for dry clothes took place. In the evening a reception was held at the "The Haven," when the Rev. J. E. Vize read a paper on "Polycystina," and exhibited specimens. Dr. Bull read a paper, not too long, "On the Solution of a New Zealand Botanical Mystery," and showed specimens of Torrubia Robertsii in fine fruit. On Wednesday (October 7) the mycologists being joined by Dr. M. C. Cooke, made an excursion to Dinmore Hill. Special instructions had been given to search for and to find two species which had not previously been met with in these Herefordshire forays, viz. Boletus purpurascens and Cortinarius dibaphus. The former was soon found—two specimens only, and they somewhat *passé*, but still characteristic—the latter in abundance in all stages and in excellent condition. This remarkable Cortinarius has certainly during the past sixteen years never previously put in an appearance at Hereford. So large and so well marked a plant could not have been overlooked, with its brownish-yellow, viscid pileus surrounded by a purple margin, its lemon-yellow gills and stem, with its marginate bulb, all of which characters render it a fungus once seen never to be forgotten. One point about it, however, is not quite clear. Fries placed it in the third group of the Scauri, "with ferrugineous yellow or fulvous gills;" but in his description he speaks of the gills as being "purpurascenti-ferrugineus," yet he quotes Saunders and Smith, t. 10, but which figure, like our Hereford specimens, is devoid of any purple tint about the gills. The inference is that the "purpurascenti" must be a clerical error. Dinmore yielded its usual crop of good things, which have so often before been enumerated, including Thelephora clavularis, Hygrophorus arbustivus, and a Peziza that puzzled Mr. Phillips. In the evening the mycologists were entertained at dinner by Mr. C. G. Martin, the President of the Woolhope Club, after which Mr. Phillips read in the Woolhope Room his very interesting paper on "Puffballs," illustrated with drawings of many species. He expressed his opinion that Lycoperdon perlatum was undoubtedly British, and that under L. saccatum we include a good species, L. excipuliforme, the spores of L. saccatum being larger, and have a peculiar outline. They are often spoken of as echinulate, but this is hardly the case, as these are not so much covered by spines as surrounded by a paler irregularly pointed outline. It is to be hoped Mr. Phillips will publish his paper *in extenso*, with figures of the spores of the different species.

A strong muster of members, including four ladies, on club-day (Thursday, October 8) assembled at the station and took train for Leominster, in spite of the threatening weather, which developed into a sharp rain on our arrival at the last-named place. Nothing daunted carriages were taken, and a start made for Risbury Camp. During the ride the clouds broke, the blue sky became visible, and the sun shone out. Unversed as the present writer is in the mysteries of archæology, his impressions of the camp are worth but little, but it seemed to be protected by very muddy approaches, to produce few fungi, and to be full of Apples? The party now gracefully slid down the grassy slopes of the camp, and made for Hell's Hole Dingle, through which we were to walk to Hampton Court. But across the Dingle ran a stream, over which the party had to cross on a weir. To effect this comfortably the order was given for the young and able-bodied each to carry a stone. This was, of course, done for something under a mile, but—oh, cruel fate!—only to find after the portage had been made that a rustic bridge spanned the stream a few hundred yards above the weir. Lamentations over wasted labour were, however, soon dispelled when the

rare Agaricus Badhami was found in fine condition under some Fir trees. The walk through the Dingle—the length of which was variously estimated from a half to four miles—was productive of many interesting fungi, and in due course Hampton Court came into view, with its Gipsy Oak, ancient Cedars, and spacious lawn. Mr. Arkwright regaled as many as were disposed with refreshment while the others hunted over the lawn. Under one of the Cedars Mr. W. B. Grove, of Birmingham, soon discovered a Geaster, probably G. Bryantii.

As the time was getting away, the order "Forward!" was given, and Dinmore Hill ascended. The general who led his 10,000 men up a hill and down again has long been held up to ridicule in rhyme, but to lead an army of mycologists, not only up a hill, but through a wood, is by no means so easy a feat. Somebody blundered; the wrong turn was taken; and, instead of coming out at the station, we came out somewhere—on the wrong side of the hill. Train time was drawing near, rain began to fall, legs began to ache, baskets to feel heavy; nobody seemed to know exactly where we were, nor which way we should go till the order "Forward!" was again given. Now, in point of fact, this was really "backward," but Woolhopians, unlike rope-makers, do not as a rule progress backwards; so on we went, not without trepidation, however, lest we should find ourselves the next time we emerged from the wood worse off than before. The rumble of a railway train at the junction sounded ominously in our ears. Under such circumstances how eagerly every one is on the look-out for a landmark, a sign-post, a windmill, or well-known church steeple, for instance, but no such landmark cheered our gaze. At last one of the party sighted a particular clump of trees. All right now: here is where A. atro-punctatus grows. Take the path to the left, and we shall be all right. Still some were a little dubious about plunging once more into brushwood in which you could not see 10 yards in front of you, but soon other landmarks presented themselves—first the places where Boletus purpurascens was found, then the habitat of Cortinarius dibaphus, which, of course, settled the whole affair; and within 10 minutes we were safely landed at the station, and in due course arrived at Hereford.

There is a great similarity amongst all dinners, even if they be Woolhope dinners; but they are for all that necessary, and by no means unpleasant events. After dinner Dr. Cooke read a humorous poem, entitled "Flamen Pomonalis," in which the Editor of the *Pomona* figured largely. This was followed by a very interesting paper on "The Origin of Domestic Poultry," by Mr. E. C. Phillips.

In the evening the company assembled in the Woolhope Room. The writer gave an account of Brefeld's researches on the Ustilaginei, in which he pointed out Brefeld's method of cultivating these spores in "Kammern," so that they are exposed to the air, and yet the culture is not spoiled by Bacteria, although the nourishing fluid employed is a highly putrescible one, namely, a decoction of the excreta of herbivorous animals. He also pointed out the absurdity of the statement which has been made about Brefeld, namely, that he has attempted to show that yeast (Saccharomyces) originates from the Ustilaginei, whereas his investigations show that the conidia of the Ustilaginei reproduce themselves by budding (just as yeast-cells do), not in saccharine solutions, but in the excreta of various vegetable feeding animals.

A discussion followed, opened by Dr. Bull, on "The Effect of Fungus Growth in Destroying Tree Life," in which several members took part.

Dr. Cooke exhibited a specimen of Agaricus melleus, originating from the threads of Rhizomorpha, from Epping Forest, as a case in point, showing that A. melleus was a true tree-destroying fungus. The researches of Hartig were referred to by one of the members, and the general wish expressed that the subject should be taken up more fully next year.

The last day was spent in Haywood Forest, where, as usual, Cortinarius setaceus and C. triumphans were found, together with several other species of more or less interest. In the evening Mr. Vize read his paper on "Pestalozzia," alluding, among other species, to the P. Guepenii, which plays such havoc on Camellia leaves.

During the week the following were amongst the more important and interesting species met with:—

Agaricus Badhami, pantherinus, metulæsporus, carcharias, mucidus, sejunctus, albo-brunneus, atro-squamosus, sulphureus, carneus, clavipes, odorus, phyllophilus, fumosus, vertirugis, rancidus, purus, filipes, roridus, rusticus, phlebophorus, lividus, indoros, orchellæ, pisciodorus, variabliis, radicosus, pudicus, pyriodorus, glutinosus, sinapizans, carbonarius, alnicola, crinaceus, squamosus, pyrotrichus, semivestitus.

Coprinus comatus, fuscescens.

Cortinarius triumphans, balteatus, sebaceus, varius, varicolor, infractus, glaucopus, purpurascens, dibaphus, fulgens, papulosus, collinitus, mucifluus, elatior, vibratilis, albo-violaceus, anomalus, torvus, evernius, hinnuleus, incisus, privignus, saturninus, decipiens.

Hygrophorus russus, turbustivus, olivaceo-albus.

Lactarius torminosus, turpis, hysginus, flexuosus, pyrogalus, glyciosmus, mitissimus.

Russula furcata, rosacea, fellea, vesca,

Nyctalis parasitica.

Marasmus fœtidus, Hudsoni.

Boletus tenuipes, badius, piperatus, purpureus, edulis, versipellis, scaber, felleus, laricinus.

Polyporus rupescens, giganteus.

Tremella foliacea, mesenterica.

Hirneola auriculæ-judæ,

Geaster fimbriatus, Bryantii.

Tuber æstivum.

And so the happy week ended. One more Woolhope week is over; may we all meet again next year. *Charles B. Plowright.*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, OCTOBER 14, 1885.

| Month and Day. | Barometer. | | Temperature of the Air. | | | | Hygrometrical Deductions from Glaisher's Tables 7th Edition | | Wind. | | Rainfall. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean Reading at 32° Fahr. | Departure from Average of 18 years. | Highest. | Lowest. | Range. | Departure of Mean from Average of 18 years. | Dew Point. | Degree of Humidity. Sat. = 100. | Average Direction. | | |
| Oct. | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 8 | 29.39 | —0.30 | 54.5 | 37.5 | 17.0 | 4.6 | 9 — 5.3 | 43.4 | 89 | N.W.; S.W. | 0.12 |
| 9 | 29.74 | —0.46 | 52.0 | 42.5 | 9.5 | 4.6 | 2 — 5.7 | 49.4 | 81 | N.W. | 0.00 |
| 10 | 28.84 | —0.85 | 49.7 | 43.5 | 6.2 | 45.5 | — 6.1 | 44.2 | 96 | N.; E.; N.E. | 0.44 |
| 11 | 29.39 | —0.30 | 48.7 | 43.4 | 5.3 | 4.1 | 5 — 6.8 | 37.5 | 76 | N.; N.W. | 2.00 |
| 12 | 29.53 | —0.17 | 49.0 | 32.0 | 17.0 | 4.0 | 7 — 10.3 | 35.7 | 83 | N.NW | 0.02 |
| 13 | 29.67 | —0.03 | 46.5 | 37.5 | 9.0 | 4.8 | 8 — 8.9 | 35.0 | 81 | N.W.; N.NW. | 0.00 |
| 14 | 29.50 | —0.11 | 48.0 | 39.5 | 8.5 | 4.3 | 1 — 7.3 | 41.4 | 96 | N.W. | 0.18 |
| Mean | 29.38 | —0.32 | 49.8 | 39.4 | 10.4 | 4.1 | — 7.2 | 39.8 | 86 | N.W. | 0.76 |

Oct. 8.—Rain falling nearly all morning; dull afternoon. Fine night.
— 9.—Fine day, bright at times.
— 10.—Rain from early morning till about noon; fine but dull afterwards.
— 11.—Dull day.
— 12.—Cold day and night.
— 13.—Dull day and night.
— 14.—Slight rain all morning; fine and bright from noon to 1 P.M.; rain in afternoon and evening.

LONDON: *Atmospheric Pressure.*—During the week ending October 10, the reading of the barometer at the level of the sea increased from 29.93 inches at the beginning of the week to 29.94 inches by 9 A.M. on the 4th, decreased to 29.65 inches by 5 P.M. on the 5th, increased to 29.82 inches by 9 A.M. on the 6th, decreased to 29.53 inches by 5 P.M. on the same day, increased to 29.89 inches by 5 P.M. on the 7th, decreased to 29.36 inches by 9 A.M., increased to 29.46 inches by 5 P.M. on the 9th, decreased to 28.95 inches by 9 A.M. on the 10th, and was 29.16 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.60 inches, being 0.28 inch lower than last week, and 0.27 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 57°, on the 4th, on the 10th the highest temperature was 49°.7. The mean of the seven high day temperatures was 53°.5.

The lowest temperature was 37°.5, on the 8th, on the 5th the lowest temperature was 47°. The mean of the seven low night temperatures was 41°.5.

The greatest range of temperature in one day was 17°, on the 8th; the smallest, on the 5th, was 5°.9. The mean of the seven daily ranges was 12°.

The mean temperatures were—on the 4th, 48°.8; on the 5th, 48°.5; on the 6th, 46°.8; on the 7th, 47°; on the 8th, 46°.9; on the 9th, 46°.2; and on the 10th, 45°.5; and these were all below their averages by 4°.7, 4°.7, 6°.1, 5°.6, 5°.3, 5°.7, and 6°.1, respectively.

The mean temperature of the week was 47°.1, being 2° lower than last week, and 5°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 98°, on October 6. The mean of the seven readings was 82°.1.

The lowest reading of a minimum thermometer placed on grass was 30°, on the 4th. The mean of the seven readings was 35°.

*Rain.*—Rain fell on five days, to the amount of 1.02 inch.

ENGLAND: *Temperature.*—During the week ending October 10 the highest temperatures were 60° at Truro, 59°.1 at Cambridge, 59° at Plymouth; the highest at Bolton was 53°.1, at Bradford, Sunderland, and Newcastle, 54°. The general mean was 56°.4.

The lowest temperatures were 32° at Hull, 33°.5 at Wolverhampton, 36° at Newcastle; the lowest at Brighton was 40°.8, at Plymouth, 40°.5, at Liverpool 40°.3. The general mean was 37°.9.

The greatest ranges were 24° at Hull, 22°.6 at Cambridge, 21°.6 at Wolverhampton; the least ranges were 14° at Sunderland, 14°.6 at Liverpool, 16°.3 at Bolton. The general mean was 18°.5.

The mean of the seven high day temperatures was highest at Truro, 57°.4, at Plymouth 57°, at Cambridge 55°.9; and was lowest at Bolton 50°.8, at Sunderland 51°.2, at Liverpool 51.8. The general mean was 53°.8.

The mean of the seven low night temperatures was highest at Truro, 45°.9, at Plymouth 44°.3; at Liverpool 43°; and was lowest at Wolverhampton, 35°.2, at Hull 37°.4, at Bolton 39°.1. The general mean was 41°.

The mean daily range was greatest at Wolverhampton, 18°.2, at Cambridge 16°.1, at Hull 16°; and was least at Liverpool, 8°.8, at Sunderland 9°.5, at Bradford 10°.5. The general mean was 12°.8.

The mean temperature was highest at Truro, 50°.5, at Plymouth 49°.5, at Brighton 47°.6; and was lowest at Wolverhampton, 43°.2, at Bolton 43°.8, at Hull 44°.3. The general mean was 46°.2.

*Rain.*—The largest falls were 2.41 inches at Truro, 2.09 inches at Bolton, 2.01 inches at Liverpool; the smallest falls were 0.45 inch at Newcastle, 0.76 inch at Hull, 0.84 inch at Leeds. The general mean fall was 1.35 inch.

SCOTLAND: *Temperature.*—During the week ending October 10, the highest temperature was 57°.2, at Paisley and Perth; at Greenock the highest temperature was 52°.7. The general mean was 54°.5.

The lowest temperature in the week was 31°.4, at Edinburgh; at Leith the lowest temperature was 38°.9. The general mean was 36°.5.

The mean temperature was highest at Paisley, 46°.8; and lowest at Aberdeen, 44°.2. The general mean was 45°.6

*Rain.*—The largest fall was 1.85 inch, at Greenock; the smallest fall was 0.25 inch, at Dundee. The general mean fall was 0.75 inch.

JAMES GLAISHER, F.R.S.

# Enquiries.

"*He that questioneth much shall learn much*"—BACON.

PINUS ARISTATA.—A correspondent, who has tried the nursery trade in vain, wishes to know where this species may be obtained.

# Answers to Correspondents.

*** OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARDCHRON, LONDON," GARDCHRON *being written as one word. Telegrams thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

BOOK ON VINES: *W. R.* Mr. Barron, of Chiswick, has written the best modern work. It is published at the office of the *Journal of Horticulture*, 171, Fleet Street, E.C.

CALCEOLARIAS: *A. R.* The colours are in some cases rich and uncommon, but there seems to be no difference in form.

CHISWICK TRIALS OF VEGETABLES: *F. H., Frfurt.* You should apply to the Secretary, Royal Horticultural Society.

ERRATUM. — In "Montserrat," on p. 390, col. *c.*, line 18, of your issue of September 26, Thuia Lobbii ought to be Cryptomeria Lobbii, an erect variety of C. japonica.

EUCHARIS BULB: *C. B. M.* should address the Editor, and not the Publisher. The bulbs are swarming with mites and are altogether in a wretched state. Burn the affected bulbs and start afresh.

FERN: *J. B. Burn.* Neither Adiantum assimile nor A. formosum, and not much like either. What is the history of the plant? We do not recognise it in its present condition. It looks very much like a hybrid, or variation from spores, with a good deal of cuneatum and something of concinnum in it, but neither does it accord with either of these. Send a sprig of it pressed flat before getting withered.

GRAPE DUKE OF BUCCLEUCH: *Subscriber.* A temperature rather higher than that in which the Black Hamburgh flourishes suits it best. A mid-season Muscat-house treatment is suitable.

NAMES OF FRUITS: *W. Comfort.* Doyenné du Comice.—*J. J.* 1, Bishop's Thumb; 2, Verulam; 4, Louise Bonne of Jersey; 5, Chaumontelle; 6, Beurré

de Capiaumont.—*J. Day.* 3, is not Duchess of Oldenburg—more closely resembles Beauty of Kent; 4, London Peach; 5, Roundway's Magnum Bonum; others not recognised. *Second lot:* 1, Franc Real; 2, Caillot Rosat; 3, Autumn Bergamot; 4, Apple Keswick Codlin.—*H. Troughton.* 1, a seedling, is a fine looking fruit, seemingly well worthy of note; 2, is New Hawthornden; 3, Jolly Beggar.—*J. H. Trevor.* 1, Cox's Pomona; 2, New Hawthornden; 3, Hormead Pearmain; 4, Beauty of Kent; 5, Duke of Devonshire.—*Hamlet.* 1 and 2, Beurré d'Amanlis. *Apples:* 1, Eclinville Seedling; 2, Lord Suffield; 3 and 5, Golden Noble.—*A. B.* 1 and 2, Northern Greening; 3, Yorkshire Beauty; 5, Yorkshire Greening; 8, Wyken Pippin; 10, Grange's Pearmain; 11, Old Nonpareil; 12, Dutch Mignonne.—*Cattell & Green.* 2, Dumelow's Seedling; 4, Downton Nonpareil; 5, Wyken Pippin; 6, Beauty of Kent; 7, Coe's Golden Drop; 8, Court of Wick; 10, Beauty of Kent; 11, Grange's Pearmain; 12, Rymer.—*H. Noble.* 1, Fearn's Pippin; 3, Pear Van Mons' Léon le Clerc; 4, Alfriston; 5, Hambledon Deux-ans; 6, not recognised.—*G. S. C.* 1, Winter Nelis; 2, Vicar of Winkfield; 3 and 4, Glou Morçeau; 5, Beurré Diel; 6, Duchesse d'Angoulême; 7, Bellissime d'Hiver; 8, Beurré de Capiaumont.—*W. Cutbush & Son. Apple:* Keswick Codlin. *Plum:* White Bullace.

NAMES OF PLANTS: *J. W.* 1, Dendrobium occultatum; 2, Goniophlebium appendiculatum; 3, Hyrolepis tenuifolia; 4, Diplazium decussatum; 5, Pteris tremula; 6, Cyrtomium falcatum; 7, Pteris flabellata. *J. M.* 1, Polystichum Lonchites; 2, Polypodium dryopteris.—*E. Thomas* should address the Editor not the Publisher. The plant is Tricyrtis hirta—*W. R. E.* One of the Junipers. We cannot tell which without going to a nursery to compare.—*W. Barnes.* 1, Perneetya mucronata; 2, Cistus ladanifer us; 3 and 4, Taxodium distichum.—*A. A.* Lilium longiflorum.—*I. O. C.* 1, Crataegus punctata; 2, C. tanacetifolia; 3, C. nigra; 4, C. crusgalli; 5, C. crusgalli var. pyracanthifolia.—*C. E.* 1, Rex; 2, Metallica; 3, Pirzio; 4, Bruanti.—*W. Miller, Underby.* Cycnoches chlorocheilon.—*R. Y.* 1, Zygopetalum Gautieri; 2, Lycaste Skinneri; 3, next week; 4, Cattleya luteola Holfordi.—*Red Berry.* 1, Pinus Pinaster; 2 and 3, Lycium Barbarum; 4, Campanula pyramidalis.—*Carter Page & Co.* Trichinium Manglesii.

PARADISE STOCK: *Amateur.* This is a species of Apple that is used as a stock for dwarf trees in pots, &c. It is less enduring than the Doucin, and is propagated by layering and cuttings.

PEARS: *P. T.* One of the two is more russety and a little smaller than the other, but there is no other difference.

PELARGONIUM: *Pershdell.* We cannot give you the information. Send a specimen to one of the trade growers.

PENSION LIST: *W. E.* Sometimes needy deserving persons are put on the Charity list, if they have been connected with horticulture.

TREES AND SHRUBS IN LEASEHOLD LAND *E. A.* These are usually found and planted according to arrangements between lessor and lessee. The law book which would give you some information is that on *Fixtures.* As a book on fruit growing get *Profitable Fruit Farming*, by Charles Whitehead, published by Longman, Green & Co.

VEGETABLE MARROW: *Enquirer.* As this is a Gourd, of which Vegetable Marrow is the popular denomination of several edible varieties, we should think that showing them in a collection of edible kinds would not disqualify.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post-Office, Drury Lane, London, W.C.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

## CATALOGUES RECEIVED.

ORMISTON & RENWICK, Melrose, Roxburghshire—Coniferæ, Shrubs, and Fruit Trees, Roses, &c.

JAMES DICKSON & SONS, "Newton" Nurseries, Chester—Roses.

P. E. FRANCKEN, Steenbrugge, Bruges, Belgium—General Catalogue of Plants, Trees, Conifers, &c.

RICHARD SMITH & CO., Worcester—Plant List.

BAUDRILLER, Genues (Maine-et-Loire), France—General Catalogue.

JAMES COCKER & SONS, Sunnypark Nursery, Aberdeen—Roses; Wholesale and Retail Catalogues of Fruit Trees and Shrubs at Die Baumschulen Verwaltung, Zoschen, near Merseburg, Germany.

T. WARNER, The Abbey, Leicester—Fruit Trees, Roses, Trees and Shrubs.

J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex—Fruit Trees, Shrubs, Roses, Forest Trees, Rhododendrons, &c.

COMMUNICATIONS RECEIVED.—Sir J. Walrond.—W. S. R. D. B. F. C. H., Erfurt.—Delapierre, Paris.—Marshall P. Wilder, Boston.—M. Barbey, Valeyres.—R. J. L. Professor Macoun, Ottawa.—M. M., Launceston, Tasmania.—R. D., Botanic Garden, Demerara.—G. N. G. Andhom.—H. N. Ridley—F. Mote—A. A.—R. A. P.—G. Cannon—E. V. Larsen—R. D.—A. F. B.—C. A. M. C.—R. A. R.—J. F.—H. D.—S. J.—T. K.—A. W. D.—Agnes.—J. D.

DIED. — We regret to announce the decease, on October 6, of Mrs. JANE MURRAY, widow of Mr. Andrew Murray, late Assistant-Secretary of the Royal Horticultural Society.

—— We also regret to hear of the death of Madame VAN HULLE, on October 10, after a short but painful illness. Madame Van Hulle was the wife of Prof. Van Hulle, of the Ghent School of Horticulture.

# Markets.

*COVENT GARDEN, October* 15.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the prices in the coming week. ED.]

TRADE still quiet, and supplies heavy. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 | 3 0 | Melons, each | 0 | 1 0 |
| Damsons, ½ sieve | 1 | 3 6 | Peaches, per doz. | 3 | 8 0 |
| Figs, per dozen | 0 | 0 0 | Pine-apples, Eng., lb. | 2 | 0 4 0 |
| Grapes, per lb. | 0 | 0 6 | — St. Michael, each | 2 | 6 5 0 |
| Kent Cobs, per lb. | 0 | 1 0 | Pears, per dozen | 0 | 0 0 |
| Kent Filberts, 100 lb. | 25 | 28 0 | — per ½-sieve | 1 | 1 3 0 |
| Lemons, per case | 15 | 30 0 | Plums, ½ sieve | 1 | 1 6 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | 0 | 0 0 | Herbs, per bunch | 0 | 0 0 4 |
| Aubergines, each | 0 | 1 0 | Horse Radish, bun. | 3 | 0 4 0 |
| Beans, Eng., per lb. | 0 | 1 0 | Lettuces, Cab., doz. | 2 | 0 0 |
| — French, per lb. | 0 | 0 0 | Mint, green, bunch | 0 | 1 0 |
| Beet, per dozen | 1 | 0 0 | Mushrooms, basket | 1 | 0 1 6 |
| Brussel Sprouts, lb. | 0 | 1 0 | Onions, per bushel | 2 | 0 0 |
| Cabbages, per dozen | 1 | 0 2 0 | — Spring, per bun. | 0 | 0 6 |
| Carrots, per bunch | 0 | 0 0 | Parsley, per bunch | 0 | 0 4 |
| Cauliflowers, Eng. | | | Radishes, per dozen | 1 | 0 2 0 |
| fish, per dozen | 2 | 4 0 | Salad, mixed, per punnet | 0 | 0 4 |
| Celery, per bundle | 1 | 2 0 | Spinach, per bushel | 4 | 0 0 |
| Cucumbers, each | 0 | 0 8 | Tomatos, per lb. | 0 | 0 0 0 |
| Endive, per dozen | 2 | 0 0 | Turnips, bunch | 0 | 0 6 |
| Garlic, per lb | 0 | 0 0 | Veget. Marrs., each | 0 | 0 0 |

POTATOS.—Magnum Bonums, bad trade, 50s. to 70s. per ton. Regents, fair to good, 80s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 6 | 0 18 0 | Evergreens, in var., per dozen | 0 | 0 24 0 |
| Arbor-vitæ (golden), per dozen | 0 | 0 18 0 | Ferns, in var., dozen | 4 | 0 18 0 |
| — common, dozen | 0 | 0 12 0 | Foliage Plants, various, each | 2 | 0 10 0 |
| Arum Lilies, dozen | 0 | 18 0 | Fuchsias, per dozen | 0 | 0 0 0 |
| Begonias, per dozen | 4 | 0 12 0 | Marguerite Daisy, per dozen | 2 | 0 12 0 |
| Bouvardia, dozen | 12 | 0 18 0 | Myrtles, per dozen | 6 | 0 12 0 |
| Chrysanth., per doz. | 6 | 18 0 | Palms in variety, each | 2 | 6 21 0 |
| Cyperus, per dozen | 4 | 0 12 0 | Pelargoniums, scarlet, per dozen | 3 | 0 0 |
| Dracæna terminalis, per dozen | 30 | 0 60 0 | | | |
| — viridis, per doz | 12 | 0 24 0 | | | |
| Erica, various, doz. | 9 | 0 12 0 | | | |
| Euonymus, in var., per dozen | 6 | 0 18 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 | 0 4 0 | Marguerites, 12 bun. | 3 | 0 6 0 |
| Arum Lilies, 12 blms. | 6 | 0 8 0 | Mignonette, 12 bun. | 1 | 6 3 0 |
| Asters, 12 bunches | 2 | 0 3 0 | Pelargoniums, per 12 trusses | 0 | 0 6 1 0 |
| Azalea, 12 sprays | 2 | 0 0 0 | — scarlet, 12 trusses | 0 | 4 0 9 |
| Bouvardias, per bun | 0 | 6 1 0 | Rhodanthe, 12 bun. | 6 | 0 9 0 |
| Camellias, 12 blms. | 1 | 0 8 0 | Roses (indoor), doz. | 1 | 0 3 0 |
| Carnations, 12 blms | 1 | 0 3 0 | — 12 bunches | 6 | 0 12 0 |
| Chrysanth., 12 blms | 1 | 0 6 0 | Stephanotis, 12 spr. | 5 | 0 8 0 |
| — 12 bunches | 5 | 0 12 0 | Tropæolum, 12 bun. | 1 | 0 1 6 |
| Eucharis, per dozen | 3 | 0 6 0 | Tuberoses, 12 blms. | 0 | 0 1 0 |
| Gardenias, 12 blooms | 3 | 0 6 0 | Violets, 12 bunches | 1 | 0 3 0 |
| Lapageria, white, 12 blooms | 2 | 0 3 0 | — Czar, Fr., bunch | 1 | 0 1 |
| — red, 12 blooms | 1 | 0 2 0 | — Parme, Fr., bun. | 4 | 0 5 0 |
| Lil. longifl., 12 blms. | 6 | 0 8 0 | | | |

## SEEDS.

LONDON: *Oct.* 14.—Not much business was done on to-day's market. Good new French red Clover seed is now offering at very moderate rates. There is no change in either Alsike, white, or Trefoil. Hemp seed, being in abundant supply, is cheaper. For Canary seed the demand keeps slow. Winter Tares are in small request, at the late reduction in price. The colder weather has somewhat hardened the value of boiling Peas. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

At Mark Lane on Monday prices of both English and imported Wheats ruled quite 6*d.* higher, whilst on some descriptions a larger advance was obtained. Grinding Barley held its value steadily, and fine malting, being scarce, was firm; but inferior grades of the latter continued dull and drooping in value. Beans advanced 1*s.* to 1*s.* 6*d.* per quarter, and Peas 6*d.* Oats realised full rates to 3*d.* advance. Round Maize was dearer, and flat corn steady.—On Wednesday trade in general had a firm tone, but without activity. English and foreign Wheats were firmly held, but the demand was not sufficient to establish any quotable advance. Flour tended against buyers. All spring corn was equally as firm as Wheat, but also very quiet. Barley was firm, and Maize dull.—Average prices of corn for the week ending Oct. 10:—Wheat, 30*s.* 7*d.*; Barley, 30*s.* 11*d.*; Oats, 18*s.* 8*d.* For the corresponding period last year:—Wheat, 32*s.* 2*d.*; Barley, 32*s.*; Oats, 19*s.* 1*d.*

## FRUIT, ROOTS, AND VEGETABLES.

COLUMBIA (East London): *Oct.* 14.—Good supplies of fruit and vegetables; prices firm. Quotations:—Apples, 2*s.* to 4*s.* per bushel; Pears, 3*s.* to 4*s.* 6*d.* per bushel; Cauliflowers, 1*s.* to 2*s.* per dozen; bunch greens, 4*s.* to 5*s.* per dozen; ditto Turnips, 3*s.* to 4*s.* per dozen; ditto Carrots, 1*s.* 6*d.* to 2*s.* per dozen; ditto Parsley, 1*s.* to 1*s.* 6*d.* per dozen; Cabbages, 4*s.* to 6*s.* per dozen; English Onions, 3*s.* to 4*s.* per cwt.; pickling, ditto, 3*s.* 9*d.* to 4*s.* 6*d.* per cwt.; foreign Onions, 3*s.* to 3*s.* 6*d.* per bag; ditto, in boxes, 7*s.* to 8*s.* 6*d.* per box; Carrots, in sacks, 30*s.* to 50*s.* per ton; Mangels, 22*s.* 6*d.* to 25*s.* per ton.

STRATFORD: *Oct.* 13.—Again the supplies to this market have been good during the past week, as also the attendance of buyers, consequently a fair trade was done at the following quotations:—Cabbages, 2*s.* to 5*s.* per tally; red Cabbage, 4*s.* to 5*s.* per tally; Savoy, 5*s.* to 8*s.* per tally; greens, bunch, 2*s.* 6*d.* to 4*s.* per dozen; Cauliflowers, 1*s.* to 2*s.* per dozen; Mangels, 15*s.* to 20*s.* per ton; Turnips, 40*s.* to 80*s.* per ton; ditto, bunch, 2*s.* to 4*s.* per dozen; Apples, English, 1*s.* 6*d.* to 4*s.* 6*d.* per bushel; Peas, 2*s.* 6*d.* to 3*s.* per bushel; Onions, English, 70*s.* to 90*s.* per ton; ditto, pickling, 90*s.* to 100*s.* per ton; ditto, foreign, 2*s.* 6*d.* to 3*s.* per bag; Spanish Onions, 8*s.* 6*d.* per case; Carrots for cattle, 26*s.* to 30*s.* per ton; ditto, household, 40*s.* to 45*s.* per ton; ditto, bunch, 1*s.* 9*d.* to 2*s.* per dozen; Cucumbers, framed, 3*s.* per dozen; Beans, 22*s.* to 28*s.* per quarter; Peas, 28*s.* to 35*s.* per quarter.

## CATTLE.

At Copenhagen Fields on Monday the general trade varied but slightly from Monday se'nnight. Quite an inconsiderable number of best cattle and sheep was picked out at rather more money, but apart from that prices remained where they were before. Quotations:—Beasts, 3*s.* 6*d.* to 4*s.* 4*d.*, and 4*s.* 8*d.* to 5*s.* 2*d.*; calves, English, 4*s.* 4*d.* to 4*s.* 8*d.*; Irish, 2*s.* to 2*s.* 4*d.*; sheep, 3*s.* 8*d.* to 4*s.* 2*d.*, and 4*s.* 8*d.* to 5*s.* 4*d.*; pigs, 4*s.* to 4*s.* 8*d.*

*Oct.* 15.—Trade is dull in tone. Supplies of beasts and sheep were about the average for Thur-day, and with a slow demand prices were weak. Fine calves were steady; other kinds dull, and pigs quiet, but firm for small breeds.

## HAY.

WHITECHAPEL: *Oct.* 13.—Trade very dull, with short supplies. Clover, prime, 80*s.* to 107*s.*; inferior, 60*s.* to 75*s.* Hay, prime, 65*s.* to 92*s.*; inferior, 36*s.* to 60*s.* Straw, 28*s.* to 38*s.* per load.

*Oct.* 15.—There was a short supply on sale. The trade was quiet, at late rates.

CUMBERLAND (Regent's Park): *Oct.* 13.—A fair supply. The favourable weather caused a slightly increased demand at the following prices:—Clover, best, 95*s.* to 102*s.* 6*d.*; second, 60*s.* to 90*s.* Hay, best, 75*s.* to 87*s.* 6*d.*; second, 50*s.* to 70*s.* Straw, 30*s.* to 36*s.* per load.

STRATFORD: *Oct.* 13.—Clover, 75*s.* to 100*s.*; and meadow hay, 80*s.* to 90*s.* per load.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Oct.* 13.—Markets still slack. Best samples move off in small quantities at steady value, but all other grades are a dull and difficult sale at irregular prices. Regents, 60*s.* to 80*s.*; Magnum Bonums, 50*s.* to 60*s.*; Early Roses, 70*s.* to 80*s.*; Hebrons, 100*s.* to 110*s.* per ton.

COLUMBIA (East London): *Oct.* 14.—Demand for Potatos better. Beauty Hebrons, 70*s.* to 80*s.*; Reading Heros, 60*s.* to 80*s.*; Early Roses, 60*s.* to 65*s.*; Champions, 45*s.* to 50*s.*; Victorias, 50*s.* to 65*s.*; Regents, 55*s.* to 70*s.*; and Magnums, 50*s.* to 80*s.* per ton.

STRATFORD: *Oct.* 13.—Magnums, 45*s.* to 60*s.*; Regents, 50*s.* to 60*s.*; and Champions, 45*s.* to 55*s.* per ton.

*Imports.*—The imports into London last week consisted of 1828 bags from Hamburg, 50 from Boulogne, and 2 bags from Rotterdam.

## COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Lambton, 18*s.*; Wear, 16*s.* 6*d.*; Binchester, 16*s.* 6*d.*; South Durham Tees, 16*s.* 6*d.*; Hetton, 18*s.* 6*d.*; Hetton Lyons, 16*s.* 6*d.*

**Government Stock.**—Consols closed on Monday and Tuesday at 100⅛ to 100⅛ for both delivery and account. Wednesday's prices were 100 to 100⅛ for both transactions. The final quotations of Thursday were similar to those of Monday and Tuesday.

**To Seed Merchants.**

WANTED, OFFERS FOR
150 Bushels of WILLIAM I. PEAS.
75 „ RINGLEADER.
25 „ DAY'S EARLY SUNRISE.
Samples on application to
WILLIAM JONES, Bailiff, Newton Court, Pembridge, Herefordshire.

PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract:—
From the *Gardeners' Chronicle* and *Agricultural Gazette*, London:—"MONSTER BROCCOLI.—A few days since, Mr. C. Kessell, of The Coombe, Penzance, who has been a Broccoli grower for upwards of half a century, and was one of the first to get the Early Broccoli of Cornwall into the London and Northern Markets, cut two monster Broccoli, which together weighed 50 lb. They were the sort known as Pontey's Late White Wilcove. The huge scales at the smelting-house had to be called into requisition to ascertain the weight of the plants." Retail price, *2s. 6d.* per ounce. Special quotations to the trade. Apply to
E. WILSON SERPELL, 21, Cornwall Street, Plymouth.

**100 Herbaceous and Alpine Plants for 25s**
RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rockwork, which produce flowers and render the garden attractive all through the year. New LIST of sixty-four pages free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

MILLTRACK MUSHROOM SPAWN.—The best and cheapest ever offered. Quality guaranteed. *4s. 6d.* per bushel (16 cakes), *6d.* per bushel package; 2 cakes as samples, free parcel post, *1s. 3d.* Trade supplied very low
MORLE AND CO., Manufacturers, Child's Hill Farm, N.W.; and 1 and 2, Fenchurch Street, London, E.C.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
*4d.* per bushel; 100 for *25s.*; truck (loose, about 2 tons), *40s.*; 4-bushel bags, *4d.* each.
LIGHT BROWN FIBROUS PEAT, *5s. 6d.* per sack; 5 sacks *25s.*; sacks, *4d.* each.
BLACK FIBROUS PEAT, *5s.* per sack, 5 sacks *22s.*; sacks, *4d.* each.
COARSE SILVER SAND, *1s. 9d.* per bushel; *15s.* per half ton, *26s* per ton in 2-bushel bags, *4d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, *1s.* per bushel.
SPHAGNUM MOSS, *8s. 6d.* per sack
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G SMYTH, *21*, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

GENUINE GARDEN REQUISITES,
as supplied to the Royal Gardens.
FRESH COCOA-NUT FIBRE REFUSE, 4-bushel Bags, *1s.* each; 30 for *25s.*—bags included: 2-ton Truck, free on Rail, *25s.* BEST BROWN FIBROUS KENT PEAT, *5s.* per Sack; 5 for *22s. 6d.*; 10 for *35s.*; 20 for *60s.* BEST BLACK FIBROUS PEAT, *4s 6d* per Sack; 5 for *20s*; 10 for *30s.* COARSE BEDFORD SAND, *1s. 6d.* per Bushel; *14s.* per ½ Ton; *25s.* per Ton. SPECIALITÉ TOBACCO PAPER, *1d.* per lb.; 28 lb., *21s.*; cwt, *70s.* FINEST TOBACCO CLOTH, *8d.* per lb.; 28 lb. for *18s.* LEAF-MOULD, *5s.* per Sack. PEAT MOULD, *4s.* per Sack. YELLOW FIBROUS LOAM, *3s.* per Sack. CHARCOAL, *2s. 6d.* per Bushel: Sacks, *4d.* each. BONES, GUANO, SPHAGNUM, &c. LIST Free. Special Prices to the Trade for Cash.
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| Supplied in Tins, | | 1 | 0 | each. |
| „ | „ | 2 | 6 | „ |
| „ | „ | 5 | 0 | „ |
| Or in Bags, | ¼ cwt. | 12 | 0 | per Bag. |
| „ | ½ „ | 20 | 0 | „ |
| „ | 1 „ | 37 | 6 | „ |

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The COLONIAL MANURE being powerful and lasting in its effects, very little need be used; consequently it will be found more economical than any other Chemical Manure.

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*who only supply the Wholesale Trade and Export Merchants.*

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Can be had from all Nurserymen and Seedsmen.

COCOA-NUT FIBRE REFUSE.—Best and fresh only, *1s.* per bag; 15 bags, *12s.*; 30 bags, *22s*; sent to all parts; trucks, *23s.*, free to Rail. PEAT and LOAM.—A. FOULON, 32, St. Mary Axe, London, E.C.

12-oz. Sample Packets, free by post, 12 Stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., *£6 6s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, *15s.* per ton per Truck. Sample Bag, *5s.*; 5 Bags, *22s. 6d.*; 10 Bags, *45s.* Bags included. Fresh SPHAGNUM, *10s. 6d.* per Bag, SILVER SAND, Coarse or Fine, *22s* per Truck of 4 Tons.
WALKER AND CO., Farnborough Station, Hants.

PEAT.—Superior Black or Brown Fibrous PEAT, for Rhododendrons, Azaleas, &c., as supplied to Messrs. J. Waterer and other noted growers. Six tons, loaded on trucks at Camberley Station, S.W.R., *£4 4s.*
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PEAT.—1000 cubic yards of excellent Peat, *6s.* per cubic yard, on rail; from 10 to 20 yards in a truck. Special low rates to all parts.
W. SHORT, Horticultural Co., Midhurst, Sussex.

COCOA-NUT FIBRE REFUSE: newly made. The same as supplied to the Horticultural Society.—Truck-load of 2 tons, *23s.*; twenty sacks of same, *14s.*; forty, *25s.*, sacks included. All Free on to Rail. Cash with orders.—J. STEVENS AND CO., Cocoa nut Fibre Merchants, "Greyhound Yard," and 153, High Street, Battersea, S.W.

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TWO PRIZE MEDALS.
**Quality, THE BEST in the Market.** (All sacks included)
PEAT, best brown fibrous .. *4s. 6d.* per sack; 5 sacks for *20s.*
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PEAT MOULD, „ ..
SILVER SAND, coarse, *1s. 3d.* per bush., *12s.* half ton, *22s.* ton.
RAFFIA FIBRE, best only .. .. .. 1*d.* per lb.
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MUSHROOM SPAWN, finest Milltrack .. *5s.* per bushel.
SPHAGNUM MOSS, all selected, *2s.* per bush., *6s.* per sack.
**COCOA-NUT FIBRE REFUSE** (by Chubb's special process), sacks, *1s.* each; 10 sacks, *5s.*; 15 sacks, *7s.*; 20 sacks, *12s.*; 30 sacks, *25s*; 40 sacks, *30s.* Truck-load, loose, free on rail, *25s.* Limited quantities of G., special quality, granulated, in sacks only, *2s.* each. Terms, strictly Cash with order.
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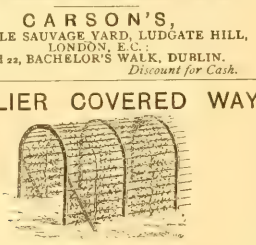
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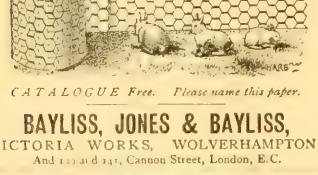
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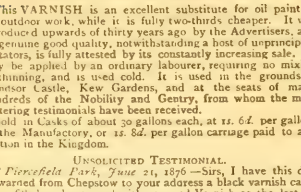
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Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 2*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

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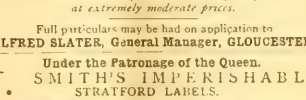
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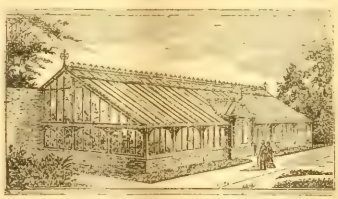



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Admitted by the entire Trade, after public and formal challenges, to be the MOST ECONOMICAL OF FUEL, the MOST POWERFUL, the SIMPLEST, and the CHEAPEST Hot-water Boiler in the Market.
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**Russia Mat and Raffia Merchants.**

MATS and RAFFIA FIBRE supplied at lower prices than any other house. The Trade and Dealers only supplied. For Wholesale Prices, apply to the Importers, MARENDAZ AND FISHER, 7, 8, and 9, James Street, Covent Garden, W.C.

**Raffia Fibre.**

J. BLACKBURN AND SONS have a large Stock, and are offering at reduced prices. Samples and particulars at 4 and 5, Wormwood Street, E.C.

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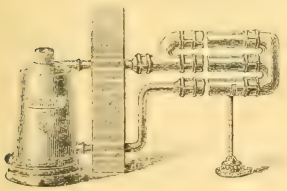
J. BLACKBURN AND SONS are offering ARCHANGEL MATS at a lower rate than for several years for present orders. Also PETERSBURG MATS and MAT BAGS. Price and samples on application. 4 and 5, Wormwood Street, London, E.C.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest prices of WATSON AND SCULL, 90, Lower Thames St., London, E.C.

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## CIRCULATING COPPER BOILER,

FOR HEATING CONSERVATORIES, GREENHOUSES, &c.



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| 8-in. diam. to heat 30 ft. of 2-in. pipe. | £3 | 0 | 0 |
| 9-in. ,, to heat 100 ft. of 2-in. pipe, | £3 | 15 | 0 |
| 10-in. ,, to heat 150 ft. of 2-in. pipe, | £4 | 10 | 0 |
| 12-in. ,, to heat 250 ft. of 2-in. pipe, | £5 | 15 | 0 |

This is the most economical Boiler known for heating water by gas. The interior consists of corrugated discs, so arranged that in the smallest size there are nearly 800 inches of heating surface. It will maintain 200 degrees in 20 feet of 3-inch pipe, with 7 feet of gas per hour.

**TESTIMONIAL.**

"I want another Sphinx Boiler, same as supplied last January. The Gentleman whose Conservatory I heated with it is so pleased he has recommended it to one of his neighbours."—H. FRANCE, *Addington Road, Croydon.*

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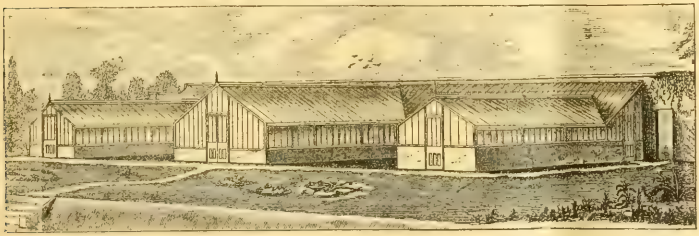
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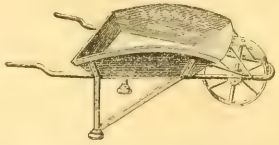
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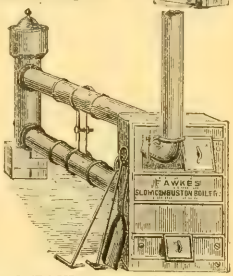
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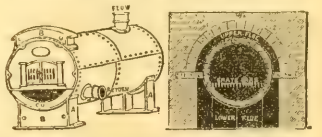



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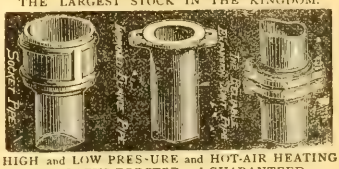
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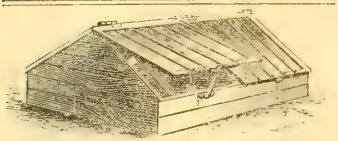
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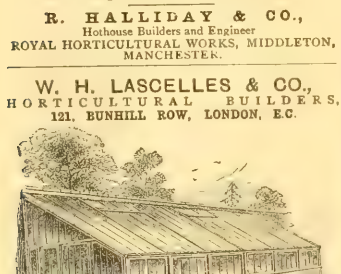
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| 12 ft. .. .. | 8 ft. .. .. | £20 0 .. .. | £5 15 |
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| 30 ft. .. .. | 15 .. .. | £71 0 .. .. | £12 5 |
| 35 ft. .. .. | 16 .. .. | £89 10 .. .. | £13 5 |
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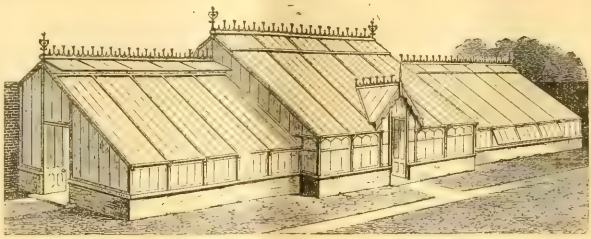
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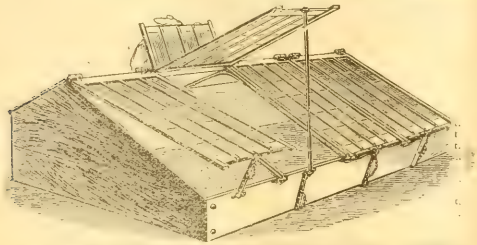
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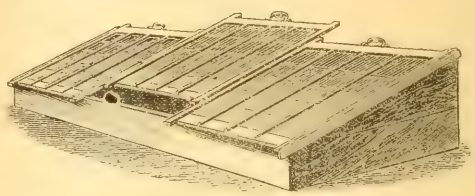


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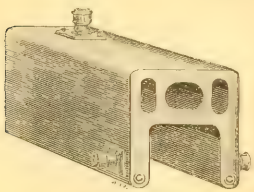
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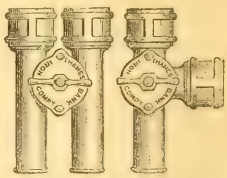
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THE

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## APPEAL TO THE BENEVOLENT

On behalf of Two Sisters, aged respectively 70 and 72, who have lived together all their lives (the younger has been an invalid for many years), but the leases of their property having fallen into the hands of the Ecclesiastical Commissioners some six years ago, have vainly struggled to obtain a living by letting apartments, the little money they had saved being now quite exhausted, and owing over a year's rent, make this Appeal, hoping to save their home from being broken up, and parting with everything they possess. Will any kind Friends help them in their deepest distress? The following persons have kindly allowed a reference to be made to them, and will give every information respecting the genuineness of this Appeal:—

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Mrs. DOWNING, 19, Lupus Street, Pimlico, S.W.
Mr. J. KEASLEY, 62, Saltoun Road, Brixton, S.W.
Mr. THOS. VERNON, *Weekly Dispatch* Office.
Mr. J. P. FULLER, *Weekly Dispatch* Office.
Mr. H. W. PERCY, *Weekly Dispatch* Office.
Mr. W. RICHARDS, 41, Wellington Street, Strand, W.C.

*Contributions will be gratefully received and thankfully acknowledged by* Mr. W. RICHARDS. "Gardeners' Chronicle" Office, 41, Wellington Street, Strand, W.C.

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### Putney, S.W.—Expiration of Lease.
UNRESERVED CLEARANCE SALE of beautifully grown NURSERY STOCK, GLASS ERECTIONS, &c., by order of Messrs. S. Mahood & Son, whose lease expires at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Windsor Nurseries, Lower Richmond Road, Putney, S.W., ten minutes' walk of either of the Putney Stations on TUESDAY and WEDNESDAY NEXT, October 27 and 28, at 12 o'Clock punctually each day, the whole of the beautifully grown NURSERY STOCK, in excellent condition for removal, comprising many thousands of Evergreen and Deciduous Shrubs, 1 to 4 feet, 10,000 Aucubas, thousands of green and variegated Euonymus, 5000 Hollies, 3 to 8 feet, all recently transplanted; Forest Trees in variety; 5000 Ivies; 2000 oval-leaved Privet, 3 to 6 feet; 2000 Standard and Dwarf-trained Fruit Trees; Greenhouse Plants in variety; Maidenhair Ferns; Ficus, 200 fine p'ants of Eucharis amazonica; the erections of Eight GREENHOUSES, with a total length of 400 feet, several PITS, the whole of the HOT-WATER PIPING, BOILERS, &c.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Wednesday Next.

A consignment of CAMELLIAS, AZALEAS, PALMS, FICUS, RHODODENDRONS, and other PLANTS, from Belgium; beautifully grown FERNS and PALMS, also 600 choice named Standard ROSES from English Nurseries, 100 TEA ROSES in pots, Home-grown LILIES, NARCISSUS in variety, Dutch FLOWER ROOTS, and an assortment of Hardy PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 28, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

### Hendon, N.W.

CLEARANCE SALE of the whole of the NURSERY STOCK, GREENHOUSE PLANTS, GLASS ERECTIONS, and EFFECTS, by order of Mr. J. H. Pounce, the Land being required for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., ten minutes' walk from the Railway Station, on THURSDAY, October 29, at 12 o'Clock precisely, in consequence of the large number of lots, the whole of the well grown STOVE and GREENHOUSE PLANTS, and Specimen Border and other SHRUBS, particularly suitable for the London Cut Flower and Shop Trade, for which the Stock has been specially cultivated. The Sale will include 150 pots of Eucharis amazonica, 15,000 Carnations of the best named sorts for cutting, Palms, Pelargoniums, 50,000 Ferns in thumbs and other sizes, strong Maréchal Niel Roses in pots, Chrysanthemums, 20,000 Golden and Green Euonymus, 2000 Standard and Dwarf Roses, chiefly Teas, hundreds of fine Shrubs for Planting, and large quantities of other Stock too numerous to mention, also the Erections of 9 GREENHOUSES and PITS, the whole of the HOT-WATER PIPING, BOILERS STAGING, 200 LIGHTS and BOXES, Bay Market HORSE, 2 Spring CARTS, HARNESS, and other EFFECTS.

On view the day prior and morning of Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### West Wickham.
(Three minutes' walk from the Station.)

TWO DAYS' SALE of unusually well grown NURSERY STOCK, by order of Mr. T. Cook, to clear the ground.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, West Wickham, Kent, on THURSDAY and FRIDAY, October 29 and 30, at 12 o'Clock precisely each day, a large quantity of remarkably well grown NURSERY STOCK, the whole of which has been carefully prepared for removal. The Stock comprises 8,000 Laurels, 3½ to 4 feet; 1000 fine Portugal Laurels, 5 to 6 feet; 3000 oval-leaved Privet, 1500 green Euonymus for pots, a large assortment of specimen Conifers and Evergreens, 1500 Green Hollies, 1 to 5 feet; 1500 Common Privet, 3 to 4 feet; 2000 Spruce Firs, 4 to 6 feet, for Christmas Trees; 6000 Deciduous Flowering Shrubs, 2000 Ornamental and Forest Trees, 2000 Gooseberries and Currants, and a great variety of other Trees and Shrubs.

Now on view. Catalogues had on the Premises, also at Mr. T. COOK'S Nursery, Beckenham, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 30, at half-past 12 o'Clock precisely, an importation of Cattleya Dowiana, in good order, and extra large masses; Lælia præstans, Cattleya superba splendens, and many other ORCHIDS; also magnificent specimens of:—

| | |
|---|---|
| Cypripedium grande | Cattleya Harrisoni, fine variety, in flower |
| ,, Chantinii | Lælia purpurata, do., do. |
| ,, Spicerianum, in flower | Oncidium tigrinum, do., do. |
| Lælia autumnalis, do. | Odontoglossum Insleayi, do, do; &c. |
| Cattleya labiata, true autumn-flowering variety | |

On view morning of Sale, and Catalogues had.

### Oncidium Jonesianum (Rchb. f.)
OVER ONE THOUSAND SPLENDID PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 30, at half-past 12 o'Clock precisely, a grand importation of ONCIDIUM JONESIANUM, in simply superb order, every bulb and eye being perfect. There are rare masses among them, but every plant is fine, the greatest care and trouble having been exercised in collecting them. ONCIDIUM JONESIANUM is without doubt one of the finest introductions: it has extremely beautiful large white flower, the lip having a reddish brown crest, and the sepals and petals spotted with chocolate. It is very free flowering, as many as fifteen flowers on a spike being pronuced, and the numerous spikes on the plants offered demonstrate how floriferous it is.

On view morning of Sale, and Catalogues had,

### Sunbury, Middlesex.
IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Turtle, to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, Middlesex, ten minutes' walk from the Railway Station, on MONDAY, November 2, at 12 o'Clock precisely, the following VALUABLE STOCK, comprising 4000 Apples, one and three years old, including among other varieties Lord Suffield, Keswick Codlin, Ecklinville Seedling, Stirling Castle, Warner's King, Worcester Pearmain; 3000 Victoria Plums (Maidens); 300 Pears; 500 Farleigh Cluster and other Damsons (Maidens); 10,000 fine Dwarf Roses, on Manetti, leading sorts; 100,000 Manetti Stocks; 4000 Climbers, of sorts; 1000 Tea Roses in pots, Niphetos, Maréchal Niel, and others, for forcing; 2000 Double White Primulas, in 48-pots, extra fine; 300 Adiantum cuneatum; 200 Lomaria gibba; 7000 Privet; a variety of Ornamental Trees and Shrubs, in fine condition for removal, and 3½ acres of Magnum Bonum Potatos. The Fruit Trees are specially fine, forming part of the celebrated stock of the late firm of Osborn & Sons.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

### Tottenham.

Adjoining the Tottenham Hale Station, Great Eastern Railway.

SALE OF THE WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware to SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 3, at 12 o'Clock precisely, a large quantity of beautifully-grown NURSERY STOCK, which has been carefully cultivated and judiciously prepared for removal, including 5000 oval-leaved Privet, 3½ to 4½ feet, fine bushy plants, grown singly; 2000 Caucasian Laurels, 3 to 5 feet, robust plants; 8000 Dwarf Roses, embracing all the leading varieties of Hybrid Perpetuals, Teas, Moss, China Roses, &c.; 6000 Standard Ornamental Trees, 1000 Euonymus Japonica, 1 to 2 feet, for potting, bushy plants; 5000 strong Red, White, and Black Currants, 5000 Hardy Climbers in pots, all well grown; 1000 Hedera maderensis variegata, 1000 of the new Double White Violet, Comptе Brazza, 1000 of the new, hardy and beautifully pure white Passion-flower, Constance Eliot; 50,000 exceptionally strong Seakale and Asparagus for forcing, 4000 imported clumps of Spiræa japonica, 5000 showy border Carnations of the finest sorts, 5000 good bulbs of Lilium candidum, 2000 L. speciosum, rubrum, roseum, and album monstrosum; 2000 Lythrum spectabilis, 25,000 fine German Crowns of Lily of the Valley, and large quantities of various Herbaceous Plants, Bulbs, &c.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Nurseries are easy of access, being adjacent to the Railway Station, and an inspection is invited of the unusually well-grown Stock to be offered in this Sale.

### Betchworth, Surrey.—Expiration of Tenancy.
CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Ivery & Son to SELL by AUCTION, on the Premises, The Barley Mow Nursery, Betchworth, one mile from the station, on TUESDAY, November 3, at 12 o'Clock precisely, by order of Messrs. Ivery & Son, the whole of the well-grown NURSERY STOCK, comprising a quantity of Common Yews, Aucubas, Birch, Beech, Lime, Hornbeam, Scotch and Spruce Firs; an assortment of choice Evergreen Shrubs, comprising Cedrus Deodara, Thuia Lobbii, and occidentalis; Euonymus, Box, &c.; also Ivies in pots, Pampas and Feather Grass, Roses, Mulberries, Gooseberries, and Currants.

Now on view. Catalogues may be had on the Premises; at the Dorking Nurseries; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Hampton, Middlesex.

IMPORTANT SALE of a thousand beautifully grown FRUIT TREES, cultivated from the strain of the late Messrs. Osborn & Sons, whose reputation for the growth of Fruit Trees was unsurpassed, comprising Plums, Cherries, Peaches, Nectarines, Damsons, Apricoss, Pears, Apples, of the best and most prolific varieties; 7000 Oval-leaved Privet, 1000 Thuia Lobbii, bushy plants; 5000 Dwarf Roses, of the first-named varieties; and other STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL the above valuable stock by AUCTION, on the Premises, Osborn's Nursery, Hampton, close to the Hampton Railway Station, on WEDNESDAY, November 4, at 12 o'Clock precisely, by order of Mr. Will Tayler.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

### Bromley, Kent.

Two days' CLEARANCE SALE of beautifully grown NURSERY STOCK, by order of Mr. G. Stidolph, who is retiring from business owing to declining health.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Bromley, Kent, close to the Railway Station, S.E.R., on THURSDAY and FRIDAY, November 5 and 6, at 12 o'Clock precisely each day, without reserve, the whole of the unusually well grown NURSERY STOCK, which is in excellent condition for removal, comprising thousands of thriving young Conifers for border planting; 2000 Cupressus Lawsoni, 5000 Privet, 2000 green and variegated Hollies, 2000 Aucubas, 1000 Laurels of sorts, and 2000 Irish Ivies, 1000 Standard and other Roses, Standard Ornamental Trees, Deciduous Flowering Trees, Fruit Trees, and other Stock, fully described in Catalogue.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B. Messrs. PROTHEROE AND MORRIS beg to call attention to the above Stock, which is in remarkably fine condition, and worthy of an inspection.

### Godalming.

Important Two Days' SALE of VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to SELL by AUCTION, on the Premises, The Milford Nurseries, Godalming, on TUESDAY and WEDNESDAY, November 10 and 11, several Acres of valuable NURSERY STOCK.

### Sutton, Surrey.

Two days' Sale of well grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. Potten to SELL by AUCTION, on the Premises, The Mid-Surrey Nurseries, Sutton, on THURSDAY and FRIDAY, November 12 and 13, a large quantity of valuable NURSERY STOCK.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### Thursday Next.—(Sale No. 7002.)
5000 WHITE ROMAN HYACINTHS.
5000 SOUTH AFRICAN TUBEROSES.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 29.

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No. 7002.)
ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, Without Reserve, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 29, at half-past 12 o'Clock precisely (in consequence of the death of Mr. W. J. Cross), the stock of ESTABLISHED ORCHIDS of Messrs. Cross & Steer, of Salisbury, comprising several hundred plants of Odontoglossum crispum, including a various "yellow" variety; good forms of Cattleya Dowiana, C. maxima, Cypripediums, Dendrobes, Lælias, &c.

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No. 7002.)
LÆLIA PURPURATA.

Seven cases received direct from Brazil in very fine condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 29; also a fine importation of DENDROBIUM JOHANNIS and BIGIBBUM.

On view morning of Sale, and Catalogues had.

### Cart House Lane Nursery, Horsell.
About 2 miles from Woking Station.

SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. WATERER AND SONS have received instructions from Mr. Richard Collyer, whose lease is expiring, to SELL by AUCTION, on the Premises, as above, on TUESDAY, October 27, and following day, commencing at 12 o'Clock precisely on each day, the FIRST PORTION of the well-grown NURSERY STOCK on the above land, in excellent condition for removal, having all been moved within two years, comprising a great variety of very fine Ornamental Evergreen Trees and Shrubs, including many Specimen Trees, 20,000 Green and Variegated Standard and other Hollies, 2 to 9 feet; 20,000 Yews, from 2 feet 6 inches to 7 feet; several thousand Common, Caucasian, and Portugal Laurels, Retinospora, Picea, Thuia, Cupressus Lawsoniana and erecta, Thuiopsis, Privet, 1000 Rhododendrons, principally choice named sorts; 5000 Spruce Firs, 2000 Half-Standard and Standard Roses of the choicest varieties, 6000 Manetti Stocks, 6000 Crab and Plum Stocks, 15,000 Birch, Poplar, Ash, and Chestnut Trees, 2 to 12 feet; and other Stock.

The Auctioneers would draw the special attention of purchasers requiring plants for ornamental and effective purposes to this Sale, as the whole of the lots, including the Specimen Trees and Shrubs, are in perfect condition for removal.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at their Offices, Chertsey, Weybridge Station, and High Street, Walton-on-Thames, Surrey.

**Edinburgh.**

Drummond Brothers having resolved to give up the Florist and Nursery branch of their business,

MR. ALEXANDER DOWELL will SELL by AUCTION, at Larkfield Nursery, Ferry Road, Edinburgh, on WEDNESDAY and THURSDAY, October 28 and 29, at 12 o'Clock each day, a very fine lot of HOLLIES, YEWS, AUCUBAS, RHODODENDRONS, WEEPING TREES, &c., mostly suitable for immediate effect.

Now on view. Catalogues to be had from DRUMMOND BROTHERS, Agricultural Seedsmen, 82, George Street, Edinburgh.

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**Sale at Chester of Valuable Nursery Stock,** to clear ground (portion of the Nurseries of the late firm of Messrs. Chivas & Weaver) on account of expiration of lease. The Sale consists of EVERGREENS, FLOWERING SHRUBS, ORNAMENTAL and FRUIT TREES, FOREST and UNDERWOOD TREES.

MESSRS. CHURTON, ELPHICK, AND CO. will SELL the above by PUBLIC AUCTION (by instructions of Messrs. James Dickson & Sons, Chester), at the Eaton Road Nurseries, Chester (15 minutes' walk from either Chester Railway Station), on THURSDAY, October 29, at 11 o'Clock precisely.

May be now viewed, and Catalogues obtained on the Premises; also from the Auctioneers and Vendors.

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**Denham Road Nursery, near Uxbridge, Middlesex.**

To GENTLEMEN, NURSERYMEN, and OTHERS.

MESSRS. NORMAN and SON are directed by Mr. J. M. Jeffrey to SELL by AUCTION, on the Premises, as above, on MONDAY, November 2, at 11 for 12 o'Clock, an assortment of FRUIT TREES, consisting of Standard and Maiden Apples and Pears; Dwarf ROSES, sorts; CONIFERS in variety, viz., Retinosporas, Cupressus, Junipers, Austrian Pines, extra transplanted, 2 feet to 4 feet high; finely grown YEWS, from 7 feet to 10 feet high; also Oval-leaved PRIVET, Tree BOX, and other EVERGREENS and DECIDUOUS TREES and SHRUBS, CURRANT BUSHES, RASPBERRY CANES, STRAWBERRY RUNNERS, CHRYSANTHEMUMS, &c.

May be viewed three days prior to the Sale, and Catalogues had at the Offices of Messrs. NORMAN AND SON, Uxbridge, Middlesex, and Denham and Beaconsfield, Bucks.

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**Edinburgh.—Sale of Orchids, &c.**

LYCASTE SKINNERI ALBA.

ZYGOPETALUM MACKAYI MACRANTHUM (true).

*Both expected to be in bloom.*

Drummond Brothers having resolved to give up the Florist and Nursery branch of their Business,

MR. ALEXANDER DOWELL will SELL by AUCTION, at his Rooms, 118, George Street, Edinburgh, on TUESDAY, November 3, at 12 o'Clock, a COLLECTION of ORCHIDS, &c., including above varieties; Dendrobium nobile Wallichianum, Cymbidium Lowianum, Phaius maculatus and Wallichii, Cœlogyne cristata—Chatsworth variety, and many other good sorts.

Catalogues on application to DRUMMOND BROTHERS, Agricultural Seedsmen, 82, George Street, Edinburgh.

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**Sim's Nursery.**

FOR ABSOLUTE SALE, the Lease and Goodwill of this OLD-ESTABLISHED BUSINESS. Also about 1000 Ferns, some fine Todeas, for which this Nursery is so famous, and the remainder Shrubs and Trees.

MESSRS. WOODS and SNELLING will SELL the above by AUCTION, on the Premises, Sidcup Hill Nursery, Foots Cray, on SAURDAY, November 7, at 12 for 1 o'Clock.

Particulars and Catalogues of the Auctioneers, 19 and 20, Walbrook and Sidcup.

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**Streatham Park Nursery, Mitcham Road, Streatham, SURREY, S.W.**

SALE of SURPLUS STOCK.

MESSRS. PEED AND GREAVES are favoured with instructions from the well-known firm of Messrs. J. Peed & Sons to SELL by AUCTION, on the Premises, on TUESDAY, November 10, at 11 o'Clock precisely, the above well-grown surplus NURSERY STOCK, consisting of 500 Fruit Trees, 500 Standard and Dwarf Roses, 500 Forest Trees and Shrubs (several being fine specimens), comprising Planes, Elms, Birch, Limes, and Poplars; 500 very choice Thorns, 500 mixed Shrubs, 500 Laurels, &c.

May be viewed fourteen days prior to Sale, and Catalogues had at the Roupell Park Nurseries, Norwood Road, S.W.; on the Premises, and of the Auctioneers, Loughborough Road, Brixton, S.W.

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TO BE DISPOSED OF, with Immediate Possession, A genuine SEED, FLORIST, and JOBBING BUSINESS, Nine Plant-houses, a moderate quantity of Land, and an Eight-roomed Dwellinghouse, which may be had furnished. Situate in the main thoroughfare of an important town, 20 miles from London (population 20,000).

J. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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**To Nurserymen, Florists, and Others.**

TO BE LET or SOLD, on very advantageous terms, WILLS' NURSERY, situate in the Fulham Palace Road, Hammersmith, comprising an area of an acre and a half. There are several Hothouses, very efficiently heated by hot water, on the premiser. This Nursery would be invaluable to a Florist as a growing place for market, being so near Covent Garden; or the property, held for an unexpired term of sixty-six years, can be purchased.

Particulars on application to W. M. M. WHITEHOUSE, 26, Charles Street, St. James's, S.W.

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TO BE LET, or SOLD, a compact FLORIST'S NURSERY, having seven modern Houses fitted with Hot-water Apparatus. Situated between a main road and a river in an excellent neighbourhood, close to a large town in the Midlands, with a good residence attached.

Apply to HARRISON AND SONS, Seed Growers, Leicester.

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WILLIAM CLAPHAM,
SHAW HEATH, STOCKPORT,
*LANDSCAPE GARDENER and ROCK ARTIST.*

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Alban's, where work can be seen. Tufa formation, Sandstone, Natural Rockwork to suit any locality.

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**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

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JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

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MESSRS. PEACOCK AND FRIEND have the honour to announce that they will give a GRAND EVENING CONCERT,
at the Royal Albert Hall, on Wednesday, Nov. 18, at 8 o'Clock,
IN AID of the FUNDS of NAZARETH HOUSE,
Hammersmith. Under the Patronage of
H.R.H. Field Marshal the DUKE OF CAMBRIDGE, K.G., K.T., G.C.B., &c.
Prince LUCIEN BONAPARTE,
His Excellency the CHINESE AMBASSADOR,
His Excellency the SPANISH AMBASSADOR,
His Excellency the ITALIAN AMBASSADOR,
Right Hon. the LORD MAYOR, M.P.,
Sir SPENCER WELLS, Bart.,
WARREN DE LA RUE, Esq., M.A., D.C.L., F.R.S.,
And other distinguished Noblemen and Gentlemen, of whom a list will be published.
MADAME TREBELLI,
and several distinguished Artistes have most kindly given their services.

Tickets, 10s. 6d., 7s. 6d., 5s., 4s., 2s. 6d., and 1s., at the Royal Albert Hall, and all Agents; or J. T. PEACOCK, Sudbury House, Hammersmith.

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NEW EUCHARIS.—First-class Certificate was awarded, Tuesday the 13th inst., to the new EUCHARIS MASTERSII, by the Floral Committee of the Royal Horticultural Society. Price 5s. each, 2 guineas per dozen.

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

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**Roses.**

W. GROVE, Hereford, offers choice and special sorts of Marie Baumann, Lady Sheffield, Charles Darwin, Lamarque, Céline Forestier, &c.; sample dozen, assorted, 4s. 6d.; A. K. Williams, 6s.; Merveille de Lyon and White Baroness, 7s. 6d. per dozen. Trade or other list.

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**Notice.**

H. LANE AND SON'S New Descriptive CATALOGUE of ROSES, FRUIT TREES, RHODODENDRONS, Conifers, Trees, Shrubs, Forest Trees, &c., free on application.

The Nurseries, Berkhamsted, Herts.

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DOUBLE AFRICAN TUBEROSES. Splendid quality, 20s. per 100, 3s. 6d. per dozen. Trade price on application.

HOOPER AND CO., Covent Garden, London, W.C.

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"YE NARCISSUS or DAFFODIL;" containing its History, Poetry, and Culture, with Notes on Hybridisation, and Illustrated with many Woodcuts. Price 1s.

BARR AND SON, King Street, Covent Garden, W.C.

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LAURELS.—2 to 3 feet, extra transplanted, very bushy, 15s. per 100, £6 per 1000. The finest stock in the Trade. For other sizes and General Nursery Stock, see CATALOGUE, post-free on application.

R. TUCKER, The Nurseries, Faringdon, Berks. Telegrams, "Tucker, Faringdon."

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CAMELLIAS.—A choice Private Collection for sale. Fine health Plants, 3 to 7 feet high, in tubs.

GARDEN, 97, South Street, Exeter.

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HYBRID RHODODENDRONS. — Fine Plants, many in bud, 1½ to 2½ feet high, all colours, mixed, 45s. per 100.

W. JACKSON, Blakedown, Kidderminster.

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FOR SALE, Six large CAMELLIAS and Three large AZALEAS, all first-class Plants, and in good condition. Price £20. Apply to

Mr. HARBOTTLE, 59, John Street, Sunderland.

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CALCEOLARIAS, Herbaceous, superb strain of splendidly spotted and tigered flowers, strong transplanted Plants, 1s. 6d. per dozen, 10s. per 100; larger size, 2s. 6d. per dozen, 17s. 6d. per 100. Anthemis tinctoria, splendid sulphur Marguerite, quite hardy, very free flowering, 3s. per dozen, free.

CRANE AND CLARKE, Hillside Nursery, Haddenham, Cambs.

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**Special Offer.**

HYACINTHS.—The Subscribers offer Blue Italian and Double Rose Italian, at 40s. per 1000, splendid quality.

DICKSON, BROWN, AND TAIT, Seed Merchants, Manchester.

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LILY OF THE VALLEY.—True Berlin and Hamburg varieties, best selected Crowns, for forcing, 34s. and 35s. per 1000. Terms cash. Also on offer, large quantity of WILLOW CUTTINGS, price on application. Seed and Bulb Merchants, please send Catalogues.

E. KOHLMAN, Hamburg, St. George, Germany.

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CASH *v.* CREDIT.—300,000 Dwarf ROSES, on Manetti, the best plants money can buy; good sorts, 35s. per 100, 50 for 20s., worth double the money. Cash with orders, packing free.

Also ASPARAGUS, 2 years, 2s. per 100; 3 years, 3s. per 100; 4 years, 4s. per 100; much cheaper by the 1000 of all ages. All strong plants.

R. LOCKE, Fairseat, Wrotham, Kent.

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PINUS ARISTATA.—"A correspondent who has tried the nursery trade in vain" for the above Pine, may surely find it in many nurseries, but nowhere so cheap and so good as with

MORRISON BROTHERS, Aberdeen, who can give fine healthy plants, 6 to 9 inches, at 12.; 9 to 12 inches, at 18. 6d.; and 3 to 4 feet, at 7s. 6d. each.

A LIST of all hardy Pines sent free on application.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEE MEETINGS, Fruit and Floral, at 11 A.M. in the Conservatory, on TUESDAY NEXT, October 27.

SHOW of CHRYSANTHEMUMS and VEGETABLES, and POTATO CONFERENCE, on TUESDAY, 27th, and WEDNESDAY, 28th. Open on the 27th at 1 P.M.; on the 28th at 10 A.M.

SPECIAL PRIZES offered by Messrs. SUTTON AND SONS for POTATOS, and by H. DEVERILL, Banbury, for ONIONS.

N.B.—Exhibitors' Entrance, east side of Royal Albert Hall.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

SHOW of CHRYSANTHEMUMS and VEGETABLES, on TUESDAY and WEDNESDAY, October 27 and 28, in the Conservatory.

Visitors to the International Inventions Exhibition admitted free at 1 P.M. on October 27.

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CRYSTAL PALACE.
Great Annual CHRYSANTHEMUM SHOW.
FRIDAY and SATURDAY, November 6 and 7.
For Schedules, apply to
Mr. W. G. HEAD, Garden Superintendent.
Crystal Palace, S.E.

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THE ROYAL HORTICULTURAL SOCIETY of SOUTHAMPTON.

CHRYSANTHEMUM and FRUIT SHOW, on TUESDAY and WEDNESDAY, November 3 and 4. ONE HUNDRED and FIFTY POUNDS in PRIZES. Schedules and Entry Forms may be had of the undersigned. Entries Close on October 27.

C. S. FUIDGE, Sec.
54, York Street, The Avenue.

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KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

The NINTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 10 and 11, when, in addition to valuable Money Prizes, the CHAMPION CHALLENGE VASE, value TWENTY-FIVE GUINEAS, will be offered. Entries Close November 5. Schedules and further information of

T. JACKSON, Hon. Sec.
Fife Road, Kingston-on-Thames.

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NATIONAL CHRYSANTHEMUM SOCIETY.

Royal Aquarium, Westminster, S.W.

GRAND EXHIBITION, NOVEMBER 11 and 12. Schedules (free) on application.

NOTICE.—Floral Committee Meetings at the Royal Aquarium, on October 28; November 11, 25; December 9; at 2.30 P.M., precisely. (Regulations see Schedule.)

WILLIAM HOLMES.
Frampton Park Nurseries, Hackney, London, E.
National Chrysanthemum Catalogue, 6d. each.

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HUDDERSFIELD CHRYSANTHEMUM SOCIETY.

The SECOND EXHIBITION will be held in the Town Hall, Huddersfield, on FRIDAY and SATURDAY, November 13 and 14. Entries Close on Friday, November 6. Schedules and Entry Forms may be obtained on application to

JOHN BELL, Hon. Sec.
Marsh, Huddersfield.

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ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

The GRAND EXHIBITION of CHRYSANTHEMUMS, APPLES, PEARS, and other FRUITS, will open in St. James's Hall, Manchester, on TUESDAY, November 17. For Schedules, apply to the undersigned

BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

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YEOVIL CHRYSANTHEMUM SHOW will be held in the Town Hall and Corn Exchange, Yeovil, on TUESDAY, November 17. The Prizes include a SILVER CUP value £5 (or cash if preferred) for Twenty-four Blooms, Twelve Incurved and Twelve Japanese, distinct varieties; Two SILVER MEDALS, and Two Certificates of the National Chrysanthemum Society; and more than Fifty other Prizes. Numerous prizes are also offered for Table Plants, Grapes, Pears, Apples, Tomatos, Mushrooms, &c.

Schedules and Entry Forms can be obtained on application to

C. TITE, Hon. Sec, Fairview, Yeovil.

Important to Exhibitors.—As the Bristol Show is to be held on Wednesday, November 18, and the Taunton Show on Thursday, 19th, Exhibitors will be able to attend all three.

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HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.

The SECOND ANNUAL GRAND EXHIBITION will be held in the Artillery Barracks, Hull, on THURSDAY and FRIDAY, November 19 and 20, when PRIZES to the value of ONE HUNDRED AND THIRTY POUNDS will be offered for CHRYSANTHEMUMS alone, including a 1st prize of £10 for forty-eight blooms, coupled with the Challenge Vase, value £15 15s.; 2d prize, £8; 3d prize, £5; 4th prize, £2.

Entries Close November 12. Schedules may be obtained from the Hon. Secs.,

R. FALCONER JAMESON, } Queen's Dock, Hull.
WM. HAWKSWORTH, }

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SHEFFIELD and WEST RIDING CHRYSANTHEMUM SOCIETY.

NOTICE TO EXHIBITORS.—The Exhibition of this Society will be held in the Sheffield Corn Exchange, on FRIDAY and SATURDAY, November 20 and 21, instead of on the 13th and 14th, as originally fixed. Entries Close on Saturday, the 14th.

W. K. WOODCOCK, Sec.

---

CROUX ET FILS, NURSERYMEN, Vallée d'Aulnay, à Chatenay, Seine.—50 Hectares.

GREAT SPECIALTY—FRUIT TREES, carefully trained, very strong, in full bearing.

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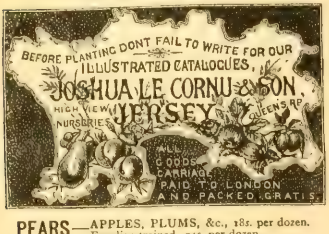
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PEARS—APPLES, PLUMS, &c., 18s. per dozen.
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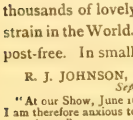
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None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
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CALCEOLARIAS, PRIMULAS,
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We simply wish to say that we have many thousands of lovely little Plants, and of the best strain in the World. 1s. 6d. per doz., 10s. per 100, post-free. In small pots, 2s. 6d. doz., 18s. per 100.
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| Hyacinths, 18 in 18 splendid named varieties. | Narcissus, double and single—12 in 4 named varieties. |
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| 12 in 4 fine named varieties. | 6 single, ,, ,, |
| 6 Duc van Thol, red & yellow | 12 Scilla sibirica (præcox). |
| 6 ,, ,, scarlet. | 12 Choice Ixias. |
| Tulips, double early— | 12 ,, Sparaxis. |
| 6 La Candeur, pure white. | 12 ,, Oxalis. |
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| Crocus— | 6 Eranthis Hyemalis. |
| 100 in 10 fine named varieties. | 6 Snowdrops. |
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HALF OF EITHER OF THE ABOVE FOR 10s. 6d.

The above Packages may be had from our Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., on receipt of Cheque or Post-office Order.
For particulars of our other Collections of Bulbs for INDOOR and SPRING GARDENING, see our complete and revised CATALOGUE for 1885, which will be sent, post-free, on application to our Agents, or ourselves direct.
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Planting Canes .. .. 17s 6d. per 100.
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THE YORKSHIRE SEED ESTABLISHMENT, HULL.

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JARMAN'S No. 6 COLLECTION
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SPECIALLY SELECTED ROOTS and BULBS
FOR EARLY FORCING, &c.
B. S. WILLIAMS'
Extra Strong Clumps—
LILY OF THE VALLEY, SPIRÆA JAPONICA and PALMATA, DIELYTRA SPECTABILIS, HELLEBORUS NIGER
Single Crowns (German) LILY OF THE VALLEY.
AMARYLLIS, seedlings and named varieties.
FREESIA REFRACTA ALBA.
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LILIUMS in variety.
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Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto in large pots, 20s. per 100. Descriptive LIST free.
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RHODODENDRONS, Hybrid Seedlings, selected when in flower and the colour labelled on each plant, good bushy plants, mostly with buds, 2½ to 3½ feet high, 24s. to 36s. per dozen.
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All kinds of
DECIDUOUS AND EVERGREEN SHRUBS, FOREST TREES,
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At Greatly Reduced Prices
The Trade and Private Buyers will find this an excellent opportunity for Stocking.

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Standard trees.
*The best Evergreens for Seaside Planting.*
PINE, Austrian, 12 to 18 inches, 6s. per 100; 18 to 24 inches, 12s. 6d. per 100; 24 to 30 inches, 20s. per 100: 30 to 36 inches, 35s. per 100; 3 to 4 feet, 50s. per 100.
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RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rockwork, which produce flowers and render the garden attractive all through the year. New LIST of sixty-four pages free.
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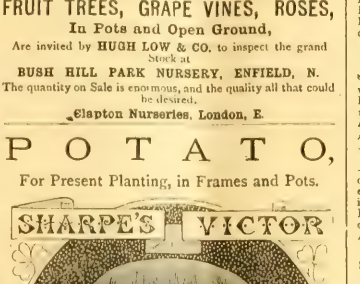
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largest flowering. Offered by
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Victor is the perfection of Potatos for frame cultivation,
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EIGHTY THOUSAND CLEMATIS in Pots, of all the finest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may *now* be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. each.
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STRAWBERRIES.—Leading sorts, in large 60's, for potting on or planting out. Low prices to the Trade and others. LIST on application.
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MR. DODWELL'S GRAND CARNATIONS, the finest grown. 2000 Plants, including Seedlings of this autumn, to be Sold for the benefit of the Prize Fund of the UNION CARNATION and PICOTEE SOCIETY.
Special terms to the Trade. Particulars on application.
Address—HEAD GARDENER, The Cottage, Stanley Road, Oxford.

**The Two Gems of the Season in Early Peas.**

MR. BURBURY desires to draw the attention of the Trade to these two PEAS, "EARLY KENILWORTH" and "WILLIAM the CONQUEROR"—the latter forming an excellent succession to the former. They are both Blue Marrows of the greatest excellence. The stock is about 200 bushels.—Apply for printed testimonials, price, &c., to W. BURBURY, Florist, &c., The Crew, Kenilworth.

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CUPRESSUS LAWSONI ERECTA ALBA, novelty.
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,, ,, Silver Queen, novelty.
CHIONODOXA SARDENSIS, novelty, awarded a First-class Certificate in London, March 24, 1885.
SPIRÆA PALMATA ALBA, novelty, awarded a First-class Certificate in London, June 17, 1885.
THYMUS LANUGINOSUS FOL. VAR, novelty. For description see my Catalogue of spring, 1885.
Prices on application.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

ROSES—ROSES—ROSES.—Splendid Plants of the following and other fine varieties, in 7-inch pots, 24s., 30s., 36s., and 42s. per dozen:—Maréchal Niel, Gloire de Dijon, Cheshunt Hybrid, Devoniensis, Duke of Connaught, Homer, Isabella Sprunt, Madame Lambard, Madame Willermoz, Niphetos, Etoile de Lyon, Perle des Jardins, Safrano, &c. Our Roses are well known to be the finest and healthiest in the country. Complete LISTS of varieties in stock will be sent on application.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL."

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DUTCH BULBS—Season 1885.
WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, Wholesale Importer of Dutch Bulbs, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

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THE

# Gardeners' Chronicle.

*SATURDAY, OCTOBER 24, 1885.*

## PARALLELS OF PEARDOM.

WHAT is a Pear in the world of philology? In the Saxon vocabularies (Wright, i., 285) it is *pere*, *pera*, and *pirige*. These are obvious deductions from the Latin *pyrus*, which again is a possible, though not obvious, deduction from the Greek *apios*. Daubeny (*Trees of Ancients*, p. 147) assigns to Greece ten species of Pyrus, and to Italy six. Of Malus, the Apple, and Cydonia or Cydonium, the Quince, there is nothing now to be said, for the Pear is a sufficient handful. It is impossible to avoid the suspicion that pyrus, pyre, and pyramid are related, if not in a strictly objective way, yet by analogy of thought. The pyre, indeed, was a pyramid in construction, and a flame ever tends to a pyramidal form. But the wood of the Pear was not in request for burning of the dead; that of the Pine was preferred before all other, and for the best reasons, although when the "pyrall combustion" proceeded slowly, it might at one time have been customary to add a woman as being "unctuously constituted" and more inflammable than eight or ten bodies of men (Brown, *Urne Burial*, iv., 22). But necessity has no choice. The burning of the dead was a fine custom, instituted in defence of the living (Warburton on sixth *Æneid*), and the deed was done with the best means at command. Therefore, as regards the materials, there was never any pious prescription. In another direction, perhaps, we may see a flame in the woods when Pyrus communis mixes golden leaves with ruddy fruits; and if we could associate Pyrus aucuparia, which is common to all Europe (Watson, *Cybele*), we should obtain a pictorial harmonisation of the elements before us. *Pyrus* and *pyrum* passed into *pirige*, and thence to *pere* and *pera*, as in Chaucer's *Merchant's Tale*, 1025:—

"Now sire, quod she, for ought that may betide,
I moste have of the peres that I see,
Or I moste die, so sore longeth me
To eten of the smal peres green."

And again in the same tale—

"So long about the alleyes is he gon,
Til that he was comen again to the pery."

In "Piers Ploughman," 5, 16, it is *pirie* which carries us direct to the Latin, as in Pliny, Virgil, and Columbella. Skeat (*Et. Dic.*) says, "root unknown." The modern Welsh *peran*, a Pear, and *perain*, Pears, take us more directly, because not through any corruption, to the Latin. But that is just what we expect a Celtic tongue to do, for it is a far off branch of the same tree, and reminds one of the Italian *pera*, for Pear, as well as of the English perry, the liquor that is made from it. We will make an end of the difficulty by calling it the fire tree, the tree that makes a pyramid of flame to light up the autumnal woods, giving real warmth ultimately by its eatable fruits, which are pyramidal in form, and therefore flame-like, a resemblance often augmented by a fiery colour.

"The fabric seem'd a wood of rising green,
With sulphur and bitumen cast between,
To feed the flames: The trees were unctuous Fir,
And Mountain Ash, the mother of the spear;
The mourner Yew, and builder Oak were there;
The Beech, the swimming Alder, and the Plane,
Hard Box, and Linden of a softer grain;
And Laurel, which the gods for conquering chiefs ordain." *Dryden, Arcite.*

*Bergamot* is a collective name for a distinct class of Pears. In the popular regard the name connects the fruit with the essential oil derived from the yellow rind of Citrus limetta, the fragant Lime. The Bergamot of the garden is the Monarda, an American genus, and therefore out of the category. A Bergamot Pear need not have any fragrance. It takes its name from Bergamo, a town in Lombardy, where certain kinds of smallish Pears were grown and became famous for their sweetness. In Cotgrave thus:—"A yellow Peare, with a hard rind, good for perry; also the delicate Italian small Peare, called the Bergamotte." For a general definition of a Bergamot Pear, perhaps small and sweet should suffice.

A *Besi* Pear is a foundling, a wilding, a thing without a history. The Dictionary of the *Académie* gives the vague and worthless definition, "Nom générique de plusiers sortes de Poires." Leroy, i., 265, gives a proper clue. He says, "Le mot (ou bezy) appartient à la langue Bretonne et signifie, d'après les *Dictionnaires* de Trevoux et de Richelet, *Poire sauvage*," and he adds that most of the Pears that bear the name have been found "à l'état de sauvageon." Thus, Besi d'Héry was discovered in the forest of Héry, in Brittany. Besi de Quessoy was found in the forest of Quessoy.

A *Beurré* Pear is a buttery Pear, therefore has, or should have, a melting flesh. The editor of the new *Ogilvie* has missed it, for it should be, where it is not, in his vol. i., p. 359. Humour creeps in where it is least looked for. Here is a transcript from Mitaud's Boyer—"'Beurrier,' a butterman. 'Des auteurs à beurrières,' Grub Street writers.'" Does it mean that those writers provided paper for the butter-shops? The Laureate could only think of curl- papers when writing *In Memoriam* (lxxvi., 7).

*Fondante* is the equivalent of Beurré, and should indicate a melting Pear.

*Bon*, or *Bonne*, might pass for good; but it may mean large, unusual, extra fine in any way whatever. For the most part it may be taken to indicate a thing about the goodness of which there can be no dispute.

A *Catillac* is a reminder of an engine of punishment, "parce que sa chain s'attaché à la gorge de celui qui la mange crue!"

*Colmar* is the capital of the department of the Haut-Rhin, France, sweetly situated at the foot of the Vosges Mountains. It is a great place for manufactures, and also for Pears; the variety known as Colmar having been grown there for hundreds of years; and it probably is one of the thirty or forty the Romans were choice about. Several of the modern Colmars are seedlings of Van Mons, and have their first or generic name from their general characters, and not from any geographical relationships.

*Délice*, m., and *Délices*, f., imply delightful; and it happens that all the Pears having this prefix are good.

*Doyenné* refers to the deanery, and seems to imply that the Pear having such a prefix originated in the curé's garden. In Boyer we have "Doyenné (sorte de Poire), Carlisle Pear, the Dean's Pear." Leroy knocks the dean on the head by saying the name was given to the Pear known as Doyenné to indicate its excellence: "d'une chose de qualité supérieure: c'est la doyenné." As a generic term it is the equivalent of Bon, and should speak of a good Pear.

*Muscat*, as applied to a Pear, suggests that it has a musky flavour. It has, in respect of the fruit, nothing to do with Muskovy.

*Passe*, apart from a suffix, means almost anything, but in this particular connection it indicates high quality. Thus "passe-fin," excellent fine cloth, as in Cotgrave. So Passe Colmar must be a superb Colmar Pear. Whether raised or found at Colmar is of no consequence, for Ostend rabbits are grown at Ghent and Bruges.

A *Rousselet* is a red Pear. A *rousseau* is a red-haired man. The verb *roussit* means to redden, or, as our country folks would say "ruddle." The Summer Pear known as Rousselet d'Août was anciently known as the Ronselet. Cotgrave gives "Rousselet, the name of a delicate small Peare." Freely translated it is the Little Russet. The type is Gros Rousselet, described in Martyn's Miller as of a dark red colour.

*Crassane* is a troublesome word as a prefix to a Pear. It suggests the choke Pear, which was anciently so-called, and is thus defined in the latest *Ogilvie*:—"A kind of Pear that has a rough astringent taste and is swallowed with difficulty, or which contracts the parts of the mouth." Leroy gives a list of thirteen "Crassanes," all of which are described under other names. A rough thick coat is doubtless all that is needed to constitute a Crasanne, for the coat being removed there remains more to gratify than to pain one. Dodoens describes the wild Pears as rough, binding, and chokely. Parkinson says the perry made of choke Pears becomes as mild and pleasant as wine, "and will hardly bee knowne by the sight or taste from it" (*Parad.*, 594). In Martyn's Miller the chokey Pear, Poire d'Etrangillon, No. 27 of list, is described as having red flesh. Dodoens says the chokely Pears, "eaten rawe or backte before meale . . . do fortifie and strengthen the stomacke" (*Lyte*, 713).

*Calebasse* means like a calabash, a Gourd, or a bottle.

*Wardens* are long keeping cooking Pears. Hogg associates them with the Cistercian Abbey of Warden, in Bedfordshire, "where a particular Pear was cultivated and used in pies;" and he quotes from the Clown in *Winter's Tale*, "I must have saffron to colour the Warden pies," which is prose, though quoted in *Fruit Manual* as verse. Turner, in *Herbal* (1568) says of Warden Pears, they are called wola, "that is, the holow place or loofe of a mannis hand, because they be as big as a man can grype in the palm or loofe of his hand. These are commonly called in English Wardens, if they have a bynding, and be rede, when as they are rosted and indure unto Marche or February. It appeareth that they have theyr name of long keping, for 'warden' in Duche, from whence our English came, is to kepe. Serotina pira are they that hang upon theyr mother until winter, and were ripe with the frost. These are parteley our wardenes, and parteley other long during Peares, which are called in Duche winter biren, and they may well be called in English winter Pears" (*Herbal*, ii., 108). The Cistercian and Benedictine monks were amongst the foremost founders of gardening in these isles, but the association of the Warden Pear with a particular establishment is scarcely justified by coincidence of name. The Dutch "weeren" and "waerden" is the source of our English word "warden," and carries with it the twofold idea of a keeper and something to be kept.

"For rightfulliche reson, sholde rude gow alle,
And kynde wit be wardeyn your welth to kepe,
And tutor of gowre treasure."
"Piers Ploughman," 15.

Wardens were of many kinds. Tusser speaks of "Wardens white and red" in *January's Abstract*. Parkinson speaks of the "Red Warden and the Spanish Warden most excellent Peares, either to bake or to roast, for the sick or for the sound." Turner speaks of dried Pears in a way to imply that Wardens were the best for the purpose, but as a matter of course, any dry textured Pear would answer. He says "The broth of dried Peares stop the bellye," a direct reference to their astringent properties. Falstaff, contemplating the laugh turned upon him at court, after the buck-basket business, anticipates becoming "as crestfallen as a dried Pear," a sufficient suggestion that dried Pears were common comestibles in Shakespeare's time. *Shirley Hibberd.*

## FRUIT TREES AT MESSRS. LEE & SON'S, EALING.

Of Ealing, it has been well said its history has yet to be written—but it bids fair to supply the materials at an early date. The place has a fascinating charm for every true horticulturist, for from there came those ever-to-be-remembered stove and greenhouse plants, unsurpassed specimens of cultural skill, that created such a sensation at the old Chiswick shows of the Horticultural Society. We allude of course to Ealing Park, the home of the late Mrs. Lawrence, mother of the President of the Royal Horticultural Society, and himself an ardent horticulturist. Here is a strong argument for the "heredita rians." But it is not our purpose to dwell any further on Ealing Park—indeed it would be difficul to do so. It has been shorn of its glory by the speculative builder!

There can be nothing more interesting to those connected with the cultivation of fruit trees than to look over the collections of Apples and Pears in a first-rate nursery, where these are grown extensively, to see the number of varieties, and to note the different characters of the fruit in colour, form, and size, and to compare notes as to the correctness of names, &c.; also the great diversity in the growth of the trees, especially to those who have a fancy for any particular kind of fruit or form of tree, as they are to be found in all forms and shapes suited to the varied tastes of the planters.

One of the oldest (perhaps the oldest, for they were established in 1720) nurseries is that of Messrs. Charles Lee & Son, Hammersmith, who have one of their branch establishments at Ealing, containing about 25 acres, devoted to the cultivation of fruit trees; the soil is of a deep loamy nature, in every way suitable to the growth of fruit trees. Very great attention is given to the selection of the various stocks as most suitable on which to work the different kinds. Here are to be seen whole quarters of standard Apples growing upon the free stock, suitable for orchard planting; also pyramidal and trained trees. Perhaps the most interesting Apple feature here is to see a quarter of pyramid Apples worked on the Paradise stock, literally laden with fruits of fine size.

Mr. George Cannon, Messrs. Lee's manager, himself an enthusiastic fruitist, recommends this kind of tree to be more extensively planted, especially in small gardens, as they are of a compact moderate growth, very prolific, while the fruit comes to such fine size that too much cannot be said in their favour. It is worthy of note that he recommends that all the free-bearing varieties, such as Lord Suffield, Stirling Castle, Keswick Codlin, Manx Codlin, Potts' Seedling, Frogmore Prolific, Ecklinville Seedling, Hawthorndon, and Worcester Pearmain should be worked on the free stock, he having found that these sorts when on Paradise bear so freely as to become stunted in growth and the fruit small; but such sorts as the following are benefited to a very marked degree, being made prolific and producing fine large fruit, viz.:—Ribston Pippin, Cox's Orange Pippin, Margil, Sturmer Pippin. Claygate Pearmain, Adam's Pearmain, Cockle Pippin, King of the Pippins, and Pine-apple Russet; these comprise some of the finest dessert kinds. The following kitchen sorts should be worked on the Paradise stock also, viz.:—Alexander, Blenheim Orange, Peasgood's Nonsuch (it may be remembered what magnificent examples of this variety were exhibited by Messrs. Lee at the great Apple Congress at Chiswick in 1883), Beauty of Kent, Golden Noble, Warner's King, Lady Henniker, Galloway Pippin, Alfriston, Annie Elizabeth, and Gloria Mundi; the above mentioned, grown as single and

double cordons, produce some of the finest and largest fruit frequently to be seen on the exhibition tables.

Pears do well at this nursery, some of the pyramids and the espaliers are carrying nice crops of fruit. A collection of fruit from these trees is now been exhibited at the National Pear Congress at Chiswick. Most of the fruit on these trees is growing on the Pear stock. There is, however, a nice collection worked upon the Quince, and these should be largely planted—such as Beurré Diel, Marie Louise d'Uccle, Louise Bonne of Jersey, Beurré Superfin, Doyenné du Comice, Beurré Hardy, Doyenné Bassaie, Beurré d'Aremberg, Beurré Bachelier, Bergamote d'Esperen, Duchesse d'Angoulême, Fondante d'Automne, White Doyenné, and Soldat d'Esperen. All these make fine pyramids on the Quince, and produce fine fruit on most soils. The following do not succeed well on the Quince, but they are so indispensable that they should not be left out of any collection, and these have to be grown on the Pear stock, viz. :—Jargonelle, Williams' Souvenir du Congrès, Pitmaston Duchess, Marie Louise, Glou Morçeau, Winter Nelis, Josephine de Malines, Easter Beurré, and Beurré Rance ; they are all good bearers when properly cultivated, that being more vigorous growers on the Pear stock they require attention paid to root pruning.

The next special feature at this nursery is the stock of standard, half-standard, and dwarf-trained Peaches, Nectarines, and Apricots ; there are thousands of these trees in the finest condition, both for houses and outside walls. The loam at Ealing seems to be particularly adapted for the growth of the Peach, making nice even growth, and well-matured wood. With these trees very great attention is paid to the different stocks on which to bud the many kinds of Peaches and Nectarines, as they differ so considerably in this respect that too much importance cannot be given to this subject.

The collection comprises all the latest and newest kinds, but the good old favourite sorts, such as Royal George, Grosse Mignonne, Bellegarde, Early York, Noblesse, Elruge, and Pitmaston Orange, are still to the front, and in greatest demand, but a few sorts may be mentioned which are most useful additions, viz. :—Alexander, the best and earliest variety ; Condor, fine and early ; Early Silver and Dr. Hogg, good second earlies ; Dymond, showy, mid-season ; and Sea Eagle and Princess of Wales, good late kinds. Lord Napier, Humboldt, and Pine-apple Nectarines, have established themselves as the three finest Nectarines grown. Peaches in pots are also grown successfully at this nursery.

There is a great stock of Plums. Thousands are grown in dwarf trained standards and pyramids, and also the same with Cherries.

Roses are here successfully (as the leading horticultural exhibitions testify) and extensively cultivated. There are 20,000 standards and half standards, and the same number of dwarfs, all showing a condition of growth that only such soil as is to be found at this nursery can produce.

There is a centre walk nearly half a mile in length planted on each side with specimen shrubs, and a fine collection of herbaceous plants is here to be seen in good order. Thus Messrs. Lee are marching with the times, for herbaceous plants, long left in the "cold shade of opposition," are deservedly making known their many claims to recognition by emerging from such shade into the full light of universal approbation. To those who are more particularly interested in Rose and fruit tree cultivation we should recommend a visit to this excellently managed nursery. They will find a guide, philosopher, and true friend in Mr. Cannon. The stock will be found in excellent condition, the climate of Ealing being good and sufficiently far from the metropolis to escape, in a great degree, the London smoke.

Such stock as is here to be found used to be grown at the nursery of the firm at Hammersmith (of happy memory as regards this firm), but with the inevitable increase of railways and bricks and mortar, all nurseries of this description have had to seek fresh fields and pastures new, where the gentle art might be carried on unmolested, if not amidst such venerable and honoured associations.

The soil of Ealing, generally, is of a loamy, holding nature, well suited to fruit trees, and especially Roses, which do wonderfully well ; and the villa gardens make a good show of these flowers, and are, as a rule, well kept—the allotment gardens at Ealing, cultivated by the cottagers (for extent), holding their own with any in the country, and an earnest appeal was made at the recent twenty-first anniversary dinner of the Ealing Horticultural Society, by the Hon. Secretary, Mr. R. Dean, to the "powers that be," that such allotments should be extended. May the appeal be not made in vain. It was made in a good cause. There are very few suburban places where gardening is carried out better than at Ealing, and the presence in its midst of the excellent society before mentioned has, doubtless, much to do with this very desirable and encouraging state of affairs.

## BENEDICT ROEZL.

All those interested in the introduction of interesting plants, indeed all those who sympathise with courage, energy and intelligence, will learn with great regret of the death of this renowned collector, at Prague, in the sixty-second year of his age.

He was born in Bohemia and began his horticultural career when he was twelve years old. To write an account of his wanderings and adventures (he was robbed seventeen times), to detail all that we owe to his zeal, would demand far more space than we can give. We have therefore judged it best simply to repeat the summary] biographical notice, for which we were indebted to him some ten years ago.

Since that time Roezl has chiefly resided at Prague, but was not an infrequent visitor to this country. It was as late as the summer of this year that we were privileged to see him and avail ourselves of his experience.

"I started in my horticultural career," writes M. Roezl, "in my thirteenth year—in 1836. I was apprenticed in the gardens of the Count of Thun at Tötschen, in Bohemia, from which, after three years, I went to the gardens of the Count Paulikowsky, at Medica, Galicia. At that time these gardens contained the largest collection of plants in Europe, and I was there enabled to gain



BENEDICT ROEZL.

most of my botanical knowledge of plants. After staying three years I went to the far-famed gardens of Baron Von Hugel ; from there I went to Telsch, in Moravia, to Count Lichtenstein, and from there to Ghent, to M. Van Houtte, where I stayed five years. I was *chef de culture* in the School of Horticulture of the Belgian Government. After this I served for two years as foreman to M. Wagner in Riga (Russia). From Riga I went again to M. Van Houtte for two years, but I could no longer restrain my ardent wish to see the tropics, and I proceeded *vid* New Orleans to Mexico—this was in 1854. In Mexico I started a nursery for European fruit trees ; there also I collected a large number of Mexican Pines. From thence I sent to Europe Dahlia imperialis, Bouvardia Humboldtii, Zinnia Haageana, Cosmos atropurpureus, Agave schidigera, and many other plants. I introduced into Mexico the culture of the Ramie (Böhmeria tenaceissima), and planted many acres of land with it. I invented also a machine for extracting and cleaning the fibre of Ramie and Hemp, and took out a patent for my machine from the Government of the United States on September 17, 1867. The Agricultural Exhibition awarded a diploma for it in February, 1868. This discovery was the cause in 1868 of the loss of one of my arms. Many people in Havana solicited me to exhibit my machine there, and I was asked by some gentlemen to try if the machine would extract the fibre from Agave americana. The result of the trial proved my assertion, that the fibre would come out green, was correct ; but in endeavouring to show that they were right in their assertions they managed in some way or the other to fasten some screws tighter, so as to get the cylinders closer together, and I, not knowing this, in putting a leaf between the cylinders (making 360 revolutions per minute) lost my left arm. Afterwards I again travelled in Mexico, and discovered Dalechampia Roezliana rosea, Aphelandra aurantiaca Roezli, Campyobotrys Ortgiesii, C. Roezlii, Nægelia fulgida and digitaliflora. From [Mexico] I went again to Havana and Cuba, and discovered Microcycas species.

"Afterwards I proceeded to New York, to start on my Californian travels over the Rocky Mountains and Sierra Nevada. I discovered here the new Lilies Washingtonianum, puberulum, parvum, and Humboldtii ; the latter I found on the hundredth memorial day of Alexander Von Humboldt, and hence named one of the species after him. The Lily in question does not come from the Humboldt country, as some catalogues assert. I also found here Saxifraga peltata, Calochortus Leichtlinii, Abies magnifica, and many others that have been published from time to time. From there I went to Panama and Ocaña, in New Grenada, where I found Utricularia montana, Anæctochilus Ortgiesii, and forwarded about 10,000 Orchids to Europe, and something like 500 species of plants. From there I went to the Sierra Nevada from Santa Martha ; I found there Telepogon Roezlii (Reich.), and of which I collected 800 plants. These died in one night, owing to the great heat in Rio de Hatcha. I also found many new varieties of Odontoglossum, and forwarded upwards of 3000 to Europe.

"Then at the beginning of the Franco-German war I went to Panama and San Francisco, and owing to the war many of my assignments arrived dead at their destination. Wishing to await the end of the war, I went to the Washington Territory and found Lilium columbianum, and a great variety of Conifer seeds. From there I proceeded to Sierra Nevada, California, to gather Conifer seeds, but the harvest was lost on account of the severe frost. From there I went to South California, then to Panama and Bonaventura, in Choco ; here I found Gaura Roezlii, and Lindeni, and Cypripedium palmifolium and Roezlii. Here I also gathered Cattleya chocoensis, and brought them to Bonaventura to ship them, and returned through the valley of Cauca. Now a very difficult journey commenced through the State of Cauca to Antioquia, where I discovered large quantities of many varieties of Masdevallias, described by Professor Reichenbach, and Odontoglossum vexillarium, Curmeria picturata, Cattleya gigas, Phyllotænium Lindeni, and many Dieffenbachias and other Aroids. After a journey of six months, I travelled down the Magdalena River, and to Colon and Panama, thence to North Peru, crossed the Andes, where I found a scarlet Violet, a new specimen of Heliotrope, Tillandsia argentea, Epidendrum Frederici Guilielmi, Masdevallia amabilis, &c. I returned to Payta to ship my plants and myself too, and went to Bonaventura, found Odontoglossum Roezlii, and when almost exhausted I found on the way Masdevallia chimæra, and several new Aroids, which I brought myself to Europe. After staying about four months and visiting the principal towns and nurseries, and seeing my parents again, I started once more for a new series of travels.

"On August 3, 1872, I went from Liverpool *vid* New York into the Colorado Territory, and in Denyer City I was robbed of 2000 dollars, the whole of my possessions. There I collected Yucca angustifolia, Calochortus Krelagii, Ipomœa leptophylla, and proceeding to New Mexico found the beautiful Abies concolor (Engelmann), Yucca baccata, many hardy Cacti, and many annuals and perennials. From there I went again to the Sierra Nevada, where I found Pinus edulis, P. Bolanderi, and collected Californian Lilies, and went to San Francisco and thence *vid* Acapulco into the Sierra Madra, where I found Odontoglossum maxillare pulchellum, citrosmum, roseum, and many others—altogether 3500 Orchids, which arrived in London in fine condition. From there I went to Panama over the Isthmus, and went to La Guayra to get to Caracas in Venezuela, where I found Cattleya labiata Roezlii. I forwarded in all no less than 8 tons of Orchids to London. From there to St. Thomas and to Havana and Vera Cruz, then to the Isthmus of Teheuantepec and into the State of Oajaca, in Mexico, where I found a real 'new wonder,' the double Poinsettia pulcherrima, which has already flowered in New York, and many Cacti and Agaves, Dion, and Orchids—in all 10 tons of plants. From the city of Mexico I returned from Vera Cruz to go to New York, from New York to Panama, from there to Lima and Peru, over the Oroza Railroad, crossed the Andes at a height of 17,000 feet to Tarma and Chanchamaga, brought back with me 10,000 bulbs of various sorts, Pilocereus mollis, many new Bromelias, Loasas, Calceolarias, Fuchsias, Mutisias, and many other new plants. From thence I returned to Lima and Callao to South Peru, to Morienda and Arigipa, to Puno on the Lake of Titicaca. From there I went to La Paz, in Bolivia, and from thence I went over the Snowy Mountains of Illimani to the province of Yungas, there I found Odontoglossum selligerum, Telepogon Benedicti, Masdevallia aspera, many new bulbous Begonias, Loasas, Tacsonias, Tropæolums, and others. From thence I returned to Tacna and Arica to Lima ; from there again I went to Payta, crossed the Andes to Huaca-Camba, from whence I sent home many Masdevallias and Odontoglossums, Pilocereus Peacockii, and Telepogon Hercules, and

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went to Guayaquil (Ecuador). From there down the Chimbazo, found the Zamia Pescatorea Roezlii (Rchb.), Batemanni, Wallisii (Rchb.), and others. I returned to Guayaquil, and went to Bonaventura to visit once more the Valley of Cauca, where I found Masdevallia chimæra, Odontoglossum Roezlii, Pescatorea Dayana, and many others. With these I started once more for London."

Such, in mere outline, is the account of M. Roezl's wanderings, and of the results of his travels.

# Orchid Notes and Gleanings.

## ODONTOGLOSSUM CIRROSUM.

THERE is one point referred to in a recent letter on Orchid culture, by Mr. Douglas, which it always appears to me is not sufficiently considered by most growers, and that is the great effect that locality and the size and position of the Orchid-house has upon the treatment required by the plants within it. As an example of this, Mr. Douglas says that he finds his Odontoglossum cirrosum thrive best in the Cattleya, or intermediate-house; but my experience differs entirely from his. I grew my cirrosums for some years in the intermediate house, with the unvarying result that the plants were sickly and weak and frequently did not flower at all. For the past three years I have grown them in a cold Odontoglossum-house, and they are vigorous and healthy and flower with strong spikes.

Again, a large and well known grower assured me lately that Cœlogyne cristata would not flourish with him in a cooler temperature than that of the Cattleya-house; but all my plants are kept in a cool house with Lycastes and Lælia anceps and autumnalis, and they can vie with those of any other grower in vigorous health and in the quantity and quality of the flowers. About two years ago I nearly killed all my Odontoglossum Rossi majus and O. Cervantesii by removing them, on experienced advice, into the Odontoglossum-house; but now they are replaced in the intermediate-house they are again in strong health. I believe, therefore, that it is impossible to give any general rule, excepting within very wide limits, as to the correct treatment and temperature for any class of Orchids, as these points differ much according to the conditions under which they are grown, and can only be determined for each locality by experience and trial. *S. Courtauld, Bocking Place, Braintree.*

## VANDA CŒRULEA.

In a recent number a correspondent mentions Vanda cœrulea as not often seen. I lately had a plant of it, imported from Mandalay, Burmah, some five years ago, in flower for the first time. The flowers were large, flat, of a beautiful pale turquoise colour, and finely reticulated with darker lines, like the wing of a dragon fly. It was greatly admired by those who saw it. I have not seen this reticulation mentioned, nor is it shown in the portrait given in the *Garden*, vol. xxi., 1882, p. 254, in which the colour is also very inferior. *H. J. Ross.*

—— One frequently hears remarks passed upon the difficulty experienced in flowering this beautiful Orchid in a satisfactory manner; but our experience here with a small piece, about 1 foot 4 inches in height, is of a nature calculated to make us hesitate before entirely concurring in that opinion. The plant in question was bought about twelve months ago with one flower-spike showing. This season it has produced two strong spikes, each with nineteen flowers upon it, and besides these two more spikes have pushed through, and are evidently prepared to grow away should the present spikes be removed at once before the plant is exhausted. Rather more than the usual amount of shade has been given on account of other Orchids occupying the same house, and rather less than the usual quantity of water has been supplied to the roots, or, more correctly speaking, to the moss, for the majority of the roots—as is usual with these epiphytes—are in the air. *F., The Mote.* [Tell us how you manage it. Ed.]

—— At p. 469 it seems I am called upon to define the use or meaning of terms. This I consider the purport of "J. D.'s" question when he asks me what I consider a handsome flowering specimen. Seeing that I applied the expression to a certain plant which he has evidently inspected, it behoves me to stand by and explain it without shifting ground to obtain a definition. The word handsome simply means beautiful or good-looking. Of course we must always make a comparison in order to be understood when we say a plant is handsome; but I fail to see that the application in the present instance implied that the plant in question was in any way superior in merit to average specimens of the same species. On the other hand, if we compare it with the darker coloured but smaller flowers of V. cœrulescens, there can be little difficulty in deciding which has the more handsome flowers. Furthermore, the plant in question is small, with a stem of about 7 inches, closely furnished with healthy unspotted leaves, and the raceme bears eleven flowers, each averaging about 3¼ inches across. The specimen will not compare with the magnificent one figured in Warner's *Select Orchids*, p. 18, but it will compare very favourably with dried plants I have seen that were collected on their native Khasia hills; and the flowers are in themselves, or whether compared with those of other species, undeniably handsome. Since writing the previous article another and fewer flowered specimen has opened its buds, with which the said article has nothing to do. *J. F.*

—— Here there are two nice plants of this lovely species in flower, which are, I think, extra good for the size of the plants; they are growing in Teak baskets, and are only 8 inches high, with seven pairs of leaves; each has spikes 1½ foot long, and twelve flowers upon each. The variety is very fine, with flowers nearly 4 inches across. *F. Bedford, Straffan.*

## DISA MACRANTHA, *Thunberg.*

In a recent number of the *Gardeners' Chronicle*, p. 470, Mr. Burbidge refers to a plant, collected by Cooper in Kaffaria, in the British Museum herbarium as belonging this species. I am responsible for this statement, having mentioned it in a letter to Mr. Burbidge. I am afraid I must correct it. The plant alluded to, which I had not then properly examined, is a young D. crassicornis. D. macrantha, Thunb., I have not met with. It seems to be very similar to D. cornuta, and I should not imagine it to be superior to that species as a cultural plant. Any way, I fear it must be added to the already considerable list of lost Cape plants. *H. N. Ridley.*

## ONCIDIUM OCHTHODES AND O. CHRYSORNIS.

The above-named plants may both be seen in flower at the present time at Kew, and as on comparison they prove to be one and the same species, it may be interesting to record the fact, especially as they are likely to be flowering in other collections. Both were described in these columns by Dr. Reichenbach—O. ochthodes in 1871 (p. 1483), and O. chrysornis in 1880 (vol. xiv., n.s., p. 620), and both were found in Ecuador. The former was imported by Mr. Bull, through one of his collectors. Dr. Reichenbach, when describing it, pointed out its affinity with O. pyramidale, Lindl., and remarked:—"It would be that species if its petals, columnar wings, and lip were not very distinct." Besides these differences, however, may be noted its stouter habit, larger and denser panicle, with more zigzag branches. It is a native of Peru. O. chrysornis was discovered by Klaboch, and afterwards by Houda. The difference between the two is very slight—less, indeed, than often occurs between individuals of the same species. The older name of ochthodes will have to be retained for the species, which is well marked by the long beak-like rostellum and hatchet-shaped column-wings. O. chrysornis represents a state with the markings somewhat less distinct than the type. *R. A. Rolfe, Herbarium, Kew.*

## ODONTOGLOSSUM BREVIFOLIUM.

This rare and extremely handsome Odontoglot, native of the Peruvian Cordilleras, where it was discovered by Hartweg, is now in perfection at the Woodlands, Streatham Hill; and although Mr. Measures has in his collection the very cream of the genus, there are a few only that can equal in beauty this grand species. The flower-spike is erect, with about a dozen large flowers, which are of a rich shining chestnut-brown colour, bordered with yellow, the major portion of the labellum being yellow in just sufficient quantity to form a pleasing and beautiful contrast. Of the numbers of handsome Orchids in flower mention must be made of the extra fine varieties of Cypripedium insigne, including all the newest and very best. Of the true autumn-flowering Cattleya labiata there is a good healthy specimen with two large spikes of bloom; and the charmingly bright and beautiful Cattleya aurea, the best variety, is also blooming freely. In fact, this collection is noted for the many superb varieties contained in it, and at any time of the year something exceptional is sure to be found at the Woodlands. *J. G.*

## ORCHIDS AT KEW.

The last week in September is about the worst time in the whole year to expect a display of flowers in the Orchid-houses, but there was a goodly display here at the time of my visit. Cattleyas were represented by the gorgeous C. aurea var. Dowiana, a species that does not succeed well in every garden. The only chance to flower it is to grow it in baskets suspended near the glass where it can get plenty of light and air, with a warm Cattleya-house temperature. The last blooms of C. Gaskelliana were open on the plants. I have referred to this new species before as being most useful to carry the Cattleya bloom into July and August; it is an additional argument in its favour to find its delicately tinted blooms about the end of September. Zygopetalum Gautieri was represented by a very fine healthy specimen. The greenish coloured sepals and petals are blotched and spotted with brown. The lip is deeply tinged with a blue suffusion. Oncidium varicosum represents the yellow-flowered species of this genus; the plants were furnished with long elegant spikes of its handsome blooms. The small-flowered type had a representative in O. ochthodes, interesting as a botanical specimen, perhaps. The best of the small-flowered type is O. cheirophorum, graceful and pretty, with a delicious perfume. Spathoglottis Fortunei is a pretty terrestrial Orchid; several plants of it were furnished with upright spikes of bright yellow flowers. Another pretty terrestrial Orchid, also in flower, was Stenoglottis fimbriata; the leaves are marked with blackish spots; from the centre issues a smallspike of rosy-lilac flowers.

Amongst Odontoglossums the following are, or were at that time, in flower:—O. Ehrenbergii, the plant and flowers resembling a small form of C. Rossi; O. constrictum is not very handsome, but the white lip, edged with yellow, forms a much more pretty flower than O. Lindleyanum; O. vulcanicum (Mesospinidium) is very pretty, producing neat and elegant spikes of rose-coloured flowers. The above were all cultivated in the Cattleya-house. In the warmest house various species and varieties of Cypripediums grow with great vigour, especially those of the C. longifolium type; C. conchiferum is very elegant, it has pale rosy lateral petals, the dorsal sepal greenish-yellow, marked with pale green lines, the slipper greenish-yellow. The hybrid forms of this group are represented by C. calurum and C. porphyreum. The modest-looking C. concolor was flowering well under the shade of the taller ones; there was a small plant with a well-developed flower of the new and very pretty C. Godefroyæ. This species seems to grow well in the warmest house; here it was not near the glass. Overhead Phalænopsids were growing and flowering freely suspended from the roof. P. Esmeralda was represented by the poorest variety, but P. violacea and P. amabilis were very handsome; and attached to a raft were three or four flowering examples of P. Lowii, very pretty and distinct. The flowers are not large, but the colour is charming—a delicate bluish blush with a violet-coloured lip. Amid plants of Dendrobium Phalænopsis one has produced four handsome flowers, proving it to be the finest of the D. bigibbum group. It is figured in the *Bot. Mag.*, tab. 6817; but the figure does not represent such well developed flowers. Saccolabium Blumei majus is finely in flower. This good old species ranks amongst the most handsome of the genus, and Dendrobium formosum giganteum is also flowering remarkably well: as many as eight large fully developed flowers could be counted in one cluster. This plant does not succeed well year after year in collections; the growths decline in vigour after the second year. Probably the system of culture has something to do with it. The plants should be kept in the warmest house, and quite close to the glass while they are making their growth, and be freely supplied with water. The flowers are produced in autumn. After the flowering period is over they go to rest, and during winter keep the roots comparatively dry, though not so dry as D. Wardianum and D. nobile are allowed to become. They do best during winter in the Cattleya-house, and should be cultivated in Teak baskets. *J. D.*

## SEEDLING POTATOS IN IRELAND.

At the Dairy Show of the Royal Dublin Society, held last week in Dublin, a remarkable exhibition of seedling Potatos took place which is deserving of notice. The prizes were offered by the Commissioners of National Education of Ireland, for the best new varieties of Potatos raised from seed of the Potatos supplied by the Commissioners in the years 1882 and 1883 to teachers of National Agricultural Schools and schools having gardens attached—the object in view by the Commissioners being the mitigation of the disease by the raising and introduction of new varieties.

Four sets of prizes were offered. 1. For the best variety of round Potato for table use, £10, £5, £3. 2. For the best variety of kidney or long Potato for table use, £10, £5, £3. 3. For a variety of early Potato, round or kidney, which being tested at the farms of the Board of National Education in the year 1885, shall prove to be the earliest and the best in produce and quality, £10, £5, £3. 4. For the largest and best variety of Potato for cattle feeding, £10, £5, £3. A further prize of £10 was offered for the best report upon the system of raising Potatos from seed.

In response to these liberal prizes no fewer than 254 dishes of Potatos were exhibited in competition. Collectively, it cannot be said that they presented a very attractive appearance, many extremely poor examples being submitted, and several badly diseased. A great many seemed to partake of the character of the Scotch Champion, others of Victoria, Snowflake, and other well known varieties, indicative of their parentage no doubt. The judges had a very difficult task to perform in deciding on their respective merits. After much discussion it was decided to award the prizes in regard to appearance alone—no information being available as to their cropping qualities, &c., and the test of cooking being considered unfair in regard to the late varieties. Some eight or ten varieties in each set being selected, were recommended to be further tested by being grown next year under similar conditions, and again examined before being sent out. Of the prize winners, in the first set, Mr. W. McClean, Carmeen, Monaghan, obtain the first prize, with a very fine round white; for the second set, Mr. McClean was again successful, thus securing no less than £20. The first prize in the third set went to Mr. M. Hall, Kilgreaney, Bagnalstown, Carlow; and in the fourth, Mr. M. Bell, Gortagilly, Moneymore, Londonderry, was the successful exhibitor.

It will be interesting to note as to whether any of these Potatos will prove of superior vigour or quality to those now in cultivation. Our present impression is that they will not. The Commissioners are, however, to be congratulated on having given so much encouragement and support to the subject of Potato growing, which is of so much importance to Ireland.

## ROOT-PRUNING OF THE PEAR.

(*Concluded from p.* 493.)

Dwarfing Stocks.—The use of the Quince and other dwarfing stocks has also greatly assisted this and other modes of *petite culture*. But pot-culture itself is a mode of root-pruning. The cramping of the roots within the pot, their pressure against the sides, are powerful aids to fertility. And Pears in pots are growing for ornament, in addition to their usefulness. In front areas or small gardens, on terrace-door steps, in balconies, they are fit companions and formidable rivals to such plants as Box, Sweet Bays, Laurels, Laurustinus, Hollies &c. And few plants can equal well-formed Pear trees in pots or tubs, covered with white bloom in the early spring, clothed with the soft verdure of the young leaves, or with leaves of every colour in the autumn, and laden with their fruit of such varied size, colour, and form throughout the growing season?

### When to Prune.

About the middle of October is, as a rule, the best season to root-prune Pear trees; much, however, depends on season and local climate. The best condition is a fortnight or three weeks before the fall of the leaf. The leaves, however, should not be so immature, nor the root-pruning so severe, as to cause the leaf to flag too much, else will the advantage of early root-pruning be lost. The object of choosing this early period is to obtain the help of the leaf in stimulating the almost spontaneous production of new roots. The whole of the month of November is also suitable for root-pruning, but the earlier in the month the better, for the reason just stated, and likewise for the additional one of obtaining the remainder of the summer's warmth to forward the same purpose—the prompt emission and growth of fresh roots. In the case of very vigorous trees, that need a severe check, they may be root-pruned in June or July; this needs special care and skill, and should not be practised by novices.

### Method of Pruning.

As to the mode of root-pruning, it should be performed tenderly. Careful uncovering and examination should precede cutting. The barbarous method of going haphazard at the roots underground with a sharp spade somewhere in the direction of the vigorous shoots hardly deserves the name of root-pruning. Frequently the mere examination and uplifting of a few of the deeper boring roots will be all that is needed—root detachment or disturbance being equivalent in many cases to a considerable amount of root-pruning. Again, the uplifting of roots, placing them nearer the surface, and surrounding them with fresh soil, may prove equivalent to root-pruning. In cases where actual removal or shortening of roots is determined on, the cuts cannot be too short, clean, and prompt. Beware also of cutting too many roots, as the temptation is great after the labour of uncovering to prune too severely. Cover up as soon as practicable, bearing in mind that root-drying and root-fingering secure almost as severe a check as the actual removal of such roots.



Fig. 117.—Reversed training of Pear.

Unless in extreme cases, it is also wise and sound practice only to prune one-half of the roots at a time. By this means there will be little risk of losing a crop, and the tree will be preserved in good health while being root-pruned into higher fertility. Transplantation is also a complete substitute for root-pruning, though the two are mostly practised abreast. This, to some extent, is unavoidable, and hence the less need for adding intentional pruning, unless of wounded or bruised roots, at the same time.

### After-treatment.

This consists in adding maiden earth when practicable over the wounded roots, and mulching the surface with frost-proof litter of some sort—the first to stimulate the production and multiplication of new roots, and the second to preserve them in security against the severities of the first winter and spring, and also to secure them against the heat and drought of the succeeding summer. Roots lately pruned are in an abnormal condition, alike in regard to condition and place. They are more active, numerous, tender, and closer to the surface than roots in a normal state, and hence the necessity of special protection against cold, drought, heat, or other climatic changes. Where the first-formed roots are destroyed by those or other causes, the trees are virtually root-pruned twice, or even oftener, within the compass of a few months, and not seldom fail to re-establish them, become the prey of disease, or actually perish in consequence.

So soon as the roots get a fresh grip of the soil the trees are safe, provided the young and active fibres are protected by a surface mulching. Unless the root-pruning is performed too late, carried too far, or unskilfully performed, the trees will set and finish their next year's crop as usual, and probably prove sufficiently fertile ever afterwards, in consequence of the one skilful pruning of their roots; and should it prove otherwise, all successive root-prunings are rendered more simple and safe in consequence of the first, as all things are possible with fibrous roots, while there is often considerable risk in operating on fangy ones; but, as already stated, the greatest art in root-pruning, as in writing, is to know where to stop.

*D. T. Fish.*

## FRUIT NOTES.

Fruit Growing at Ealing.—The soil of this neighbourhood generally is of a good loam of a holding nature, resting on gravel at various depths, and is well suited to the cultivation of fruit trees, especially of Apples and Pears. There are a number of villa gardens, most of which have more or less a collection of fruit trees, and many amateurs take a great interest in fruit growing. It is very interesting to note the result of the different treament carried out; some go in for very close pruning, and stump their trees to appear more like a birch broom half worn out; others go to the other extreme, and allow their trees to grow at will; while others, more practical, and who know something about the cultivation of these trees, take the wiser course, and merely prune them into shape, well thinning the branches to admit of light and air, and root prune if over-vigorous, and thereby obtain good results. This is the best season for Pears I have known for many years, the trees are carrying good crops throughout the district, with scarcely any exceptions to varieties.

The north part, known as Castlebar Hill, is very heavy, and the subsoil is deep, heavy, brick earth, bordering on to clay; the other parts of Ealing vary, some part of the soil is of a rich deep loam, while in others it is lighter, stony, and more shallow, and nearer the gravel, therefore great care is required in making selections of fruit trees to suit these conditions. In ordinary seasons a great difference can be seen with regard to the fruiting of some varieties; where the soil is heavy, with a cold subsoil, many of our fine late Pears do not succeed, the fruit does not develope to its proper size, but becomes cracked, woody, and worthless.

### Pears for Clay Soils.

For such situations the following may be grown as standards, pyramids, and espaliers on the Pear stock, viz.:—Autumn Bergamot, Beurré Bosc, Beurré d'Amanlis, Beurré d'Aremberg, Jargonelle, Beurré de Capiaumont, Fondante d'Automne, Marie Louise, Jersey Grañoli, Marie Louise d'Uccle, Pitmaston Duchess, Thompson's, Souvenir du Congrès, Williams, Catillac, Belle Julie, White Doyenné, and Doyenné d'Eté. But pruning should be carried out with care, the system of close pruning, often practised should be avoided, the trees merely require pruning into shape, well thinning out the branches to admit of light and air, and allowing the trees plenty of scope, as it were, to let off the exuberant or over-strong growth, which otherwise when cut back too closely only produce stronger wood. In the case of over-vigorous growth judicious root-pruning, carried out at the end of October, should be resorted to, to induce them to bear. A selection from the earliest to the latest of the finest kinds grown as pyramids and espaliers can be brought together when judiciously planted in sheltered spots, especially where there are walls for the more tender kinds. Taking the neighbourhood as a whole, I have found the following sorts as pyramids (mostly worked on the Quince stock) fruiting well in most seasons, viz.:—Beurré Diel, Beurré Bachelier, Marie Louise d'Uccle, Doyenné du Comice, Beurré Superfin, Beurré Hardy, Thompson's, White Doyenné, Beurré d'Aremberg, Bergamotte d'Esperen, Maréchal de la Cour, Baronne de Mello, and Louise Bonne; they also succeed well grown as espaliers and cordons on this stock. I should recommend them to be largely planted, as they are easier to manage, making handsome compact trees of moderate growth, and with the assistance of mulching in the growing season the fruit comes to a large size. The following also do well as pyramids and espaliers, but must be worked upon the Pear stock, viz., Beurré Bosc, Beurré Clairgeau, Beurré d'Amanlis, Jargonelle, Marie Louise, Knight's Monarch, Passe Colmar, Pitmaston Duchess, Souvenir du Congrès, and Catillac, but more attention must be paid to these with regard to the pruning, also root-

pruning, as they grow much more vigorous on this stock.

A few sorts may be mentioned as best grown on walls, on a south-east or west aspect, viz., Chaumontelle, Brown Beurré, Beurré Rance, Duchesse d'Angoulême, Gansel's Bergamot, Glou Morçeau, Pitmaston Duchess, Marie Louise, and Winter Nelis; these rarely succeed here, unless planted on walls. They should be work on the Pear stock.

Where the soil is light and gravelly Pears do best worked on the Pear stock, but if worked on the Quince in such soils it would necessitate the addition of loam, heavy mulching, and frequent watering during the summer, otherwise the fruits come very small. *George Cannon, Ealing.*

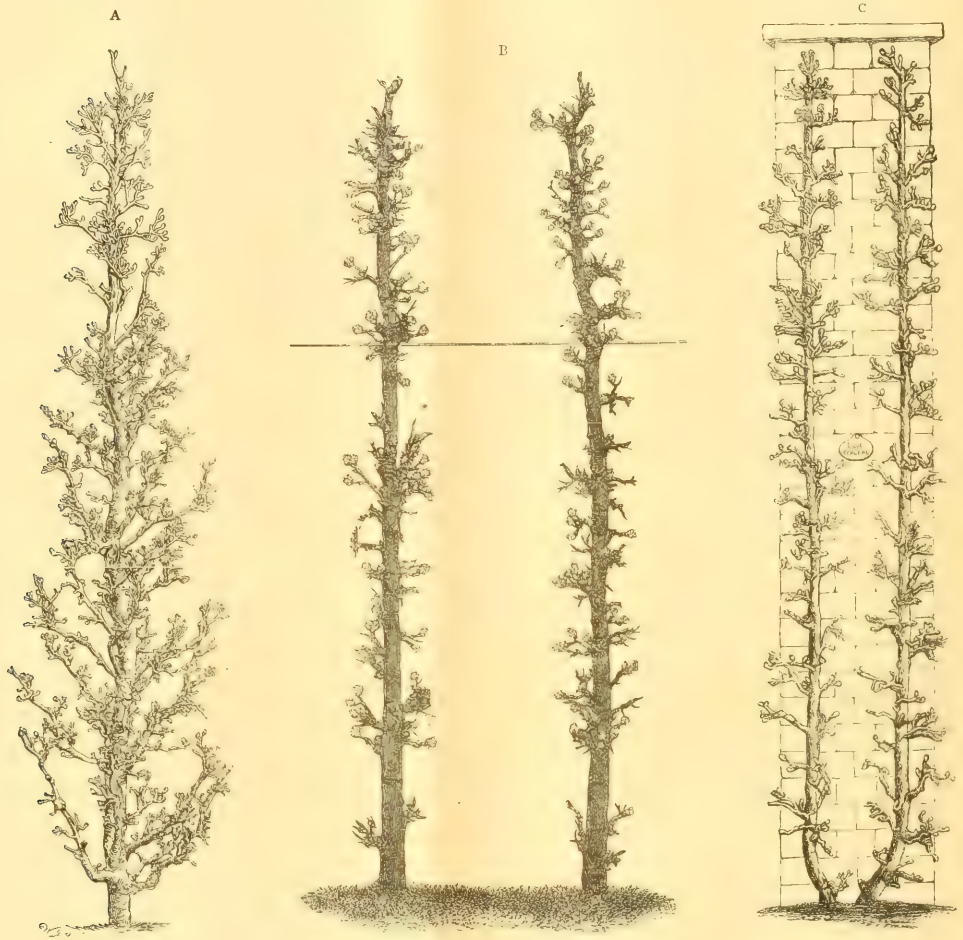



Fig. 118.—A, pyramid; B, C, upright Pear cordons, from specimens at Chiswick.

## ALPINE PLANTS.

Seed-sowing.—The present is the best time for sowing seeds of alpine plants, it may therefore be appropriate to furnish some hints on this subject. The various Anemones should be sown as soon as possible. I have noticed that those seeds which are sown soon after being gathered germinate immediately, and give very good results, whilst those which are sown the year after come up more slowly and with more difficulty. Last year I sowed seeds of Anemone alpina which had been collected in 1883. At the end of six months they had commenced to germinate, but with difficulty, and only gave very few plants, whilst the fresh seeds which were sown under the same conditions gave me cent. per cent. Not a single seed failed, and the plants are vigorous and strong; the same happened with Anemone sulfurea and A. vernalis. On September 15 last I sowed Anemone sulfurea, A. montana, and A. Halleri, which at this moment are growing as vigorously as the Lettuces and Cabbages of our kitchen gardens. The soil I find best is a simple mixture of peat, leaf-mould and sand, to which I add a little fine sphagnum.

I have also two magnificent beds of Arnica montana, sown at the same time, and which came up in the proportion of 90 per cent. But the difficulties of acclimatising this plant when taken and transplanted from the mountain are well known.

Edelweiss, Aster alpinus, Hypochæris helvetica, and in general all the Composites, germinate better when sown immediately after the collection of the seeds. I have noticed also that it is so for the most part with seeds furnished with a pappus or tuft of hairs destined to facilitate dispersion of the seed by the wind. Some seeds, however, such as those of Anemone narcissiflora, Violas, and Primulas, seem to succeed better when a little time is allowed to pass between the time of the gathering and the sowing of the seed. I have sown in the open ground in a bed facing south seeds of different rather delicate alpine plants; they seem to get on marvellously well. I think that this method should be more often practised than it is. Eryngium alpinum, Campanula thyrsoidea and barbata, Primula Auricula, Aster alpinus, Androsace lactea, and various Anemones accommodate themselves very well to this mode of sowing, which offers the great advantage of not needing so much care as is requisite when seeds are raised in pots or pans. For this system it is necessary to thoroughly drain the soil of the bed, so that the moisture may not kill the young plants. I mix with the soil one-fifth of coke-dust to render it more porous.

I have remarked that alpine plants raised from seed are much more robust and more easy to grow than those directly transplanted from the mountains, and, strange to say, they are less likely to vary. Perhaps this last observation may only apply to a limited number of species, but, at all events, I can affirm that it is so with many. *H. Correvon, Geneva.*

## PEARS AGAINST WALLS.

Two methods of growing Pears against walls do not always obtain the consideration which in certain sites they are deserving of. These I will refer to separately.

### Reflexed Training.

Frequently old wall-trained Pear trees are seen on which the lowermost branches, which were once the strongest and best upon the tree, have become weak, or have died off, and the tree finds vent for the superabundant growth on the tiers of branches higher up the wall, and the result of persistent hard pruning at that part only reproduces a succession of strong young growths, with the resulting long spurs. Practically, when trees arrive at this state, they cease to give perfect fruit, and the crops are usually meagre. The fact is, these young growths direct the energies of such trees into a wrong channel, which persistent pruning has little beneficial result in controlling. What the doctor would call a radical surgical remedy has to be undertaken, which is especially applicable to such trees as have lost some of the lower branches. Early in the season cut all the horizontal parts off but the two upper ones. Encourage these four branches to form young shoots upon their whole length, and so soon as these young shoots are sufficiently matured train them downward from the top of the wall to the base, as far as possible parallel with the upright holes. By saving two horizontal main branches on each side of the tree a greater choice of young shoots can be found for thus training downwards, so as to leave no unsightly gaps (see fig. 117, p. 523.) The greater recommendation for this style of training consists in the fact that not only will these young growths, downward trained, fruit freely and quickly, but the fruit will be generally of the finest size and quality. Whatever may be thought to the contrary this system may be described as one of natural tree culture. Observe, it is the upper branches of trees bending over with weight of fruit which give wildling or orchard tree crops. Here also, however abruptly, apparently distorted, the top branches of these trained trees, in all their vigour, are doing under peculiarly favourable circumstances the very same thing. Some growers may point to the bareness or loss of wall space. Whilst, however, Tomatos are so desirable it is needless to say that for the first summer or two admirable use can be made of such spaces. Again, where unappreciated sorts of Pears exist, wall trained, by simply grafting improved sorts on to these upper branches, in due time, and



Fig. 119.—Pyramid Pear Tree: from a specimen at Chiswick.

that incredibly limited in extent, vacant spaces on walls can be covered with bearing wood.

TREES NORTH PLANTED, SOUTH TRAINED.

Many vacant or partly vacant wall niches or spaces exist on the sunny sides of walls where opportunity may not exist to plant trained Pear trees, hence such spaces are often left bare. By procuring a standard tree or two at a small cost these may often be planted on the north or other side of such walls, and the growing heads trained over the walls to occupy such spaces by the same system of training as that described above. During dry seasons the roots will be able to furnish better support from the moister sources, and aided by sun and warmth good crops will result. *William Earley, Ilford.*

## Florists' Flowers.

### CHRYSANTHEMUMS IN OCTOBER.

THOSE who are growing for cut blooms for exhibition will now have their plants housed, and as near the glass as possible. Some fire-heat is absolutely necessary to have flowers of the highest quality, but it should not be applied unless really needed—either in frosty or very wet weather, when damp hangs about the house and is likely to injure the flowers. Calling upon Mr. E. Sanderson, the veteran President of the National Chrysantemum Society, at Harlesden Park, Willesden, a few days ago, it was found that he had housed his plants a week previously, but was giving them an abundance of air on all favourable occasions. It is scarcely possible to imagine plants in better health than the 150 or so Mr. Sanderson has in his house. They are literally laden with leaves, and such leaves too!—large, stout, and of a rich deep olive-green colour. But it is possible to have an extra strong growth at the expense of flowers, as some growers have found to their cost. But Mr. Sanderson is much too wary and experienced a grower to commit this mistake, and his plants may be seen throwing up large fat buds that cannot fail to produce fine flowers. One can quite understand the regret with which so keen a lover of the Chrysanthemum as the President of the National Society regards the process of disbudding; but then he is an exhibitor, and it is necessary he should cultivate accordingly. Were it not for this, and did he not grow for competition, he would allow his plants to carry more shoots and flowers, and he would be certain to have fine plants and blooms still.

As soon as his plants have gone out of flower, he secures cuttings which are thrown up from the roots close round the main stem: these are struck in his greenhouse, rooting in about six weeks. They are then potted off singly into 60-sized pots, placed in a close frame, or in the warmest parts of his greenhouse, and when well established are stopped. When they break again, if the two leading shoots, one at each side of the stem, are of equal strength, they are permitted to grow, and when these form a terminal bud it is either picked out or allowed to perish: two shoots are then allowed to go up from each stem, each of which carries a flower. This is the old system of Chrysanthemum culture observed for years past with the addition of the first stop.

If one of the shoots put forth at the first stop proves to be stronger than the other then the strong one is allowed to go away, and eventually allowed to carry three, or, if it is very strong, four shoots. The stems of the plants are tree-like; they are marvellously strong and healthy, and they will carry grand blooms.

Mr. Sanderson is in no sense of the word what is known as a "bullock grower," that is, one who cultivates by inordinate feeding. His plants are in 24-sized pots, or one a little larger, and they were placed in their blooming pots about the third week in June. The dry summer, and marked absence of rain, rendered the closest attention necessary while the plants were in the open air, and no labour or attention was spared. Now that the plants are thoroughly established in their pots, and indeed, for some time past, guano is occasionally administered by sprinkling some on the surface of the soil when quite moist, and then watering it in. Beyond this, no other stimulant is applied, and the greatest care is exercised that the soil in the pots is not allowed to become too dry, while a free current of air is admitted on all favourable occasions.

Thrips is in this way kept under. When the plants were housed they were thoroughly well fumigated; this is a good practice, because it cannot be done while the plants are in flower without danger of injury from the smoke. Earwigs require to be closely looked after. They appear to be singularly mischievous in that they reach the surface of the bud when the embryo flower is becoming perceptible, and pierce its centre, eating it away, and doing considerable injury. They take up their quarters within the curled portions of the leaves, and from this post of advantage sally forth after dark. When the plants were being housed each one was subjected to a rapping process against the ground, with the result that the vermin were dislodged and came tumbling to the ground. As many as six or seven were found on one plant. At night the plants are carefully gone over after dark by means of a light, and any marauder captured in the act has but a short shrift.

Mr. Sanderson's potting compost is made up of decomposed surface soil from pasture land and some well rotted cow-manure. How the plants enjoy this is abundantly seen at Harlesden Park. *R. D.*

## MESSRS. LANE & SONS' NURSERY, BERKHAMSTEAD.

EVERY one visiting these nurseries ought to make a point of inspecting the celebrated Vines. At the time of our visit a great deal of the fruit was already cut, but that which remained hanging on the Vines was of no mean order, the bunches averaging 2 lb. in weight, and the size of berry and general appearance very fair—Gros Colmar, Black Hamburgh, and Muscat of Alexandria being the bulk of these. Many of the Vine stems would measure 9 inches in circumference at 3 feet from the ground.

There is some evidence of failing vigour in these Vines in somewhat less heavy crops and poorer foliage, both of which must be attributed to the natural exhaustion of the soil; but there was no appearance of the fatal shanking. The stream of spring water still runs past the border, to which, by some, much of the success that has attended the Vine culture here is attributed.

Behind the town a large orchard exists, planted with large bush and dwarf standard Apples and Plums, the latter chiefly as standards. Filberts and Cob-nuts in variety are planted in alternate rows, and sometimes alternately in the rows as well. The production of Apples this year was very great, and the fruit fairly well grown, notwithstanding the dry weather. It was quite a fortnight later in being fit to gather; and in regard to some late Plums like the Wyedale, they will barely ripen ere the frosts strip the foliage from the trees. Nuts that grow here to a great size for bushes, and which are not cut into the bowl form so common in Kent and Sussex, have borne prodigiously, and the Nuts are in consequence smaller than usual.

Apples are found to do well, and are cultivated in large numbers both for sale as trees and for fruit. We saw large quantities of Lane's Prince Albert in store, the fruit smooth, firm, large, and handsome. This is one of the finest culinary kinds to grow, lasting as it does from October to May in good condition, and its cropping properties are prodigious. This is an excellent nursery for the tyro orchardist to visit in the early autumn before finally deciding on a selection of hardy fruits.

Roses are much grown as standards and bushes as well as in pots. We saw great breadths taken up with the hardier Teas, hybrid perpetuals, and Bourbon varieties, and with Manetti worked and unworked stocks. The nursery in which the fine Rhododendrons, Hollies, Conifers, &c., are grown is on the elevated common of Berkhamstead, some distance from the town. Here, arranged on undulating land, are fine breaths of Golden and Silver Hollies of all sizes, the Caucasian and round-leaved, and Portugal Laurels, strong healthy bushes of a dark green tint denoting perfect health. Azalea mollis is much grown from home-saved seed, and is found to grow just as freely as the Ghent varieties—no mean saving on imported ware. Abies concolor, A. amabilis and A. nobilis do well on this high land.

Amongst variegated plants, or those with silver and yellow tinted foliage, must be mentioned the several varieties of Irish Yew. These are generally identical in habit with the original tree, and undoubtedly of great use as contrasts with sombre-leaved plants in the pleasure ground. In masses the effects, in well-chosen positions, are extremely satisfactory. The growth is free yet dense, and some deviations from the type give spreading low growths useful for massing or clothing low banks.

Thuia Vervaeniana is another plant with golden-tinted foliage, free in growth, but less bright.

A fine break of Araucaria imbricata, raised from home-grown seed, was observed, and many of the choicest kinds of Rhododendrons.

A big border is reserved by the side of a road for these latter, which, being stocked with big plants in groups of three, permit the visitor to make a selection of the finest without the fatigue of searching the many quarters.

Much good planting material was observed in this division, which comprised both the ornamental and the useful; of the latter must be named the Damson Crittenden Prolific, a kind which will, before long, be largely planted. The Plum and its congener grow very vigorously in the stiff soil, making handsome stems and heads in a short space of time.

Messrs. Lane have planted an orchard of Damsons, consisting of these, and the Pershore and the Wyedale, a tart, late hanging clingstone Plum.

## A SELECT LIST OF THIRTY PEARS, SUITABLE FOR GENERAL CULTIVATION.

1. *Doyenné d'Eté* (Summer Doyenné).—This is the first Pear of the year, ripening frequently in the second week of July. It is valuable on this account. By gathering a few at a time, which should be kept a day or two to become mellow, its season may last a week or ten days. The fruits are small, but rather pretty, skin green, and bronzy-purple on the exposed side. Flavour sweet and pleasant. Tree of stubby compact growth, succeeding well on the Quince. An extraordinary and almost certain cropper. Raised by Van Mons.

2. *Beurré Giffard.*—This is a very pretty Pear, not so well known or cultivated as it should be. It generally ripens in the beginning of August. The fruits are of medium size, of a regular pyriform shape, skin pale green, mottled with bright crimson on the exposed side. Flesh melting, sweet, and pleasant. Tree of somewhat straggling growth, and only moderately fruitful. Raised by M. Giffard, of Angers, France.

3. *Jargonelle* (Grosse Cuisse-Madame).—This is a well known Pear, in all parts of the country. In Scotland it is the Pear by which all others are judged, and it succeeds there admirably grown against a wall. In the south of England it should be grown against a wall with a northern aspect, otherwise it is very inferior. Fruit long, pyriform, with a long stalk; skin mottle, greenish-yellow; quality excellent. A very old French Pear. There is a record of one planted at Rouen in 1588.

4. *Williams' Bon Chrétien* (syns, Williams', Bartlett).—This is an extremely well known Pear, and very largely cultivated for the London markets. It is the Pear of the season in and around London, no other variety being half so much appreciated. The fruits are large, and generally of good appearance, and of uniform good quality. To some the musky flavour is rather strong and objectionable. The tree is of free growth succeeding well as standards in the southern districts, and on walls in the northern. It is only a moderate cropper. It was raised at Aldermaston and sent out by Williams, a nurseryman of Chiswick, where the original tree is still growing.

5. *Madame Treyve.*—This is one of the finest of the new Pears, deserving of extensive cultivation. It generally ripens in the end of August or beginning of September, and lasts about a week or ten days. The fruit is large, of broad pyriform shape, generally pale green in colour, with slight patches of russet, and some streaks of red on the exposed side. Flesh very tender, melting, very juicy, rich, and pleasant. Tree of free growth, and generally cropping freely. Raised by M. Treyve, nurseryman, at Trevoux, France.

6. *Beurré d'Amanlis.*—This is a well-known and extremely valuable Pear, very largely cultivated for the London markets. Its season lasts through the latter part of September. The fruit is large, roundish ovate; skin bright green, smooth, dull brown on the exposed side. Flesh, melting, somewhat watery at times. Tree of strong free growth, succeeding well on the Quince. A great and constant cropper. Raised at Amanlis, France. The Beurré d'Amanlis Panaché is an extremely pretty striped variety of this.

7. *Souvenir du Congrès.*—This is a grand new Pear, having somewhat the appearance of Williams' Bon Chrétien, from which it has probably originated. It comes into use in the end of September. The fruit is large, of somewhat irregular form. Skin yellow, flaked with light russet. Flesh melting, partaking somewhat of the musky nature of Williams' Bon Chrétien, but not so rich as that variety. Tree of free growth, and pretty free cropper.

8. *Louise Bonne of Jersey.*—This is a well known and much esteemed variety, very largely cultivated for market purposes. It is the Pear of the season in France. Its season lasts during the greater portion of October. Fruit of medium size, regular pyriform, shape. Skin bright green, dark brown or purple on the exposed side. Flesh melting and juicy of the first quality. Tree of free growth, succeeding well on the Quince, and a pretty constant cropper. Raised in France, near Poiteau. A striped variety of this exists, which is exceedingly beautiful.

9. *Fondante d'Automne.*—A pretty distinct and well known variety, remarkable for its great sweetness and richness. In season the early part of October. Fruit of medium size, roundish obovate, with a large open eye. Skin dull green-russet, seldom coloured. Flesh melting, exceedingly rich, and full of flavour. Decays somewhat rapidly at the core. Tree of free growth and an excellent cropper.

10. *Beurré Hardy.*—A very fine and handsome Pear, and one peculiarly liked by birds and wasps, who find it sweeter than most other sorts. In season the early part of October. Fruit large, of a pretty regular turbinate shape. Skin of a uniform brown-russet, very pretty. Flesh melting, juicy, very sweet and pleasant. Tree of very fine pyramidal habit of growth, succeeding well as a pyramid on the Quince. Raised in France, and named in compliment to M. Hardy.

11. *Thompson's.*—A Pear of very fine quality, but by no means handsome. In season during October. Fruit of medium size, of irregular shape. Skin pale green, covered with patches of light russet. Surface of fruit very uneven under the skin. Flesh melting, very rich and juicy. Tree of free growth, and a great cropper. Raised by Van Mons, and named in compliment to Robert Thompson, of Chiswick.

12. *Jersey Gratioli.*—An old, distinct, and pretty well known Pear, much cultivated for the London markets. In season during October. Fruit large, roundish obovate, skin rough, of a uniform dull brown-russet colour. Flesh melting, juicy, with a fine brisk acid flavour, which is extremely pleasant. Tree of free stubby growth, succeeding well as an orchard standard.

13. *Suffolk Thorn.*—A very fine Pear, not half so well known as it deserves to be; comes into use shortly after being gathered during October. Fruit of medium size, turbinate in shape, skin mostly covered with warm russet. Flesh melting, sweet, with a somewhat musky flavour and very pleasant. Tree of somewhat thorny growth, like a wild Pear, very fruitful; succeeds well as an orchard standard. An English seedling, raised at Clavering Hall, Suffolk.

14. *Marie Louise.*—One of the standard Pears, unequalled by any in its season: much cultivated. Fruit long, pyriform, pale greenish-yellow, sometimes covered with russet. Flesh very soft and buttery, juicy, rich and excellent. In season through the month of November. If gathered successionally, they may be made to last a long time. The finest in appearance are those grown on walls, but those from standards or pyramids are generally much superior in flavour. If grown on the Quince they require to be double grafted.

15. *Beurré Superfin.*—This is one of the finest of Pears in cultivation. In season end of October and November. Fruit roundish, turbinate. Skin smooth, greenish-yellow flaked with russet. Flesh melting, very juicy, having a very pleasant rich acid flavour. Tree a good grower, succeeding well on the Quince. Raised by M. Goubault. *A. F. B.*

(*To be continued.*)

# The Hardy Fruit Garden.

Where there is a large number of hardy fruit trees grown, pruning should be commenced early in the autumn, but not before the leaves have fallen. Small bush and pyramidal trees, if they have been well looked after during the summer as to pinching and thinning of the young growth, will now need little attention as to pruning, merely looking over them, and cutting out any useless shoots that may have been overlooked during the summer. When this is done advantage should be taken of dry weather to wheel manure on the ground, and have it spread on the surface among the trees, taking care that the ground is clean, and free from weeds. Should the ground be too wet for hoeing small annual weeds might be lightly pointed in before spreading the manure on the surface, but by no means dig in weeds that are seeding; these should all be pulled up and burnt. Now is a favourable time to commence root-pruning any trees that may be growing to wood instead of producing fruit-buds. At the same time it should always be taken into consideration how large it is desirable for any kind of fruit tree to grow, either on the walls or in the open garden. In my opinion it is a great mistake to begin root-pruning until the trees have filled their allotted space. A small stunted tree can never be made to produce satisfactory crops of fruit, therefore it should be our aim to produce a fine healthy growth, by building up a good healthy fabric; we can then make it fruitful by root-pruning if required, but to root-prune a sickly or unhealthy tree, with the object of making it fruitful, is a mistake. Unhealthy trees may always be improved by careful digging under the roots and placing fresh loam round the roots. Old soil from the potting bench mixed with fresh loam and road grit or burnt ashes is a good and always comeatable material for placing round trees. Cuttings of Gooseberries and Currants may now be put in, they will strike root freely in any ordinary garden soil. When sparrows are numerous it will be advisable to go over the Gooseberry and Currant bushes, and dust them all over with soot and lime when they are damp in the morning. This will be found an effectual remedy, and if repeated say once a month during the winter will protect the buds and prove beneficial to the bushes. As soon as the leaves of Peach, Nectarine, and Apricot trees have fallen, the old wood should be gone over, and when required fresh nailed up, but all the wood of the current year should be unfastened from the walls and left in this state till spring, for if pruned now and nailed up it only encourages the buds to grow, where it should be our aim to retard them as much as possible. This only applies to trees on south walls. Fig trees may be tied up ready for protecting either with Fern or mats. *J. Smith, Mentmore, Bucks, Oct.* 19.

# The Propagator.

## THE PROPAGATION OF CONIFERS.

The Retinosporas, in their sphere, are excellent plants for decorative purposes; the symmetry of their shape and the variety, as well as the beauty of the delicate tints of colour in their foliage, always add a pleasing effect to their environments. Most of them are of small growth, and are suited for pot culture. In the cool conservatory or winter garden they can be kept in perfect health for years in small pots; they are also very effective in rock gardens, and are among the best subjects for furnishing beds in the flower garden in winter, as they move well when the beds are wanted for other purposes.

### Retinosporas.

Select for cuttings pieces 2 inches long from the tops of the side growths, taking care that the pieces are fully developed and the wood ripe. It would be waste of time to put in cuttings in an unripe state. When a few of the bottom leaf-branches have been trimmed off, and the bottom of the stem levelled with a sharp knife, the cuttings can be dibbled into 48-pots—a dozen round the edge and six in the middle of each pot. The cuttings must be watered with a fine-rose pot, and placed in a shallow case or frame in a cold house, or, rather, a house where the frost is kept out.

While in the frame the cuttings must not be watered overhead, but must be carefully watered with a fine-spout pot. They must not be allowed to become dry. The glasses of the frame must be taken off for an hour both night and morning. Any sunshine should be intercepted by appropriate shading. As soon as the cuttings are rooted the ventilation of the frame should be gradually increased, until at length the plants are hardy enough to be stood out in the open house. After a few days they can be potted separately into thumb-pots, watered, and placed on a front platform or shelf as near the glass as possible. Here the plants must be regularly watered, never allowing them to become dry. When the plants are strong enough they can be potted into larger pots and potted again if necessary.

The soil to be used for potting the cuttings should be composed of one half loam and the remaining half of equal quantities of peat and sand. A small quantity of finely broken potsherds should be added, and the whole well mixed together, and sifted through a fine sieve. For cutting pots some large 48's should be drained to a quarter of their depth, and then filled up with the above-named soil, which should be firmly pressed in.

The soil in which to pot the plants should be made up of three-quarters good turfy loam, and the remaining fourth of equal quantities of peat and sand, and to this should be added small quantities of charcoal and finely broken potsherds or ballast.

The treatment given above can be applied to the following varieties:—R. pisifera, R. pisifera aurea, R. squarrosa, R. obtusa, R. obtusa alba, R. obtusa aurea, R. obtusa nana, R. plumosa, R. filifera, R. leptoclada, and R. ericoides. The variegated varieties can also be grafted into young plants of more robust green forms. *T. O'B.*

(*To be continued.*)

# The Kitchen Garden.

## ASPARAGUS BEDS AND FRENCH BEANS.

The now ripe growths, together with all weeds, should be removed from the beds, followed by the removal of a couple of inches of the old surface soil. This should be replaced with 3 inches of rich, short manure; if a little fresh soil is at hand to mix with the manure before placing it on the beds, it would be beneficial.

A second batch of French Beans should now be sown in pots to form a succession to those now commencing to flower.

### Forcing.

If required early some Seakale, Rhubarb, and Asparagus must soon be lifted and placed into pits or houses to force. Providing a sufficient number of roots have been grown in the kitchen garden to meet these demands it is best to ascertain roughly the number, especially in the case of Asparagus, so that the stock can be divided into so many batches of a given number to extend over the season.

In order to start the roots quickly into growth, the first batches will have to be given a little stronger heat than will be found necessary later; simultaneously a batch of Seakale may be placed in the Mushroom-house for succession.

Asparagus is most conveniently and best forced in a frame or low forcing pit heated by hot-water pipes, wherein a bed of fermenting material can be raised up to within a foot of the glass on which to place the roots, in some fine light soil; failing this, the old-fashioned wooden two-light box is best, which can be placed on the top of a good lasting hotbed, and linings constructed outside, which should be added to as they subside, to assist in maintaining a steady heat. Once the rank heat has passed off, and the roots are placed on the bed, no air will be required until the grass is peeping through, after which time it must be admitted in accordance with the weather. The glass should be covered nightly with mats and other protection in the shape of dry bracken or straw.

The protection in the shape of dry leaves or straw should now be placed round the roots of Globe Artichokes, previously removing any old decayed leaves or old remaining stems. Some soil should be thrown on the leaves, or straw (whichever is used), to keep out wet, and also to prevent the protection being removed by the wind. *G. H. Richards, Somerley, Ringwood.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| Monday, | Oct. 26 | Sale of first-class Bulbs, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Royal Horticultural Society: Meeting of the Fruit and Floral Committees, at 11 A.M., at South Kensington |
| Tuesday, | Oct. 27 | Sale of Flowering Orchids, at Protheroe & Morris' Rooms<br>Clearance Sale of Nursery Stock at Putney, by Protheroe & Morris (two days). |
| Wednesday, | Oct. 28 | Sale of first-class Bulbs, at Stevens' Rooms<br>Sale of Plants, Roses, &c., at Protheroe & Morris' Rooms |
| Thursday, | Oct. 29 | Sale of Established and Imported Orchids, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Clearance Sale of Nursery Stock at Hendon, by Protheroe & Morris.<br>Sale of Nursery Stock, at West Wickham, by Protheroe & Morris (two days). |
| Friday, | Oct 30 | Sale of Imported Orchids, at Protheroe & Morris' Rooms. |
| Saturday, | Oct 31 | Sale of first-class Bulbs, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE NATIONAL PEAR CONFERENCE, which opened at the Royal Horticultural Society's Gardens at Chiswick on Wednesday last, and which will be continued until November 4, may be already chronicled as, in one respect, a great success. At the time of writing it is impossible to say much more than that the exhibition itself is successful beyond the most sanguine expectation. From the far North to the utmost South, from East to West, from sunny France and wet Wales, Pears have poured in in such numbers that more than six thousand two hundred plates loads the board; and if we count an average of five Pears to each plate, it brings the number of Pears exhibited up to the respectable number of thirty-one thousand Pears. Chiswick itself shows 200 sorts. Nearly 200 exhibitors show their produce and this "all for love," as no prizes of any kind are offered. But, of course, the mere record of so many thousand Pears and so many tons weight of crockery, however impressive it may be to the popular mind, is not a matter of first-rate importance to our readers. When we say that the noble vinery is full from end to end, and that two large tents do not suffice to hold the fruits, we have said enough on the subject of quantity. The sight in the great vinery, with the Grapes still clustering overhead, is impressive enough for a statistician, and beautiful enough for an artist—but these are, after all, secondary matters. The main object of the Exhibition is to collect information, and formulate it for future use. For this purpose the Exhibition offers greater facilities than any previously held. First, there is an unrivalled opportunity for establishing and correcting nomenclature; next, there are equally unrivalled means of testing the suitability of particular kinds to particular localities, and of observing the changes brought about by variations in stocks, methods of culture, aspect, soil, and the like. It is, indeed, most interesting to see the summer Pears of the South, like the Jargonelle, just in in the North of Scotland; most instructive to see the differences in colour of the same variety grown against a wall or on a standard. Jersey, we venture to think, carries the palm for quality, the Pears from the Channel Islands being superior to those even from the banks of the Loire. Of our own specially British Pears those from the noble county of Kent stand foremost, and once more assert the right of that county to the title of the Garden of England—an epithet which some eight-day wanderer in Devonshire has unthinkingly assigned in our columns to the latter county, to the wrathful, and we must say righteous, indignation of both men of Kent and Kentish men. Certainly the wanderer aforesaid, who has his eyes about him, will, we are sure, after seeing what Kent can do, admit with CÆSAR that it is "the civilest place in all the isle;" and if Exeter, whose fruit show is coincident with that now on view at Chiswick, can produce better samples than those shown from Kent, then we shall feel grateful that happy England should have two such centres of luscious fruit production. At any rate, at Chiswick the several counties have fair play, as their products lie side by side, and no favour is given to either. In point of numbers, we believe, Middlesex heads the list, as might have been expected; but the metropolitan county has no such advantages of soil and climate as Mid-Kent has. An enormous show of this kind necessarily entails some monotony and repetition, but in the report in another column we have endeavoured to bring into view the salient points of an exhibition of Pears, the like of which we never saw before, and which the present generation is hardly likely to see again.

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IT will be within the cognisance of many of our readers that efforts have lately been made, mainly at the instigation and through the exertions of Lord CATHCART, to introduce various wild species of POTATO for the purposes of cultivation and also for the purposes of cross-breeding and hybridisation. The introduction of new blood, it was thought, might give us new and more robust varieties, and possibly some that would withstand the attacks of the Potato fungus better than existing varieties. Mr. BAKER made known to us through the medium of a paper in the *Journal of the Linnean Society*, the species most likely to be of service from their tuber-producing habit, and rendered great service by his careful definitions and indications of habit and locality. To some of the conclusions and inferences at which he arrived we must respectfully demur; we accept our friend's facts with gratitude, and he will be the first to excuse us if we do not altogether see our way to endorse his views as to the nature of the tuber and other matters of speculation. Be this as it may, however, one of the species prominently brought under notice is the Solanum Maglia, discovered by DARWIN in islands off the south part of Chile in low-lying marshy places. It is quite clear from Mr. BAKER'S own figures, as well as from a comparison of specimens, that this is in some respects more nearly allied to the bulk of cultivated Potatos than is the Solanum tuberosum itself, from which they have hitherto been supposed to be derived, and which latter is a native of high mountain regions in Peru, subject to intermittent and scanty rainfall. Solanum Maglia has been grown for some time at Kew, but without producing much result so far as tubers are concerned. No sooner, however, do the magicians of Reading, we mean Messrs. SUTTON & SONS, get hold of it, than they manage to make the small tubers of Solanum Maglia produce a very respectable crop of large or medium-sized pinkish tubers, of irregular form and sunken eye, it is true, but still so far from unpromising as to suggest the probability of ultimately securing a new and distinct variety which for shape and appearance may eventually merit a place on the exhibition table. Moreover, the flavour when cooked is by no means bad, but is so good as in this case also to suggest the probability of great improvement in the future. This of itself is not a very great achievement, but it is not all; we expect a plant to "improve" under the hands of the cultivators, especially of those so skilled and experienced as Messrs. SUTTON and their assistants. But Messrs. SUTTON have not been content with this comparatively easy experiment, they have entered the field as hybridists, and have broken ground which we, like all those interested in the matter, have so long and so repeatedly urged cultivators to do. It is not every one—even granted the requisite skill and knowledge—who has the facilities, can afford the time, or exercise the patience requisite for such experiments, but Messrs. SUTTON have not recoiled from the difficulties and tedium of the task. Commercial men can hardly be blamed if they do not enter into matters which are the more fitting task of an experimental garden; but when they do take them up we ought to be specially grateful, for they are sure to do so on a large scale, and with an amount of care and oversight which others less favourably placed cannot give. At any rate, Messrs. SUTTON, exercising all due precautions to prevent fallacy and error, crossed the blooms of Solanum Maglia with pollen from one of Mr. FENN'S varieties, as narrated by them in the *Times* of November 29, 1884. If Mr. FENN'S production be truly a descendant of S. tuberosum, the process is one of hybridisation between two so-called species; if the two parents are merely varieties of one and the same species, the process is one of simple crossing, and not of hybridisation. But, in any case, the two processes, crossing and hybridisation, clearly only differ in degree. From the cross three berries were obtained in 1884, the seeds from which were sown in March of the present year, and treated under identically the same conditions in every respect, so far as could be, have now produced a crop of tubers, in which, as is usual in first crosses, may be seen an immense degree of variation in the amount and nature of the produce, in habit of growth, colour, size, duration, and the like. In some cases the seedlings produced four or five small tubers, not bigger than Peas; in other cases seedlings from the same cross yielded as many as ninety-nine tubers, ranging in size from that of a Pea to that of a large Walnut, but weighing in all only eleven ounces; while in another case forty-four tubers weighed two pounds twelve and a half ounces.

In some the skin is brown and rough, in others smooth and yellow, in some red, in others half red, half yellow. The height and character of the haulm varied like those of the tuber.

In some instances cuttings were taken from the plants, and these cuttings produced, *pro ratâ*, as much variety in tuber as those produced in the ordinary way, and one of the tubers so produced was the largest of the whole.

A tuber of Solanum tuberosum from Arizona yielded sixty-eight tubers of small size. Solanum Commersoni also produced tubers and flowers, which latter resisted all the efforts of the experimenter to effect a cross.

Seedlings from old and well-known varieties were also grown in the same way as seedlings of Solanum Maglia, and these proved, on the whole, less productive than the crossed seedlings of S. Maglia, but also showed a good deal of variation in the tubers.

In addition Messrs. SUTTON have succeeded in crossing the Victoria Potato with the pollen of Chiswick Red Tomato, and other Potatos with pollen from S. Dulcamara and S. nigrum, reversing the cross in some instances. From these crosses seed has been obtained, but we must await another season to ascertain the result. Such, in bare outline, are the results hitherto obtained by Messrs. SUTTON. So far they agree with what happens generally in first crosses. A great deal of variation has ensued, and some of the tubers are, to say the least, promising. Whether any of them will prove able to resist the attacks of parasitic fungi better than the varieties we have, remains to be seen. This year, happily, the fungus has hardly put in an appearance at all, and if growers would now destroy the few diseased tubers they find instead of throwing them on the dungheap, they might do much to mitigate the disease in future years. In any case, however, the thanks of all horticulturists, practical and scientific, are due to Messrs. SUTTON, and the results attained will, we trust, induce them to continue their researches another year. Those gentlemen gave us the privilege of inspecting the results of their experiments, and have furnished us with the following statistical details. We would further suggest that they should ascertain, not only the weight of the tubers in air, but also in water (specific gravity), as they



FIG. 120.—CLEMATIS DAVIDIANA: HARDY ERECT HERBACEOUS PLANT: FLOWERS BLUE. (SEE P. 530.)

would do to in the case of Swedes or Mangels, and thus obtain a truer insight into quality than mere weight in air can afford. They may not win success in the particular direction in which it is sought, but they are certain to gain some useful result by this process of questioning Mother Nature.

—— Solanum Maglia Hybrid Potatos.—

| No. | When [illegible]. | When planted. | Height of haulm. | When lifted. | Weight of produce. | Number of Tubers. | Colour of Tubers. |
|---|---|---|---|---|---|---|---|
| | 1885. | 1885. | Inches. | 1885. | Grms. | | |
| 1 | March | June 11 | 12 | June | [illegible] | 6 | Brown |
| [illegible] | .. | .. | 12 | August | 6 | 5 | White |
| [illegible] | [illegible] | [illegible] | 12 | .. | 11 | 4 | .. |
| 4 | [illegible] | [illegible] | 12 | .. | 11 | 1 | .. |
| | | | | | Lb. oz. | | |
| 5 | [illegible] | .. | 12 | .. | 0 [illegible] | [illegible] | Pink |
| 6 | [illegible] | .. | 12 | .. | [illegible] | 11 | White |
| 7 | [illegible] | [illegible] | 18 | [illegible] | [illegible] | 17 | Brown |
| 8 | [illegible] | .. | 24 | September 22 | 0 11 | 7 | Red |
| 9 | [illegible] | .. | 24 | .. | [illegible] | 28 | White |
| 10 | .. | [illegible] | 60 | September | [illegible] | 15 | .. |
| 11 | .. | .. | 12 | .. | [illegible] | 25 | Brown |
| 12 | [illegible] | .. | 18 | .. | [illegible] | 9 | White |
| 13 | .. | .. | 60 | .. | [illegible] | 61 | .. |
| 14 | .. | .. | 54 | .. | 1 [illegible] | 43 | Dark red |
| 15 | [illegible] | [illegible] | 18 | .. | 1 [illegible] | 54 | White |
| 17 | .. | .. | 60 | .. | 1 [illegible] | 23 | .. |
| 18 | .. | .. | 30 | .. | [illegible] | 28 | .. |
| 19 | .. | [illegible] | 60 | .. | [illegible] | 41 | Pink |
| 20 | .. | .. | 30 | August | [illegible] | 9 | Pink |
| 21 | .. | .. | 12 | .. | 0 [illegible] | 25 | White |
| 22 | .. | .. | 72 | September 22 | 1 [illegible] | 20 | .. |
| 23 | [illegible] | [illegible] | 42 | August | 1 11 | 9 | .. |
| 24 | [illegible] | [illegible] | 30 | .. | [illegible] | 3 | Pink |
| 26 | [illegible] | [illegible] | 60 | September | [illegible] | 7 | Brown |
| 27 | .. | .. | 72 | .. | 1 [illegible] | 11 | White |
| 28 | [illegible] | .. | 60 | August | [illegible] | 17 | .. |

The last four (Nos. 24 to 28) were sown like the others, but when about 9 inches in height the tops were taken off to increase the number of plants, as was hoped; but though the cuttings grew and yielded well, all four of the parent-plants died.

—— Clematis Davidiana.—This is one of the annual species introduced from Northern China by the Abbé David, and appropriately named after him by the late M. Decaisne. For the specimen whence our illustration was taken, we are indebted to Mr. Lynch, of the Cambridge Botanic Garden, and a comparison of the figure now given (fig. 120) with that in M. Decaisne's memoir on the tubular-flowered Clematis, will show how greatly the plant has advanced in the matter of attractiveness. The flowers are of a rich blue colour, with a powerful perfume, as in C. flammula, and so far seems to have produced stamens only. M. Decaisne mentions that the dried specimens in herbaria are likewise male. The plant dries down in winter, but the stock is quite hardy, so that we have in it a notable addition to our collection of herbaceous plants. A full description is given in M. Decaisne's Monograph in the *Nouvelles Archives du Museum*, and in the *Flore des Serres*, vol. xxii., p. 163. For the rest our illlustration tells its own tale.

—— Wisley.—We understand that some illustrations of Mr. G. F. Wilson's garden at Oakwood, Wisley, will be published in the *Graphic* of October 24.

—— The De Candolle Prize.—The Physical and Natural History Society of Geneva offers a prize of 500 francs for the best monograph of a genus or family of plants. The manuscript may be written in Latin, French, German, English, or Italian, and should be sent to M. le President de la Société de Physique et d'Histoire Naturelle de Genève, a l'Athenée, Genève, Switzerland. The Society would probably publish the selected monograph in its *Memoirs*.

—— Narcissus monophyllus.—Mr. Ware skips from autumn to spring at a bound, and nullifies winter in a manner as agreeable as surprising, by sending us flowers of the lovely white Hoop-petticoat Narcissus.

—— The Physiographe.—M. Delapierre, 33, Rue du Faubourg Saint Antoine, has forwarded us one of these useful implements, destined to be used instead of the camera-lucida. The prism is replaced by small mirrors and a neutral tint reflector borne on a horizontal arm, and capable of being easily adjusted and focussed. It is applicable for portraiture, landscape, reproduction of plans, drawings, &c. From the trials that we have made with it we have found it easier and quicker to manage than the camera, while the image is equally well defined, and the point of the pencil not so subject to those disappearances which render camera drawing so vexatious a proceeding. Moreover, the apparatus is less expensive than the ordinary camera.

—— Mr. Bunyard's Fruit-room.—Of this illustration given in our last issue, Mr. Bunyard, of Maidstone, writes:—"It was made of matchboard and quartering, a cheap affair, and yet keeps fruit as long as possible. It is topped with reeds from the Medway marshes. The boards and slabs at the sides are painted green, and the base of the reeds was creosoted, and we expect it to stand for twenty years. The old man who thatched it told me that the 'reed' was practically indestructible if laid properly, and that he had used over again materials from an old barn that had stood for eighty years."

—— Ghent Horticultural Society.—At a meeting of this Society, held on October 12, the following awards were made:—First-class Certificates to M. Jules Heye-Leysen, for Cypripedium Fairieanum; to M. Vervaet & Co., for Dendrobium species from Birma; to M. Desmet-Duvivier, for Eucharis Sanderiana. Commendations for novelty to MM. Vervaet & Co., for Comparettia macroplectron; to M. Ed. Pynaert, for Cypripedium Arthurianum; to M. Desmet-Duvivier, for Cattleya superba splendens. Cultural Commendations to M. L. Spae-Van der Meulen, for Cocos Blumenavi; to M. Bernard Spae, for Tillandsia musaica.

—— Lord Mayor's Day.—Mr. E. S. Williams has, we learn, been entrusted with the floral decorations at the Guildhall on November 9, 1885.

—— Amusements at the American Exhibition, 1886.—"America in Miniature" would not be complete without an effort to combine recreation with instruction. It is best in these matters to have as little hypocrisyas possible. Where one person cares for the exhibits, probably half-a-dozen prefer the agreeable accompaniments; nor can they be blamed for a taste so natural. The Council have, therefore, from the inception of their work, while bestowing every attention upon the technical and educational purposes of the Exhibition, been mindful of the necessity of providing such forms of legitimate recreation as shall conduce to render a visit to the American Exhibition entertaining as well as instructive, and these will include not only excellent music and cheerful surroundings, but many novelties not hitherto enjoyed by Europeans. The site selecteed will furnish 10 or 12 acres of grounds for these purposes, and afford ample space also, for the display, in climatic sequence, of exclusively American Conifers, and other plants, shrubs, and flowers, including an avenue commencing with those found in the Northern and Eastern States, and ending with those of the Southern and Western States. The chief of the horticultural department is Mr. William Goldring.

—— The Gardeners' Royal Benevolent Institution.—The Committee will meet early in November next to consider the additions to the Pension List which are to be made in January, 1886. The Committee will be greatly obliged by the collecting cards being sent in on, or before November 1, as upon the result of the collection the number to be placed on the Pension List will mainly depend. At the last meeting of the Committee Baron Schroeder, The Dell, Egham, was elected Vice-President, in room of Edmund Wilder, Esq., deceased. He has, we understand, written to the Secretary, that he will accept the office with pleasure, and will continue to give the Institution his best support and aid.

—— National Rose Society.—The meetings of this Society have been arranged to be held in 1886: the Metropolitan Show at South Kensington on July 6; the Provincial Show at the Botanic Gardens, Birmingham, on Thursday, July 15. The following Rose Show fixtures have also been announced:—Farningham, June 30; Reigate, July 1; Tunbridge Wells, July 2; Eltham, July 3; Sutton, July 7; Helston, July 8; and Wirral, July 10. These Societies are all affiliated with the National Society.

—— The "Botanical Magazine."—The October number contains figures of the following plants:—

*Chamædorea Arembergiana*, t. 6838. — An elegant dwarf Palm, not exceeding 5½ feet in height, with a crown of pinnate leaves, each 6—7 feet long, and with ten to fifteen pairs of drooping oblong lanceolate leaves. The whitish flowers are borne on long, pendulous catkins, which emerge from the trunk beneath the crown of leaves. It is a native of Guatemala, and requires stove treatment.

*Fuchsia ampliata*, Bentham, t. 6839.—A species native of the Ecuadorian Andes, with leaves margined with red, and with long, slender, trumpet-shaped scarlet flowers. It was introduced to Kew from Quito, through the late Isaac Anderson-Henry.

*Anemone polyanthes*, t. 6840.—A hardy herbaceous plant, 12—18 inches high, with rounded palmately lobed hairy leaves and star-like white flowers in an umbelliform inflorescence. Each flower measures about 1½ inch across. It is a common Himalayan plant, extending from Kashmir to Sikkim.

*Callipsyche aurantiaca*, t. 6841.—This plant, a native of the Andes of Ecuador, combines the leaf and habit of Eucharis with flowers of the shape of those of a Hippeastrum, but yellow, and with very long declinate stamens. The leaves are produced after the flowers. It is a very striking plant.

*Phacelia Parryi*, t. 6842.—A native of Southern California, like its near ally, P. campanularia, but with narrower leaves and shorter corolla tube. P. campanularia is among the most splendid annuals introduced of late years (by Mr. Thompson of Ipswich) but is as yet scarcely known. The present is hardly inferior.

—— The National Chrysanthemum Society. — The autumn general meeting of the members of this Society (one of the quarterly gatherings provided by the rules) took place at the "Old Four Swans Inn," Bishopsgate Street, on the 19th inst., when there was a large attendance of members. The Hon. Secretary, Mr. William Holmes, reported that sixteen societies had become affiliated under the National Society, and nominated for election twenty-two new members, making the total number 295. A sub-committee was appointed to draw up rules for the guidance of the Floral Committee. Some correspondence was read in reference to suggestions that prizes should be offered for late Grapes on the occasion of the exhibition of late

flowering Chrysanthemums in January next. The Hon. Secretary advised that the matter should be left in his hands. The Society had no funds from which to offer prizes, but should any subscriptions be sent in specially for that purpose he would ask the committee to arrange certain classes for Grapes according to the amount received. It was believed that special prizes would be offered for late Grapes at the January meeting, and the particulars would be announced at the earliest possible moment.

—— Caryopteris mastacanthus.—After the late severe frosts, when the thermometer fell to 26° and 23° Fahr., it is pleasing to see the attractive bright blue flowers of this Verbenaceous plant as showy as ever, and without evidence of having suffered in any material way. Truly at Kew it enjoys the protection of a wall on a southern aspect. The contrast becomes more conspicuous when we compare it with the blackened condition of Tropæolums, Dahlias, and Boehmeria nivea, the later of which exists in the open air all winter, and renews itself annually from the rootstock. Not only is the plant in question notable in the order to which it belongs, but it supplies a desirable colour in the waning days of autumn. The individual flowers are small, but produced in axillary clusters in great profusion, they exhibit a striking contrast to the deep green colour of the ovate-oblong serrated leaves. Even although so nearly hardy it would repay cultivation in a greenhouse where it would introduce its own characteristic distinctness amongst the other appropriate occupants of the house at that season. It produces numerous branching stems about 2 feet in height, and a group of it grown in pots would have an excellent effect. It has recently been figured in the *Botanical Magazine*, t. 6799, and a full page illustration has been given in our columns.

—— Horticultural Club.—The first monthly dinner and *conversazione* for the winter season took place on Tuesday last, at the rooms, 1, Henrietta Street, Covent Garden. There was a large attendance, including Mr. G. Lee, Chairman; Professor Foster, Revs. F. H. Gall and T. Flintoff, Messrs. Deal, George Paul, Druery, Cousens, Stoltenhoff, Collins, Stamfels, &c. The following new members were elected:—Rev. W. Wilks, Shirley, Croydon; Messrs. E. B. Lindsell, Helston; Arthur Turner, Slough; W. H. Williams, Salisbury; Herbert Cutbush, Highgate; and George Bunyard, Maidstone. Professor Foster opened an interesting discussion on the germination of seeds, which was continued by Mr. George Paul, Messrs. Druery, Cousens, &c. The thanks of the members present were given to Professor Foster for his kindness in introducing the subject, and for the interesting facts brought forward.

—— Adhatoda cydoniæfolia.—Unlike most members of the Acanthaceæ, this has a slender somewhat twining habit, and is most suitable as a basket plant or for training up the rafters of a stove. It is one of the five Brazilian species, and seems rather variable in the amount of hairiness of the leaves. There is a form of it in the Palm-house at Kew, figured in the *Botanical Magazine*, t. 4962. It is a much smoother plant than that figured at t. 25, and described at p. 148 of Martius' *Flora Brasiliensis*, vol. ix., but in other respects the figures agree. The flowers are very showy, and freely produced in axillary and terminal clusters on the growing shoots. The tube and upper lip are white, with the exception of the tip and upper margins, which are purple. The lower lip is broad, three lobed, and a deep rich purple verging on violet, with a longitudinal median white stripe. It would constitute an excellent companion to and contrast beautifully with Asystasia scandens, belonging to the same natural order, and producing large white flowers, widening upwards or funnel shaped. Its showy congener, however, under notice, has ringent flowers and is closely allied to Justitia.

—— Landscape Gardening.—We learn from the *Sussex Daily News* that the new cemetery of the Brighton and Preston Cemetery Company is to be made very pretty. The difference a good landscape gardener can effect in the appearance of a bare expanse of land, if given *carte blanche* in the utilisation of the land, is very considerable. The cemetery company have sought the services of a landscape gardener, and have accepted the plans of a gentleman well known in Brighton, and who acquired a considerable reputation for the skill with which, under his direction, 21 acres of land at Stoke-upon-Trent, devoid of natural beauty, were converted, according to Mr. Milner's plans, into one of the prettiest cemeteries in the country. Mr. Sydney Marshall, son of Mr. E. J. Marshall, of the Brighton Grammar School, is entrusted with the duty of laying out the new cemetery at Brighton. His plans, while not disregarding the importance of leaving as much land as possible for grave spaces, point to the addition to Brighton of a cemetery which will tempt many to resort to it as an agreeable resort, and which will afford another proof of the surprising results of landscape gardening, of which Brighton has had several instances. Trees, shrubs, and flowers are to be freely used, and curved drives and walks are to be constructed with such freedom as will completely alter the aspect of the treeless and roadless acreage of arable land which the company have secured on the southern and eastern sides of the existing parochial cemetery.

—— Yeovil Chrysanthemum and Fruit Show.—This show will be held on Tuesday, November 17, when a Silver Cup of £5 value will be awarded for twenty-four blooms, twelve Japanese and twelve incurved, distinct varieties. Moderate money prizes and the National Chrysanthemum Society's Medals will be awarded in other classes.

—— Bees and Bee-keeping.—Mr. Frank Cheshire has commenced the publication destined to be *A Complete Treatise on the Anatomy, Physiology, and Profitable Management of the Hive Bee* (L. Upcott Gill, 170, Strand). In addition to a summary of general knowledge on these matters, Mr. Cheshire promises us much that will be in all respects new; and as the author is known to have been long engaged in research, we look forward with interest to future issues. The first part opens with some very clear descriptive details relating to the natural history of the bee and the economy of the hive-bee. Mr. Cheshire rightly remarks that it is only a half truth to say practice makes perfect, practice without intelligent insight is mere mechanical repetition, or stereotype, but "practice hand in hand with accurate knowledge and observation works out perfection."

—— Manchester Horticultural Improvement Society.—The first meeting of the session will be held in the Memorial Hall, Albert Square, Manchester, at half-past 7 o'clock on Thursday evening, October 29, when the election of officers, &c., will take place, after which a *resumé* of the past session will be given by Mr. B. Findlay (President).

—— The Lambeth Amateur Chrysanthemum Society.—This most deserving Society, which has now for several years taught the inhabitants of this murky portion of the metropolis how well the best of autumn flowers, which helps to brighten up many a court garden and window-sill, can be cultivated even under such conditions, will hold its show on November 3 and 4.

—— Presentation.—On the evening of Friday, the 16th inst., Mr. George Smith, who is about to leave the employment of Messrs. Dickson & Co., seed merchants, Edinburgh, was met by a number of his friends connected with the trade, and presented with a handsome writing desk, bearing a suitable inscription, as a tangible proof of the esteem in which they hold him. A most enjoyable evening was spent.

—— The Adirondack Forests.—A report has been presented to the State of New York, dealing with the present condition of the forests of the Adirondack plateau, a region ill-adapted for agricultural operations. The forests have been, as elsewhere, recklessly destroyed, but what remain are considered as essential to the continued prosperity of the State, and their destruction must be followed by wide-spread commercial disasters. The Commissioners have obtained proof that the flow of the rivers has decreased within the memory of living men from 30 to 50 per cent., while the damage from spring floods and summer droughts is increasing. The report ends with a series of practical suggestions applicable to the particular case drawn up by the Commissioners, among whom is Professor Sargent, of Harvard University.

—— Gardening Appointment.—George Harris, late Foreman at Arle Court, Cheltenham, has been appointed Head Gardener to J. T. Dugdale, Esq., Seizincote House, Moulton-in-Marsh, Gloucestershire.

# FORESTRY.

## OCTOBER: PLANTING.

(*Continued from p. 432.*)

Towards the end of the month commence the general thinning of plantations, reserving, of course, such timber as it may be intended to bark in spring. As soon as the thinning is completed all timber, firewood, and branches should be at once cleared out, the former being lotted for sale, and the latter converted into faggots for home consumption. In lotting wood always place the various kinds and sizes together, and as near clearance roads as possible, few things enhancing the value of timber more than ease of transit and delivery. The branches for faggot-making may be collected in heaps alongside the woodland drives, where they may be worked up as time and circumstances permit. Firewood had better be conveyed outside the wood, and formed into heaps containing a load each, thus not only preventing trespass, but allowing of their clearance by purchasers when convenient. General forest pruning had best be carried out at the same time as thinning, branches cut back from woodland drives, and ditches cleared of all *débris*.

Ornamental Conifers should also receive attention in the way of removing rival shoots and any branches that bear too great a proportion to the stem, taking care to cut clean, and deface the marks where amputation takes place. This latter may not be at all necessary in the case of small twigs and branches, but where the cut exceeds a couple of inches in diameter it is better not only for the tree's sake but for appearance also, to obliterate the marks of pruning.

The luxuriant growth of trees and shrubs during the early summer months received a slight check later on by the unusually dry weather, but the showery nature of the past month has caused several, notably the Oak and Elm, to push a second growth, which is both striking and effective, the light green tints of the young growths offering a rich contrast to the now dark green of the older foliage. (Will such trees as are making a second growth exhibit two distinct rings or layers of wood for this season?)

Woodland vegetation suffered very severely during the months of July and August, many of the more robust growing Ferns, the perennial Mercury and other like plants being quite killed down by the protracted drought. Insect pests have also been unusually abundant and destructive. The Limes have suffered very severely from that ever increasing fungus—Capnodium Footii, which has in many cases turned the upper surface of the leaves completely back, after which they become sickly and fall off prematurely. Hardly any shrub seems exempt from its attacks—Laurels, Laurustinus, Holly, Aucuba, Box, Privet, Barberry, and the Arbutus faring alike. Continue the cutting and pruning or switching of hedges as convenient, but it is well to forward the work as much as possible during the present and following months. The preparation of ground by trenching for the reception of Quicks should be pushed forward so that an early start at hedge planting may be got, as it is well known that autumn formed fences succeed better than where the work is delayed until the spring. In preparing the ground along the line of fence the soil should be slightly raised in the centre so that the plants will stand rather above than below the general ground level. Too little attention is usually given to the formation of hedges, but when it is remembered how well-bestowed a little labour and care is on this important operation one can only wonder at the slovenly manner in which the work is usually performed. Fill up gaps in existing fences towards the end of the month, using extra strong and well-rooted plants for the work. Prepare the ground previously by a careful picking and addition of good loam from an adjoining field. Finish ditch-scouring during the month, and spread the clearings either over the adjoining ground or convey it to the compost heap.

Look well to the gratings of closed drains, so that everything may be in good working order before the usual rains set in. This is a very important duty, for if long neglected it causes much labour and expense. Drainage of wet, cold woodlands should also be well forwarded before inclement weather comes upon us. Repair roads and walks, which should now be kept in a dry, passable condition, and free from all ruts and surface inequalities. Freshen the sides of walks by a slight verging

or clipping, and the centres by a coating of gravel, at the same time taking care that no overhanging vegetation interferes with traffic, which, especially during damp weather, is most objectionable. Leaves will now be giving a little extra work to the roadmen, but these should be promptly removed, more particularly within the policy grounds, and conveyed to the *dépôt* for such. Mow and keep tidy lawns and pleasure grounds, fork over shrubbery borders, and trim-in all straggling branches from evergreens. Turf laying and groundwork improvements may also be engaged in during dry weather, and when the state of the soil will permit.

An occasional look to woodland fences, tree guards, and rabbit-proof wire nettings will often prevent serious damage. Where young and unfenced plantations are exposed to the depredations of hares and rabbits it may be found necessary to wash the stems of the more valuable, during dry weather, with any of the prepared solutions sold for this purpose. A good mixture, that generally proves efficacious is Stockholm tar, nightsoil and lime, but this, like other specifics, requires constant renewal, thereby occasioning no small expense in labour as well as the cost of the tar. Wire netting is in the long run perhaps the most effective as well as cheapest preventive against the depredations of game with which I am acquainted. *A. D. Webster, Penryhn Castle, North Wales.*

## PEARS.

(*continued from p. 440*)

Varieties :—In continuation of my notes on Pears, I consider this part of my subject, namely, "Varieties, their merits and peculiarities," as the most difficult one to deal with, for the reason, that necessarily my remarks can only have a limited signification. What I mean is, that the same variety of Pear often varies so greatly—even if grown at but a short distance—as to be scarcely recognisable as the same kind. I purpose shirking the difficulty by asking for licence to "speak only that I do know," as regards the merits, &c., of the various kinds grown here; and probably beginners in Pear culture, with a similar soil (sandy loam resting on gravel) and climate, may gain some little assistance from my experience. The Pear Conference that is now being held fully recognised, and to some extent met the difficulty here mentioned, by issuing to every exhibitor forms ruled for the insertion of various particulars, such as soils, situations, and the names of kinds best suited to particular districts; and when these particulars are published—as presumably they will be—there will be little excuse for holding aloof from Pear culture, on the ground of not knowing what sort to plant. As regards myself I have long since arrived at the opposite condition; namely, as to what sorts I ought not to plant. As to which is the greatest difficulty of the two, it would be hard to say, and if the Pear Conference should insist on reducing the twelve hundred varieties that are said to be in cultivation to fifty, this result will not be the least of the benefits it is likely to confer on gardeners.

We have here upwards of 100 varieties, and so far as continuous supplies of ripe fruit is concerned, we could well afford to dispense with sixty of them, and in making out the following list I have had special regard to this idea, many good October and November Pears being expunged, for the simple reason that it is in those months that most of our best Pears ripen. I place them in the order they usually ripen here :— Beurré Giffard, Jargonelle, Souvenir du Congrès, Williams' Bon Chrétien, Beurré de l'Assomption, Beurré d'Amanlis, Flemish Beauty, Madame Treyve, St. Michel Archange, British Queen, Beurré Superfin, Fondante d'Automne, Fondante Van Mons, Autumn Bergamot, Beurré Capiaumont, Beurré Hardy, Brown Beurré, Comte de Lamy, Emile d'Heyst, Duchesse d'Angoulême, Louise Bonne of Jersey, Seckle, Suffolk Thorn, Urbaniste, Beurré Bosc, Beurré Diel, Doyenné du Comice, Durandeau, Gansel's Bergamot, Maréchal de la Cour, Marie Louise, Pitmaston Duchess, Délices d'Hardenpont, Nouveau Poiteau, Thompson's, Huyshe's Prince Consort, Passe Colmar, Winter Nelis, Chaumontel, Beurré Bachelier, Dr. Trousseau, Beurré d'Aremberg, Glou Morçeau, Huyshe's Victoria, Knight's Monarch, Beurré de Jonghe, General Todtleben, Josephine de Malines, Bergamote d'Esperen, Easter Beurré, and Olivier des Serres. It will be noted how few very early Pears are in the list, and my reasons for all but excluding them are, first, that they all lack keeping properties, they must be used the moment they are ripe; or else wasted; next, there are few of them of good quality, most are mealy and insipid; and lastly, they are not wanted, for in July and August there is



Fig. 121.—Beurré Diel, on Quince, five years old.



Fig. 122.—Single cordon training



Fig. 123.—Espalier cordon, on Quince, natural habit; four years old.

generally abundance of small fruits that can be used for dessert. For most gardens a couple of early kinds would be found to be ample, and the two to which I give preference are Williams' Bon Chrétien and Beurré de l'Assomption; the latter variety, I am told, does not fruit satisfactorily in many places, but here it never fails to produce a full crop of magnificent fruit. Our trees are all worked on the Quince stock and trained as orchard cordons. In regard to the "merits and peculiarities" of varieties generally the subject would be interesting enough, but my leisure for such work is a restricted quantity, and will not admit of my treating the subject at full length. Hence I shall content myself by allusion to the best kinds only, and by best I wish to be understood as meaning those kinds that possess the greatest number of good qualities, not necessarily such as are the largest and best looking. These are desirable points, but quality, keeping properties, and fertility are infinitely preferable.

In the above list the kinds that possess all the points of merit here mentioned are :—Beurré d'Amanlis, British Queen, Beurré Superfin, Beurré Hardy, Comte de Lamy, Duchesse d'Angoulême, Urbaniste, Beurré Diel, Doyenné du Comice, Durandeau, Marie Louise, Pitmaston Duchess, Délices d'Hardenpont, Thompson's, Winter Nelis, Chaumontel, Glou Morçeau, General Todtleben, Josephine de Malines, and Easter Beurré. It therefore follows that these are the varieties that should have attention in preference to all others; but I would not be understood as meaning to the exclusion of all others, except for gardens of limited area; and in the largest gardens they should be grown in greater numbers than varieties that may be handsomer but are less meritorious in other respects.

### Effect of Stock.

Then with regard to the different effects produced from the same variety of Pear growing on the Quince, and of the same variety on the natural stock, one would naturally suppose that the greater vigour of a tree on its own stock would produce the largest and best fruit, but it is quite the exception for it to do so, and the only instance within my recollection are the varieties Josephine de Malines, Marie Louise, Winter Nelis, and Comte de Lamy—all small Pears, and yet extra fine in both size and quality, though lacking colour. Such an occurrence would warrant the belief that the larger varieties of Pears would be proportionately increased in size, but what is the fact? Duchesse d'Angoulême comes small and deformed; Doyenné du Comice, too, is small, and never colours; General Todtleben gets a fair size, but is covered with spot, and there is not the faintest bit of red on the side next the sun; Easter Beurré does a little better, and Beurré Diel the best of all the large kinds; but in all there is wanting that matured appearance of colour which is never wanting in the same varieties of fruit grown on the Quince stock, in addition to the larger size of the fruit, though, in some measure, is no doubt due to the high feeding that we apply to trees on the Quince, and which the strong growth of trees on the natural stock would resent by growing stronger still, so as to necessitate further root-pruning. It was the working out the idea, or, perhaps, I should say, the determination to obtain fine fruit, that some years ago now opened my eyes to the superiority of the Quince over the Pear stock in attaining that result; and dearly had I to pay for my lessons by the peculiarities, not to say freaks, of many trees. Well do I remember a certain Beurré Diel, full of fruit, full of wood—everything, in fact, to encourage me to feed *ad libitum*, and I did so, but the fruit was obstinate, and did not turn out a bit better than others that had no special attention. But I was rewarded, for, contemporaneously, the same full feeding had been applied to a set of cordon, that had then been planted three years, and oh, such fruit!—as you may guess, Mr. Editor, for with them I took my first prize for Pears at South Kensington, and this too in spite of "Cabby" having allowed my hamper to have a "downer" when turning the corner out of Sloane Street into the Fulham Road. But there are "merits and peculiarities" connected with certain varieties apart from those caused by the stock, such, for instance, as habit of growth, liability to canker, preference for certain positions or aspects, and fertility or free fruiting. As regards habit, I strongly favour those kinds that grow compactly, that need no artificial supports, even in a young state: Marie Louise, Huyshe's Victoria, Comte de Lamy, Winter Nelis, Délices d'Hardenpont, and Glou Morceau, may be cited as belonging to this class, and it is this class of tree that should, when possible, be planted in narrow borders, or on low walls, either as cordons or horizontally trained. I have not specially noted any

varieties that are more liable to canker than others, consequently cannot name them, but I have proved that the evil, if not to be quite cured, can be sufficiently checked, that there need be no apprehension of evil. Our mode of procedure is to cut away the split bark of the cankered spot as soon as perceived, and at planting time to lift the tree, cut the strongest roots, and in a barrow-load or two of fresh loam replant the tree. The varieties that are most benefited by position are very late kinds; the best of them we honour with wall training and protection, and the next best are relegated to the best places, or borders, open to the south and west. As to fertility, I have a notion that when we have attained to the full knowledge and stature of Pear culture, all kinds will be alike fruitful. The Quince stock, double grafting, &c., is all tending in that direction; but meanwhile we must favour those kinds that we know to be good bearers, and the following are a few of them:—Williams' Bon Chrétien, Beurré d'Amanlis, Beurré Superfin, Beurré Hardy, Duchesse d'Angoulême, Doyenné du Comice, Marie Louise, Délices d'Hardenpont, Winter Nelis, Glou Morçeau, Josephine de Malines, and Bergamote d'Esperen. *W. Wildsmith, Heckfield, Hants.*



FIG. 124.—BEURRÉ SUPERFIN, TWELVE YEARS OLD, ON QUINCE, FORMING A NATURAL PYRAMID WITH SCARCELY ANY PRUNING.

## HOME CORRESPONDENCE.

**Fungus in Turf.**—We should be glad of any information—through the columns of the *Gardeners' Chronicle*—you may be able to offer respecting the accompanying fungus. It infests the turf around the bole of each tree of Abies nobilis in a very fine avenue growing there and forming perfect "fairy-rings" of about 2 feet width and distant some 10 feet from the bole, just about to where the extremity of the lower branches reach. The trees are about 25 to 30 feet high, and have been planted some fifteen years, and we are afraid injury may be done by this parasite amongst the roots, although they now appear numerous and healthy. 1. What is the cause? 2. Can anything be done to destroy, without injury to the tree? 3. Would a heavy top-dressing of fresh lime destroy without injury to tree? 4. The name thereof and if edible? *W. Crump, Madresfield Court, Malvern.* [The name of the fungus sent from Madresfield Court is Agaricus elatus of Fries. It is common in Fir plantations, where (like its allies, as A. fastibilis, Fr.) it grows in "fairy-rings." We were the first to publish this species as British, for though extremely common, it had been overlooked. It is not a parasite, as suggested by Mr. Crump, it and all its allies being thoroughly terrestrial. Neither is it edible, it belongs to a dangerous group of Agarics. We think Mr. Crump is entirely wrong in supposing this fungus to be capable of causing injury to coniferous trees. It is far more probable that some other fungus is working the injury (if there is any injury). One of the numerous lot may be present which are known to be able to attack and destroy the Coniferæ; he will possibly find these (if present) on or close to the boles, or on the roots. We do not know what the effect of a top-dressing of lime would be, but as this fungus is not a parasite and does not cause disease, and the Coniferæ do not appear to be at present diseased, it is probable that no good would come from liming. *W. G. S.*]

**Greenhouse Rhododendrons at South Kensington.**—Could any better illustration be afforded of the rapid improvement effected in a group of plants than that seen in the collection of Rhododendrons, of which R. javanicum is the type, shown by Messrs. Veitch & Sons at South Kensington on Tuesday? It was admitted on all hands they had attained to a wonderful degree of perfection. The deepest coloured variety was one named cardinale; a tiny plant, only 4 inches in height, had produced a large truss of deep red flowers. [Was it not a flowering "top" struck? Ed.] Duke of Connaught is of a deeper hue of red, but lacks the lustre seen in cardinale; it is a very desirable variety. What a great beauty is Apollo, which gained a First-class Certificate of Merit; it is a pale bright orange colour, with a dash of buff in it, and thirteen flowers formed a truss—and such flowers!—large, with finely rounded segments. Crown Princess of Germany is buff and bright cerise, the latter in the form of a marginal colour, very distinct and pretty. Queen Victoria is in the same way, but paler, and very pretty also. Memnon, like Apollo, has large flowers and finely formed segments, bright yellow, faintly tinted with the most delicate red; very fine. Princess Frederica is a pale canary-buff, the segments very narrowly edged with pink; very pretty. Duchess of Connaught is of a clear pink colour, a little deeper on the edges, quite distinct, and very pretty. Princess Alexandra is also of a very delicate blush. Maiden's Blush is a charming variety; it is of a delicate blush tint with the slightest edging of pink to the segments. It is no wonder the foregoing gathered such a crowd of admirers about them. *R. D.*

**Symphytum asperrimum.**—I have been much interested in reading the letter of Mr. Mitchell-Henry reproduced in your columns from the *Times* of October 5, on the growth of Caucasian Prickly Comfrey (Symphytum asperrimum). I have been a grower of it for many years, and can endorse all he says as to its value. Since the introduction of the real Caucasian Comfrey, imported by my friend Thomas Christy, of London, and called by him Russian Comfrey, I have mainly grown this variety, and find it superior in value. The last two seasons, during the summer drought, it has been invaluable, my cows keeping in full milk, while others in the pastures failed to give milk. With regard to ensilage, George Fry's, of Chobham, system of sweet ensilage must, I think, be adopted. I have a small silo now filled with it on that principle not yet opened, but it appears to be sweet and promising. All kinds of fowls, partridges, and other game are very fond of roaming over my plantations. They sometimes honeycomb the large lower leaves, but I do not think they damage the crop; indeed, I have a notion they have golden feet, as sheep are said to have. With regard to the last paragraph on the healing properties of this plant I consider the real Caucasian superior to the common English Comfrey, and I have been recently informed that a poultice made of the root is a perfect cure [Palliative. Ed.] for erysipelas. If this is found to be a fact it adds greatly to its value. *Henry Doubleday, Coggleshall.*

**Self-Sown Dahlias.**—Last autumn being very warm and dry our single Dahlias in the herbaceous borders ripened and shed a quantity of seed, and this spring a number of young plants appeared as soon as the mild weather came; some of these were allowed to remain, and have since flowered well. I measured one plant a few days ago, and found it was 2 feet high and 3 feet in diameter; this bore upwards of a hundred flowers and buds at the time. All of the plants were of a more compact and dwarf habit than those raised in the usual way. Considering this is a very cold situation here it seems most probable they might be raised from seed sown outside, in more favourable localities, with advantage. *W. H. Divers, Ketton Hall.*

**International Horticultural Exhibition for 1887.**—It is gratifying to find that after a period of nineteen years the Council of the Royal Horticultural Society has at last taken the initiative in laying before the horticultural public a scheme for holding a large International Show in 1877. It was the Commissioners of the Exhibition of 1851 who laid the scheme before them, according to one of the speakers at the meeting held at South Kensington last Tuesday, and they transmitted their views to their three committees. Now, considering the success of the last International Horticultural Exhibition held in 1866, and the good it did, for horticulture generally, it is the almost universal opinion of those interested in horticulture that another should be held. This being so, the questions arise—when and where, and who is to find the money to carry out the scheme Now, considering the present state of the Horticultural Society, and the way its affairs have been

managed since its commencement, I think it most undesirable, if this proposed exhibition is to be a success, that the Horticultural Society should take the matter into its hands. There is another way of bringing about the desired result, and, judging from past experience, one that will meet with general approval—*i.e.*, to call a meeting of the surviving members of the Committee of the International Horticultural Exhibition of 1866, together with their Secretary, Mr. Thomas Moore, and hear what suggestions they may have to make; then, if the Commissioners like to come to terms as to finding the necessary space and funds, all well and good; if not, let us have an exhibition as before, standing on its own merits, which has been second to none either before or since. Surely in this great horticultural country there is abundance of material and money to make a great and successful show without the want of assistance from any Society or Commissioners. *Exhibitor.* [" Exhibitor " has not favoured us with his name, but we insert his letter as it is very desirable that full discussion should take place, so that the Council of the Society and, we think we may say, the Commissioners, should be able to glean a fair idea of the feeling of the horticultural world before the general meeting is called. ED.]

**Eucharis Mite.**—In reading Mr. Douglas' notes on Mote Park, p. 458, October 10, and of the fine plants of Eucharis, noting Mr. Douglas' conversation with Mr. Davies on the recent losses in some gardens, he says we seemed to agree on the point that these losses were probably due to the management of the plants, and adding the opinion, "as if he concurred," of another successful grower, that the disease was only a creation of the brain of some cultivators. I would remind Mr. Douglas this is rather an uncharitable opinion to assert, and sounds uncomplimentary to those whose plants are unfortunately attacked by the mite, and it is a well-known fact that there are many such, and in some of our largest and noblest gardens, under the care of well-known and formerly successful growers, whose brains are as free—not their plants—from the creation of disease as Mr. Douglas', or the successful grower whose opinion he quotes—men who still grow well other more difficult plants, but fail to keep their Eucharis good under the ravages of the mite. At the present moment I have here just such a plant as Mr. Douglas names, flowering for the third time this year, but I have many others in bad condition through being attacked by the mite eating its way to the very heart of the finest and best bulbs, and the strongest and most robust roots, causing the foliage firstly to have a yellow tinge all round the edge, which gradually extends over the whole leaf, as the roots are eaten away by the mite. It is the mite that causes the disease, not the disease the mite, for it is on the finest and best bulbs and roots they feast, not the decayed ones, with me. I have the same or a similar mite on the Scilla sibirica, which has destroyed the bulbs by thousands, clearing off in some cases whole borders, in others long patches: a finer or better lot of this Scilla until this last season was not readily to be found, and was the admiration of all who saw them. *Thos. Keetley, Darley Abbey.* [It may now be regarded as settled that the mite is the culprit, not the mere scavenger. ED.]

**Thuia Lobbii (gigantea ?).**—There is a Thuia Lobbii at Penjerrick, a lovely wild garden near Falmouth, quite the height mentioned in connection with the specimen of Cryptomeria Lobbii. The climate of Portugal would be unsuited for the Thuia. The best specimen in England of the Cryptomeria is at Dropmore, where the distinct habit of the tree can be well studied. The Cacti at Montserrat are not so fine, perhaps, as in some other gardens in Portugal, particularly those on the seaward slope of the mountains near Amarante. Mr. Crawford tells of a C. peruvianus there that reaches above the eaves of a rather lofty two-storeyed house, and girths near the ground 19 inches. *C. A. M. C.*

**Tritomas.**—Amongst these will certainly be found several of the most conspicuous ornaments of our autumn garden. T. Saundersii, with its dwarf habit, early blooming, and distinct flower-tubes, deep red, tipped with yellow, is well worthy of attention. Another dwarf form is T. Macowani, the flower-scapes of which grow little more than 2 feet in height and the flower-tubes are different in colour to any other, being of a pale saffron tint and very lasting. The giant T. nobilis is also well deserving of cultivation, the noble flower-stems, fully 7 feet in height, standing well out from the shrubs with which they are associated. It is a very vigorous form, having been known to grow as much as 4 inches in twenty-four hours. All the Tritomas do best in warm sunny borders, but where they are amply supplied with moisture during the growing season. *A. D. W.*

## NOTES FROM THE PEAR-GROWING DISTRICTS.

(*Continued from p. 533.*)

IRELAND (SOUTH.)—This has been a bad year for wall Pears here in the south of Ireland. I send you names of sorts mostly in the gardens. Some may have done better than others, they vary so very much in the different aspects and soils :—

| | |
|---|---|
| Duchesse d'Angoulême Williams') | Louise Bonne of Jersey, in every garden |
| Beurré d'Amanlis | Doyenné du Comice |
| Bon Chrétien | Van Mons |
| Josephine de Malines | Pitmaston Duchess |
| Marie Louise, in many gardens | Bishop's Thumb, in many gardens |
| Beurré Capiaumont | Ordinary Sugar Pear |
| ,, Hardy | |

*W. B. Hartland.*

LONDON (SOUTH-WEST DISTRICT.)—The following list, furnished by Messrs. J. Veitch & Sons, of Pears includes those which do best on the Pear stock as pyramids or standards :—

| | |
|---|---|
| Beurré Bosc | Monarch (Knight's) |
| Citron des Carmes | Passe Colmar |
| Comte de Lamy | Seckle |
| Doyenné d'Été | Souvenir du Congrès |
| Gansel's Bergamot | Thompson's |
| Gratioli Jersey | Uvedale's St. Germain |
| Hacon's Incomparable | Van Mons' Leon le Clerc |
| Huyshe's Prince of Wales | Verulam |
| Madame Treyve | Zephirine Grégoire |
| Marie Louise | |

Those kinds that do equally well on Pear or Quince stock as pyramids are :—

| | |
|---|---|
| Bergamotte d'Esperen | Duchesse d'Angoulême |
| Beurré d'Amanlis | Durandeau |
| ,, d'Angou | Fondante d'Automne |
| ,, d'Arenberg | ,, de Cuenne |
| ,, de l'Assomption | General Todtleben |
| ,, Bachelier | Glou Morgeau |
| ,, Diel | Jargonelle |
| ,, Goffard | Louise Bonne de Jersey |
| ,, Hardy | Nouvelle Fulvie |
| ,, Superfin | Olivier des Serres |
| Catillac | Pitmaston Duchesse |
| Clapp's Favourite | Vicar of Winkfield |
| Conseiller de la Cour | Williams' Bon Chrétien |
| Doyenne d'Alençon | Winter Nelis |
| ,, du Comice | |

The varieties here named are most successful when grown against a wall :—Beurré Rance, Brown Beurré, Easter Beurré, Josephine de Malines, Marie Benoist, Passe Crassane; and on the Quince stock, Beurré Sterckmans.

NORTHAMPTONSHIRE.—Our garden here may be described as a sandy loam, from 3 to 3½ feet deep, resting on shale, so-called in this locality, which is simply a limestone. The garden is enclosed by a ditch from 10 to 12 feet deep, so that in that important matter of draining it is all to be wished for. The year 1885 will be remembered here as the year for Pears, but the heavy crop and the dry season combined have left their mark in the matter of size, but for quality it has doubtless improved. We grow numbers of varieties here. The following for walls, both south and west aspect, we find suit this locality best :—

| | |
|---|---|
| Thompson's | Beurré Clairgeau |
| Louise Bonne of Jersey | ,, d'Amanlis |
| Souvenir du Congrès | ,, d'Arenberg |
| Passe Colmar | ,, Easter |
| Marie Louise | ,, Hardy |
| Glou Morgeau | ,, Sterckmans |
| Fondante d'Automne | ,, Diel |
| Brookworth Park | ,, d'Esperen |
| British Queen | Bergamotte d'Esperen |
| Bon Chrétien (Williams') | Pitmaston Duchess |
| Beurré de Jonghe | Napoleon |
| ,, Rance | Gansel's Bergamot |

Our best dessert Pears are grown here on south walls, on the Quince stock, as single cordons; they bear profusely, and give good results almost yearly. We simply tie to each stem a quantity of the common Bracken lightly, and the protection is complete from spring frosts. On another south wall, where the same varieties are grown on the Pear stock, the present trees have been planted six years, and have this year also done well. These trees I got from the nursery as feathered pyramids. Planted at 5½ feet apart we train the young shoots downwards, and they do well with us; the turning of the Pear shoots downwards checks the sap at the base, and they make fruit-spurs instead of gross shoots; to fill walls quickly doubtless this is the system. For our earliest Pears we like Williams' Bon Chrétien, Beurré d'Amanlis; second, Thompson's, and Fondante d'Automne—two of the highest and best flavoured Pears of my knowledge; third, Marie Louise and Napoleon; and for late use Bergamote d'Esperen and Glou Morçeau. The eight varieties are the cream of our collection. I may here add that grand late Pear Beurré Rance in the sunny south does not become melting only in very fine seasons. *R. Gilbert, Burghley.*

SUSSEX.—The undermentioned list of varieties of the Pear cultivated in Sussex and other south-coast districts enjoying a similar climate and soil, has been supplied us by Messrs. Cheal & Sons, nurserymen of Crawley in that county. The suitability of the climate for the successful growth of the Pear is made evident by the extended list, which appears to contain almost every variety of acknowledged worth, as well as some kinds that are cultivated in great quantities for the market and which have no other qualifications beyond those of undoubted abundant cropping. The first list is of those suitable for this district on the Pear stock :—

| | |
|---|---|
| Bergamot, Autumn | Fertility |
| Beurré Bosc | Hessle |
| ,, Clairgeau | Jersey Gratioli |
| ,, de Capiaumont | Louise Bonne of Jersey |
| ,, Diel | Marie Louise |
| ,, Hardy | Souvenir du Congrès |
| ,, Superfin | Swan's Egg |
| Bon Chrétien (Williams') | Windsor |
| Comte de Lamy | |

PYRAMID PEARS.

| | |
|---|---|
| Bergamotte d'Esperen—on Quince and Pear | Conseiller de la Cour—Quince and Pear |
| Beurré d'Anjou, ditto | Doyenné du Comice—Quince |
| ,, Bachelier, ditto | Duchesse d'Angoulême—Quince and Pear. |
| ,, Clergeau—Pear and Quince | Fertility—Quince |
| ,, de Capiaumont, ditto | Fondante d'Automne, ditto |
| ,, Hardy—Quince | General Todtleben, ditto |
| ,, Superfin, ditto | Louise Bonne of Jersey, ditto |
| Bon Chrétien (Williams'), ditto | Marie Louise d'Uccle, ditto |
| Brookworth Park—Pear | Olivier des Serres—Pear |
| Clapp's Favourite—Quince | Souvenir de Congrès ditto |
| Comte de Lamy, ditto | Thompson's—Quince. |

ESPALIER PEARS ON PEAR STOCK.

| | |
|---|---|
| Beurré Bachelier | Duchesse d'Angoulême |
| ,, Bosc | Glou Morçeau |
| ,, d'Amanlis | Jargonelle |
| ,, Diel | Josephine de Malines |
| ,, Hardy | Marie Louise |
| ,, Rance | Olivier des Serres |
| ,, Superfin | Pitmaston Duchess |
| Brookworth Park | Souvenir du Congrès |
| Chaumontel | Winter Nelis |
| Doyenne Boussoch | |

The following is a list of cordon Pears suitable for this district, all on Quince stock, some of them being double worked :—

| | |
|---|---|
| Bergamotte d'Esperen | Doyenné Boussoch |
| ,, d'Anjou | Fertility |
| ,, Bachelier | Fondante d'Automne |
| ,, d'Amanlis | Josephine de Malines |
| ,, Diel | Louise Bonne of Jersey |
| ,, Hardy | Marie Louise d'Uccle |
| ,, Superfin | Pitmaston Duchess |
| Bon Chrétien Williams' | Thompson's |
| Clapp's Favourite | General Todtleben |
| Conseiller de la Cour | Duchesse d'Angoulême |

# Reports of Societies.

## NATIONAL CHRYSANTHEMUM.

FLORAL COMMITTEE.—The first meeting of this body took place at the Royal Aquarium, on Wednesday, the 4th inst., Mr. E. Saunderson, President, in the chair; present also Messrs. R. Ballantine, Vice-President; W. Holmes, Hon. Secretary; H. Cannell, R. Dean, G. Gordon, G. Stevens, N. Davis, C. Gibson, T. Bevan, J. Murdin, J. W. Springbett, J. Townsend, E. Berry, M. Butcher, E. T. Kemp, and W. Swift.

The committee having discussed and adopted certain rules governing its mode of action, proceeded to make the following awards :—To Mr. W. E. Boyce, Yerberg Road, Upper Holloway, for pompon Chrysanthemum Pomponium, a charming variety, having medium size well formed flowers of a yellow ground shaded with orange-brown; and to Japanese Chrysanthemum Mandarin, having cream and pink thread-like petals, large and full flowers, a very useful variety because flowering in September. Ten very fine blooms of this were also shown by Mr. N. Davis, Lilford Road Nurseries, Camberwell, who was also awarded a First-class Certificate of Merit. The same award was made to Mr. Davis, Japanese Chrysanthemum Lachme, a fine reflexed variety, the colour cinnamon-crimson, the reverse orange, and so forming an orange centre. Hybrid pompon Mrs. Culingford, a very pretty and free flowering white variety was Highly Commended. Mr. Davis also had Simon Delaux, cerise-crimson, with buff reverse to the petals. Fleur d'Été, bright pinkish-lilac, a small but very pretty reflexed Japanese variety; Rose Celeste,

pale pink; Eté Fleur, an early flowering variety, colour magenta, with white centre; Isidore Feral, gold and purplish-magenta, reflexed, very pretty; and Margot, a lovely pink flower, certificated last year. A First-class Certificate of Merit was awarded to Mr. Forbes, The Gardens, Dover House, Roehampton, for Japanese Brise du Matin, deep bright pink, with broad reflexed petals, extra fine. L'Isle des Plaisirs, orange and reddish-cinnamon; the reverse golden-buff, was Commended as a good October variety. This was also finely shown by Messrs. J. Laing & Co., Stanstead Park, Forest Hill. Mr. Forbes also had Mons. Moussillac, maroon-crimson, the reverse of petals buff; a full and fine flower, and a good early variety.

First-class Certificates of Merit were awarded to Mr. H. Cannell, nurseryman, Swanley, for pompon Chrysanthemum Fiberta, a very pretty yellow variety, early, and very free; for double Begonia Léon de St. Jean, with very large and full rich bright rosy-crimson flowers; and to the following new double Ivy-leaved Pelargoniums:—Hoffgartner Eichler, bright scarlet, very double, flowers of fine form; Madame Thibaut, rich deep pink, very double, and extra fine; and Furstin Josephine von Hohenzollern, rich carmine, large, and double. Primula sinensis fimbriata King of Purples, a Fern-leaved variety, was Commended for its deep hue of purple.

A First-class Certificate of Merit was awarded to Mr. Wright, Temple Gardens, for Belle Navarraise, a large, full, and handsomely fimbriated hybrid pompon, extra fine.

Mr. R. Ballantine had Mons. Delaux, a fine Japanese variety, crimson, flushed with orange and purple, large and full: Commended. Mr. T. S. Ware had Roi de Précoces, a deep chestnut-crimson flowered variety, and a very useful decorative Chrysanthemum; also Bouquet Estival, lilac-purple, a useful early-flowering variety. Mr. H. Cannell had a basket of Begonia Earl of Bessborough, a fine apricot-coloured single variety; blooms of Begonias, and cut blooms of Pelargoniums. Mr. Owen, florist, Maidenhead, had a collection of cut blooms of Chrysanthemums; and Mr. Boyes the same. Altogether it was a very successful first meeting.

## THE PEAR CONGRESS, CHISWICK.

The Apple Congress, which was held at Chiswick in 1883, was an undoubted success when viewed in some of its aspects. Its effects as regards the limitation of sorts to soils and localities will be felt in years to come when the lessons it taught are assimilated by the horticultural mind in general, so that we can but rejoice at the immense numbers of Pears shown on this occasion. That it will lead to the same degree of elimination of kinds, as happened in the case of Apples, we feel assured, if we may judge from the conspicuous merits of some Pears in all varieties of soil, locality, and freedom of bearing. Much useful information is conveyed by the tickets placed on each dish of fruit when it is stated what kind of stock was employed, how grown—as pyramid, cordon, espalier, bush or wall trained—if free bearing or otherwise, and the habit of growth. All exhibitors did not avail themselves of the cards issued by the Royal Horticultural Society, so that the information is not equally attainable as to all parts of the country, but still enough will be found that will render the future report of the Society of great value to planters, whether in private or market gardens. Taking the fruit generally as to appearance the finest coloured and the largest came from Jersey and France, followed next by those from Mr. Haycock, gr., Barham Court, Maidstone; Mr. Breeze, Petworth; Messrs. Veitch & Sons, Chelsea; Messrs. W. Paul & Son, Waltham Cross; Paul & Son, Cheshunt; Messrs. G. Bunyard & Co., Maidstone; T. Bunyard, Ashford; and many private and other growers. Some excellent samples of fruit came from Scotland, but our northern counties were conspicuous by their absence, at least in any quantity. Ireland sent only one lot, and Wales but five. Taking the fruit according to the Society's method of grouping, we have

### Group I.—Southern Counties.

*Sussex.*—In this county Mr. Sydney Ford heads the list with seventy-two kinds, including beautiful specimens of Beurré Diel, Beurré Clairgeau, Calebasse Grosse, Bellissime d'Hiver, Pitmaston Duchess, Durandeau, Easter Beurré, Thompson's, Beurré Superfin, General Todtleben, Glou Morçeau, &c. Messrs. Cheal & Sons, Crawley, came next, with sixty kinds. We noticed in this good collection Duc de Morny, similar in form and flavour to Marie Louise, but late; Beurré d'Anjou, a fine Pear; Doyenné Boussoch, Chaumontel, fine samples, from a cordon; Easter Beurré, Beurré Diel, Beurré Hardy, Beurré d'Aremberg, Grosse Calebasse, fine in colour and quality. This large collection was gathered mainly from cordons, free standing, or on walls, and from bushes and pyramids. Fine development was conspicuous in the generality of the sorts. Mr. Breeze, Petworth, with fifty varieties, and Mr. Rust, Eridge Castle, with thirty-six, sent the next largest lots. Three fine samples of culinary Pears were seen in the former, viz., Bellissime d'Hiver, Catillac, Belle d'Angevine and Verulam, Marie Benoist, Durandeau, President Mass, Beurré Diel, the hardy Marie Louise d'Uccle, Easter Beurré very fine, Passe Crassane and Monarch. The fruit here was the produce of upright cordons on walls, of espaliers and pyramids.

The lesser collection of Mr. Rust had the shy cropping Gansel's Bergamot, Triomphe de Jodoigne, Marie Louise, Beurré Hardy, Beurré Clairgeau, the pretty Forelle, Beurré Bosc, Beurré Diel, Doyenné d'Alençon, Dunmore, Thompson's, and Prince Consort. The fruit was excellent in most points, and but few small varieties were shown.

The county of *Surrey* contributed heavily, Mr. Burnett, The Deepdene, Dorking, sending fifty-five dishes, of which the following were conspicuous:—Princess (Rivers), a showy fruit; Winter Crassane, Pitmaston Duchess, Van Mons, Joséphine de Malines, Prince of Wales (Huyshe's), and the piquant, seldom seen Eyewood. The fruit in all cases were clear in the rind, and large for the sort.

Mr. Forbes, gr., Dover House, Roehampton, had thirty-three dishes, all evidently the pick of his kinds. Particularly good were Beurré Rance, Beurré Bosc, Beurré Bachelier, Beurré Clairgeau, Glou Morçeau, a variety which does well on the light soils round London on either Pear or Quince stock; Marie Louise, Winter Nelis, one of the best of late sorts; Pitmaston Duchess, and Duchesse d'Angoulême.

Some fine fruit came from Mr. Evans, gr., Lythe Hill, Haslemere, all of which was clean and generally well done, although some kinds were undersized, the soil or elevation not suiting them. General Todtleben, Beurré Hardy, Maréchal de la Cour, Van Mons, Madame Treyve, Beurré Clairgeau, were some of the best.

Mr. W. Roupell, Roupell Park, had twenty-one dishes, and considering the ungenial nature of his soil, they were very fair samples; Marie Louise, from tree on the Pear stock, and General Todtleben, from the same stock, were very nicely grown fruits.

Mr. Cummings, gr. to H. A. Smee, Esq., The Grange, Carshalton, had the largest collection of any one showing from Surrey, staging 115 dishes. His finest were Olivier des Serres, a capital late kind; Duchesse d'Orleans, good quality, but rare—very beautiful examples; Beurré Clairgeau, one dish being ripe from a tree in a sunny spot, the other from a shaded tree a fortnight or more later, not being yet ripe; Doyenné du Comice, Pius IX., very bright Forelle, Bezi Mai. This collection was grown chiefly on bushes and pyramids, and the examples seen were highly coloured, and of a fair size—useful dessert fruit.

*Middlesex* made a brave show, the large nurseries contributing largely, and the Royal Horticultural Society topping the list with 200 kinds; next Messrs. J. Veitch & Sons, Chelsea, with 120 kinds; Messrs. C. Lee & Son, Hammersmith, eighty varieties; and private growers, as Mr. J. Roberts, Gunnersbury Park, fifty; Mr. J. Hudson, Gunnersbury House, thirty; Mr. J. Woodbridge, Sion House, thirty-six; Mr. G. Thompson, twenty-four; Mr. E. Chadwick, twenty-four; and several others with smaller collections. The fruits from Messrs. J. Veitch & Sons were chiefly produced on bushes and young pyramids in their Fulham nursery, being generally well finished and clear of rind. Bassiner, Hacon's Incomparable, Monarch, Eyewood, Marie Guise, Marie Louise, Monsieur le Curé, Chancellor (an October Pear, of good quality, and large), Beurré Baltet frères, Chaumontel, Passe Colmar, Beurré Bachelier, Anna Nelis, were some of the finest specimens.

The collection from the Royal Horticultural Society's gardens consisted of most of the kinds worth growing, and many that are discarded in private gardens, but which are cultivated there for comparison, or other purposes. The finer samples were General Todtleben, Huyshe's Bergamot, Lieutenant Poitevin, Beurré de Jonghe, Grosse Calebasse, Forme de Bergamot, Duchesse d'Angoulême, Gansel's Bergamotte, Musette de Nancy, Bezi du Louvaine, Souvenir du Congrès, and Beurré Diel; Maréchal Dillen, from the Quince, a good October Pear, bearing well; Beurré Gris d'Hiver, late, from Quince; Suffolk Thorn, from Pear stock, a pyramid, cropping well; capital Beurré Bosc grown on the Pear, also bearing well. Many varieties were small, but were clear in the skin.

Messrs. C. Lee & Sons' consisted of well grown sorts, and much information was afforded by the tickets. Pitmaston Duchess from the Pear stock was first-class; Bassiner, also from the Pear, small but a very late keeper; other fine Pears from Pear stocks were Beurré Rance, Napoleon, very free bearing; Grosse Calebasse, Beurré Bachelier and Beurré Diel. Gansel's is a moderate bearer on that stock; Easter Beurré, Winter Nelis. The collection contained under its 200 kinds the cream of the Pears, and was of much value in showing those which do the best in certain soils on the Pear, the bulk being mainly the produce of kinds on that stock.

Mr. J. Roberts' fifty kinds were of the best quality and finish, and showed high cultivation, as did also those of Mr. Woodbridge—Brougham and Belle Julie and the Winter Windsor being most noticeable sorts in the latter collection.

Mr. J. Hudson's fruits, coming as they do from the same locality, generally resembled the two last-named collections, both in variety and appearance. His stewing Pears Bellisime d'Hiver and Catilac, and the dessert kinds Beurré Rance, Glou Morçeau, and General Todtleben were good examples.

*Kent* was represented by Messrs. G. Bunyard & Co. with 100 varieties; Mr. T. Bunyard with seventy; Mr. Thomas, Sittingbourne, seventy; Mr. C. Haycock, Barham Court, seventy-six.

In the first-named collection were Duchesse de Bordeaux, very prolific, on Quince stocks; Colmar d'Automne, also a good bearer on the same; Eyewood, the same; Chaumontel, shy on the Quince as on the Pear. Heavy croppers on the Quince are Marie Louise d'Uccle Glou Morçeau, Beurré Clairgeau, General Todtleben, Fondante Couronne, Doyenné du Comice; and equally good on the Pear are Pitmaston Duchess, Jargonelle, Durandeau—all of these kinds were observed in perfection, so grown, in this collection. Much more information of a similar kind was likewise given. The prettily marbled Japan Pear, Daimo, was shown by them.

Mr. Haycock's fruit were the finest English produce shown, and gained the highest encomiums from the many judges of good fruit present. Most of it was larger than seen in other lots, and was without blemish of any kind. It would serve little purpose to enumerate the names, and we will, therefore, say that it composed the best sorts grown in the southern parts of the country.

Closely following on the above-named was that of Mr Thomas, of Sittingbourne, consisting of popular, good, and presentable kinds, especially fine in colour being Louise Bonne of Jersey, Cuisse Madame, and Beurré Steckmans.

Mr. T. Bunyard had fifty-two varieties of considerable excellence, as had likewise Mr. R. Smith, Yalding, Maidstone (eighteen varieties). Marie Louise, Chaumontel, and winter Nelis were of especial quality.

*Hampshire.*—This county did not put in a great lot of fruit, considering its size and suitability, and the warmth of its sheltered valleys, but Mr. Wildsmith worthily upheld its capabilities with his collection of ninety varieties. Heckfield has been long famous for its fruits, and where they are grown in almost all methods, but bush, pyramids, and wall cordons seemed to be most productive of fine samples. Some of the finest were Huyshe's Victoria, from Quince stock—a pyramid; Maréchal de la Cour, the same stock—a bush; Urbaniste, a cordon on the Quince; Louise Bonne, the same; Durandeau, a bush on the Quince; Calebasse, Duchesse d'Angoulême, Poir d'Ananas, Bergamot Heimberg, all from either bush or pyramid on Quince stocks; Directeur Alphand, Gros Trouve, Fondante Van Mons were from cordons on Quince growing on a wall; Chaumontel, Maréchal Dillen, Seckle, and Pitmaston Duchess were from wall trained trees on Pear stocks.

*Berks.*—Mr. C. Ross, of Welford Park Gardens, showed twenty-seven excellent big varieties, as well as good flavoured small kinds.

*Wilts.*—Mr. Ward, Longford Castle Gardens, brought forty dishes, consisting of the most appreciated dessert kinds, amongst them being excellent Glou Morçeau, Van Mons, Pitmaston Duchess, Doyenné du Comice, and Monsieur le Curé. Mr. Miller, gr., Rood Ashton, had sixty dishes—Gilogil, Emile d'Heyst, and Monarch being very fine fruits.

### Group III.

*Hertfordshire,*—The next largest contributors of Pears are found in this group, in which Messrs. W. Paul & Sons, Waltham Cross, figure with 150 kinds; Messrs. Paul & Sons, Cheshunt, with eighty; Messrs. T. F. Rivers & Sons with an equal number, and several private gardens send considerable numbers. In the first named lot are good fruits of Triomphe de Jodoigne from both Pear and Quince stocks, Easter Beurré, fine, from Pear stock, as are Beurré Hardy, Conseiller de la Cour, and Beurré Diel, the last named being still better from the Quince. Gilogil bears best on the Quince, the sample shown being very fine. On Quince General Todtleben is a great bearer, and almost as good on the Pear. If all the fruits in this collection were not first-class, yet the information was of a useful kind, and well worth preserving as being the result of many years' experience with a large number of varieties. In the Cheshunt collection of Messrs. Paul & Son were many good examples. Some of the Pears from this district showed signs of fungus in the rind that gives such a crippled look to the fruit. Mr. Mundell, gr., Moor Park, had sixty, several fine dishes being noticed, as Doyenné Boussoch, Beurré Bosc, Beurré Easter, Beurré Clairgeau, Swan's Egg, Marie Louise d'Uccle, Hacon's, and Uvedale's St. Germains. Messrs. F. T. Rivers & Sons, Sawbridgeworth, had, as usual, an interesting collection of the best varieties, and of rarer ones were Zoe, Beurré Dumont, Beurré Langelier, Magnate, and the not particularly good kind, Jean de Witte.

*Bucks.*—Mr. Smith, gr., Mentmore, had fifty dishes, remarkable as being mainly from bushes on the Quince not more than three years planted, large examples being

observed of General Todtleben, Marie Louise, America, Colmar d'Aremberg, Jules Airoles, and others. Mr. Charles Turner, Slough, contributed a hundred dishes in as many choice varieties, noticeable among which, as sorts rarely seen, were Frogmore Russet, Groom's Princess Royal, Beurré Goubault, Beurré Van Geert, Beurré Baltet frères, and a small late kind, Enfant Prodiguè.

'In addition to the conservatory,'two large tents were also occupied, and in these the more remote country contributions were displayed. Even here, however, owing to the large number of collections sent for staging by the committee, the work of placing was far from being complete at the time of our visit, hence the present report is necessarily incomplete.

*Dorsetshire*, as might be expected from a county so well placed, gave capital samples, although represented by but one collection only, that staged by Mr. W. J. Pragnall, gr. to J. D. W. Digby, Esq.,'Sherborne Castle, who had 100 sorts, and all thoroughly representative of various forms of garden culture. Not a few of the samples were from free-growing standard trees. Fitmaston Duchess was very fine from that source, and from a wall was smaller, but cleaner and handsomer. Beurré Clairgeau, Louise Bonne, and Forelle gave very rich colour, as also did handsome medium-sized kind, Du Congrès Pomologique, from a free pyramid ; Beurré de Capiaumont, and Comte de Lamy were also richly coloured, whilst of fine samples were Bellissime d'Hiver, Beurré Bachelier, Bishop's Thumb, Duchesse d'Angoulême Huyshe's Bergamot, and Doyenné du Comice.

*Devonshire* was favoured by a capital representative collection of 120 kinds from R. Veitch & Sons, of Exeter, who had Louise Bonne, Beurré Superfin, Doyenné Boussoch, Jersey Gratioli, in fine colour ; Catillac, Glou Morceau, Beurré Clairgeau, and Bellissime d'Hiver, very fine. Mr. Garland, of Killerton Gardens, had about forty kinds, but many of the samples were poor and much spotted.

*Gloucester* was represented by some fifty kinds, rather medium-sized samples, including the black Worcester stewing Pear, Beurré d'Amanlis, and Conseiller de la Cour. This lot was not named fully, but appeared to belong to Mr. Shingles, of Tortworth Court Gardens.

*Lincolnshire* was well represented by a fine collection of some fifty-six kinds, sent from Belvoir Castle by Mr. Ingram. Most of the samples were excellent, and included good Doyenné Boussoch, Beurré Superfin, Beurré Rance, General Todtleben, Glou Morceau, Madame Millet, Urbaniste, and Beurré d'Anjou, all from wall trees.

From *Cheshire* came a very fine and interesting collection, sent by Messrs. F. & A. Dickson & Son, of Chester, gathered chiefly from nursery pyramid trees. Souvenir du Congrès, Marie Louise d'Uccle, Beurré Diel, Easter Beurré, Louise Bonne, Beurré Hardy, &c., were capital. Also came a collection from James Dickson & Sons, also of Chester, the samples fair but calling for no special comment.

*Worcester* was represented by a very fine collection indeed from R. Smith & Son's well-known fruit nursery, the samples fine, clean, and the collection included many first-class kinds ; very handsome Josephine de Malines, Beurré Hardy, Duchesse d'Angoulême, Pitmaston Duchess, huge samples of Van Mons' Léon le Clerc, Beurré Bachelier, Gansel's Bergamot, Beurré Superfin, and Doyenné d'Alençon. This collection comprised some eighty varieties.

From *Nottingham* came a good representative collection of 170 kinds, sent by Messrs. J. & R. Pearson, of Chilwell. Some of the samples were probably grown under glass, as such kinds as Doyenné Boussoch, Beurré Superfin, Conseiller de la Cour, and others were exceptionally clean and bright. Separately from the Gloucester collections was a large one from Messrs. J. Jefferies & Co., Cirencester, which included some superb Marie Louise, though somewhat more russety than usual.

*Essex* found its reputation well supported by Messrs. Saltmarsh, of Chelmsford, who put up some 150 kinds. Here Beurré Defais, Marie Louise d'Uccle, Doyenné Boussoch, and Durandeau showed fine colour, whilst Grosse Calebasse, Beurré Hardy, Beurré Diel, Beurré Clairgeau, Glou Morçeau, and Beaurré Langelier had the call for size.

From *Norfolk* came a collection of forty kinds only, from Mr. C. Browne, Meopham ; a variety named Beurré Montgeron was very noticeable for its great beauty and rich colour.

*Bedford* found a useful aid in Mr. Laxton, of Girtford, who collected from various gardens a good representative collection of sixty dishes, but the samples were not of the highest quality.

From *Huntingdon* came a collection sent by Mr. Hardy, Orton Hall Gardens, Peterborough, but many of the fruits were not in good condition. In the second tent were other Worcester collections, not all of which were ready when this report was prepared, but a good one of some eighty or ninety kinds from Mr. W. Coleman, Eastnor Castle Gardens, merits more extended notice, as it included many fine samples. He also sent a number of small perry Pears of the district. Mr. Crump, Madresfield Court Gardens, had about forty kinds, mostly very fine samples of sorts previously named, and there were other collections from the same district. A very fine and interesting collection of about sixty-six kinds from Mr. Denning, gr. to the Earl of Chesterfield, Holme Lacey, Herefordshire, whose kinds were chiefly grown on Quince cordons. Here were grand samples of Doyenné Boussoch, Hacon's Incomparable, Princess, very rich colour ; Beurré Hardy, Madame Treyve, Louise Bonne, and Pitmaston Duchess.

Going northwards to *Lancashire* were some two or three collections ; one of them, unnamed, included the handsome stewind Pear Verulam. There was also a fair collection from Mr. Brocklebank, Liverpool, of thirty kinds.

*South Wales* was fairly represented by collections from Mr. W. Powell, Taibach, Glamorgan, and Mr. Muir, Margam Park. The former grower was a farmer. Mr. Muir's were fairly good samples, and very clean. Also a collection of thirty kinds from Baron de Rutzen, Haverfordwest.

The *North Wales* group included a large collection of some sixty kinds from Wynnstay Castle Gardens, Ruabon ; sixty kinds also from Mr. Coomber, Hendre Park Gardens, Monmouth : and a small collection from Oswestry.

From *Ireland* came at least one collection, sent by Mr. Unthank, Camperville, Limerick, who had twenty kinds, some admirable samples of ordinary sorts.

*Scotland* made a better figure, although the moderate size of the samples showed that so far north is not favourable to the production of good samples. There appeared to be some six or eight collections from North of the Tweed, including an excellent one from Alliston Gardens, St. Boswell's, sent by Mr. Dalrymple, of forty-eight kinds ; also one of about fifty kinds, from Mr. Dunn, of Dalkeith Palace Gardens ; and sixteen kinds from Newbattle Abbey. Messrs. Ormiston & Co., Renwick, Melrose, had a large collection ; and an interesting one was sent by Dr. Robertson, of Errol.

Mr. J. Austin, gr., Witley Court, showed an Apple, Peasgood's Nonsuch, of the weight of 23 oz. It had lost an ounce since being gathered.

No doubt, when the whole of the collections are fully arranged and placed according to geographical position, the show will be not only singularly complete and representative, but full of interest to all lovers of Pears.

CHANNEL ISLANDS.

A very fine collection of fruits came from Jersey, the productions of the nursery of Mr. Le Cornu, St. Helier's. Most of them were grown on the Quince stock, and for size and general appearance exceeded any shown by English growers—a fact which is to be ascribed to the finer climate of the islands.

FRANCE.

M. F. Jamin, Bourg-la-Reine, exhibited a collection of large fruits, consisting mostly of varieties previously noted in English collections. Sorts not met with in those were Léon le Clerc d'Hiver, a showy, long Pear, with much bright colour on the sunny side—it was from a tree on the Quince ; Olivier des Serres was double the size of the same kind in our collections ; Fondante de Panesel, also from the Quince, of great fertility and moderate growth ; Doyenné du Comice d'Angers, a handsome fruit, but shy ; Louis Cappe, from the Quince, a good bearer and moderate grower ; Beurré Luizet, a splendid long fruit, good bearer on the Quince ; and Beurré Bretonneau, also good on the same stock.

M. André Leroy, Angers, had 120 dishes, but few of them approached the size of the first-named collection, yet there were many kinds new to English gardeners.

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The following are the groups and the number of dishes sent by the exhibitors :—

GROUP I.

*Berks.*—Mr. Howe, 24 ; Mr. C. Ross, 27 ; Mr. Allen, 18 ; Mr. Laurence, 4.

*Hants.*—Rev. J. L. Carrick, 12 ; Mr. Wildsmith, 90.

*Kent.*—Mr. Saunders, 36 ; Mr. C. Davies, 50 ; Mr. T. Bunyard, 70 ; Messrs. Bunyard & Co., 100 ; Mr. R. Smith, 18 ; Mr. W. Rogers, 26 ; Mr. W. H. Divers, 24 ; Mr. W. Herrington, 20 ; Mr. W. Selwyn, 32 ; Mr. A. Thomas, 70 ; and Mr. C. Haycock, 76.

*Middlesex.*—Mr. A. Wright, 24 ; Mr. J. Coombes, 30 ; Mr. J. Hudson, 30 ; Mr. W. H. Tilly, 6 ; Mr. R. L. Cosh, 6 ; Mr. W. Wood, 13 ; Messrs. C. Lee & Son, 80 ; Royal Horticultural Society, 200 ; Mr. Woodbridge, 36 ; Mr. Denk, 14 ; Mr. G. Thompson, 24 ; Rev. H. Taylor, 6 ; Mr. E. Chadwick, 40 ; Messrs. J. Veitch & Sons, 120 ; Mr. J. Roberts, 50 ; Mr. J. Graham, 1 ; Mr. H. J. Draper, 4 ; Mr. H. W. Ward, 6.

*Surrey.*—Mr. B. Greaves, 20 ; Mr. Taylor, 40 ; Mr. G. W. Cummins, 110 ; Mr. Sheppard, 65 ; Mr. Leech, 30 ; Mr. R. Lloyd, 40 ; Mr. Burnett, 55 ; Mr. J. Burrell, 24 ; Mr. H. Matthews, 30 ; Mr. W. Roupell, 20 ; Mr. W. Stuart, 20 ; Mr. D. East, 11 ; Mr. A. Evans, 24 ; Mr. J. Boland, 47 ; Messrs. Armfield & Son, 4 ; Mr. Forbes, 33.

*Sussex.*—Mr. J. Anderson, 4 ; Mr. W. J. Gibbons, 12 ; Mr. S. Ford, 72 ; Mr. J. Rust, 36 ; Mr. Burberry, 30 ; Messrs. Cheal & Sons, 60 ; Mr. J. Breeze, 50.

*Wilts.*—Mr. Miller, 60 ; Mr. C. Warden, 25 ; Mr. B. Cochrane, 8 ; Mr. H. W. Ward, 40.

GROUP II.

*Essex.*—Mr. F. C. Barker, 80 ; Mr. W. Dance, 90 ; Mr. R. Warner, 25 ; Mr. W. Connell, 10 ; Messrs. Saltmarsh & Son, 80 ; Mr. Spivey, 54.

*Lincolnshire.*—Mr. J. McKelvie, 30.

*Norfolk.*—Mr. J. Plowright, 12 ; Mr. W. Vrienals, 20 ; Mr. Sheppard, 19 ; Mr. Brown, 30.

*Suffolk.*—Mr. G. Palmer, 25.

GROUP III.

*Bedford.*—Mr. T. Laxton, 20.

*Hertfordshire.*—Messrs. T. F. Rivers & Son, 80 ; Messrs. W. Paul & Son, 150 ; Messrs. Paul & Son, 80 ; Mr. Mundell, 60 ; Mr. W. Norman, 25.

*Buckinghamshire.*—Mr. C. Turner, 100 ; Mr. J. Smith, 50 ; Mr. G. T. Miles, 40 ; Mr. T. Fletcher, 10.

*Huntingdonshire.*—Mr. A. Harding, 40 ; Miss Cheere, 12.

*Oxfordshire.*—Mr. C. Hewett, 40.

GROUP IV.

*Cheshire.*—Messrs. F. & A. Dickson & Son, 50 ; Messrs. J. Dickson & Son, 32.

*Derbyshire.*—Mr. J. Gaiger, 12 ; Mr. Froggatt, 12.

*Warwickshire.*—Mr. George Clements, 12.

*Nottinghamshire.*—Mr. J. Gleeson, 40 ; Mr. Pownell, 24 ; Mr. Pearson, 45 ; Mr. Newton, 50.

*Rutlandshire.*—Mr. W. N. Divers, 20 ; Mr. J. Grey, 30.

*Staffordshire.*—Mr. R. Machellan, 30 ; Mr. J. Gillman, 25.

*Leicestershire.*—Mr. W. Ingram, 50 ; Messrs. Harrison & Sons, 54.

*Northamptonshire.*—Mr. E. Cole, 80 ; Mr. C. R. Clarke, 6.

GROUP V.

*Devonshire.*—R. Veitch & Son, 120 ; Mr. J. Willis, 32 ; Mr. J. Garland, 37 ; Mr. G. P. Home, 12.

*Dorsetshire.*—Mr. W. Pragnall, 110.

*Gloucestershire.*—Mr. T. Shingles, 54 ; Mr. Jefferson, 00 ; Mr. H. Bannister, 24 ; Mr. Davis, 40.

*Herefordshire.*—Mr. W. Denning, 67 ; Mr. J. Henderson, 25 ; Mr. A. Ward, 36 ; Mr. W. Coleman, 90 ; Mr. J. W. Watkins, 38, and also perry in bottle.

*Worcestershire.*—Mr. W. Crump, 30 ; Mr. A. Ritchie, 50 ; Messrs. Smith & Co., 60.

*Monmouthshire.*—Mr. T. Coomber, 30.

GROUP VI.

*Cumberland.*—Mr. Turner, 1 ; Mr. Johnson, 1.

*Lancashire.*—Mr. J. Hathaway, 35 ; Mr. Winkworth, 36.

*Yorkshire.*—Messrs. Slater & Son, 30 ; Mr. H. J Clayton, 30 ; Mr. E. L. Hall, 45.

SCOTLAND.

Messrs. Ormiston & Renwick, 50 ; Mr. W. Smith, 45 ; Mr. J. Day, 36 ; Mr. McHattie, 15 ; Mr. Melville, 40.

IRELAND.

Mr. G. F. Unthank, 26.

WALES.

Mr. Middleton, 60 ; Mr. Muir, 42 ; Mr. J. Griffin, 20 ; Mr. G. Hawkins, 6 ; Mr. Jenkins, 15.

CHANNEL ISLANDS.

Mr. J. L. Mansell, 12 ; Mr. Thurston, 20 ; Mr. Le Cornu, 80.

FRANCE.

M. Leroy, 196 ; M. Jamin, 50.

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# Obituary.

BARON STERNBERG.—At Turin, on August 12, died, Baron Franz Ungern Sternberg, a pupil of the veteran Bunge, and monographer of the Salicorniads. He was well known to botanical tourists in the Alpes Maritimes, as he resided for some time at Tenda.

—— Carnation and Picotee growers will learn with much regret that an old and much respected member of their fraternity, Mr. Samuel Brown, Crompton Road, Handsworth, Birmingham, passed to his rest on the 16th inst. Mr. Brown had passed the allotted span of man, having attained the age of seventy-one years, for more than forty of which he had been known as a zealous and successful cultivator of Carnations and Picotees, a faithful friend, and a warm-hearted man.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON*

For the Week Ending Wednesday, October 21, 1885.

| Month and Day. | Barometer. | | Temperature of the Air. | | | | | | Hygrometrical Deductions from Glaisher's Tables 7th Edition. | | Wind. | Rainfall. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean Reading at 32° Fahr. | Departure from Average of 15 years. | Highest. | Lowest. | Range. | Mean for Day. | Departure of Mean from Average of 50 years. | | Dew Point. | Degree of Humidity. Sat. = 100. | Average Direction. | |
| Oct. | In. | In. | ° | ° | ° | ° | ° | | ° | ° | | In. |
| 15 | 29.05 | +0.25 | 51 | 42 | 0 | 9 | 5 | 46 8 — | 34 | 40.0 | 78 | E. | 0.02 |
| 16 | 29.89 | +0.19 | 55 | 48 | 6 | 5 | 0 | 3 50.9 + | 0.9 | 45 6 | 83 | E.S.E. | 0.17 |
| 17 | 29.94 | +0.24 | 54.0 | 37 | 2 | 16 | 8 | 46.0 — | 3.8 | 45.4 | 98 | S.S.W. | 0.00 |
| 18 | 29.98 | +0.27 | 49 | 5 | 42 | 0 | 7 | 5.45 4 — | 4 | 3 43 | 5 | S.W., N.N.W. | 0.00 |
| 19 | 29.84 | +0.18 | 49 | 8 | 41 | 0 | 8 | 8 41.7 — | 4.8 | 38 | 2 | 78 | E. N.E | 0.02 |
| 20 | 29.78 | +0.07 | 48 | 5 | 39 | 0 | 9 | 5 43.7 — | 5.6 | 36.0 | 77 | N. NW. | 0.00 |
| 21 | 29.60 | −0.11 | 52.0 | 39.6 | | 12.4 | 4 | 8 — | 4.2 | 42 | 5 | 92 | E.S.E. | 0.03 |
| Mean | 29.86 | +0.16 | 51.6 | 41.0 | | 10.6 | 6.0 | — | 3.6 | 41.7 | | | Variable. | 0.24 |

Oct. 15.—Very fine day.
— 16.—Heavy rain in early morning, fine bright day.
— 17.—Dense fog from early morning till noon, dull day.
— 18.—Very dull day.
— 19.—Fine dull day.
— 20.—Dull in early morning, fine bright day.
— 21.—Fine morning, drizzling rain in afternoon, very fine night.

London: *Atmospheric Pressure.*—During the week ending October 17, the reading of the barometer at the level of the sea increased from 29.16 inches at the beginning of the week to 29.86 inches by 9 A.M. on the 13th, decreased to 29.79 inches by 9 A.M. on the 14th, increased to 29.81 inches by 1 P.M., and decreased to 29.71 inches by 5 P.M. on the same day, increased to 30.15 inches by 1 P.M. on the 15th, decreased to 30.03 inches by 9 A.M. on the 16th, increased to 30.13 inches by 1 P.M. on the 17th, and was 30.12 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.89 inches, being 0.29 inch higher than last week, and 0.01 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 55°.8, on the 16th, on the 13th the highest was 46°.5. The mean of the seven high day temperatures was 50°.5.

The lowest temperature was 32°, on the 12th, on the 16th the lowest temperature was 46°.5. The mean of the seven low night temperatures was 39°.7.

The greatest range of temperature in one day was 17°, on the 12th; the smallest, on the 11th, was 5°.3. The mean of the seven daily ranges was 10°.8.

The mean temperatures were—on the 11th, 44°.5; on the 12th, 40°.7; on the 13th, 41°.8; on the 14th, 43°.1; on the 15th, 46°.8; on the 16th, 50°.9; on the 17th, 46°; and these were all below their averages (excepting the 16th, which was 0°.9 above) by 6°.8, 10°.3, 8°.9, 7°.3, 3°.4, and 3°.8, respectively.

The mean temperature of the week was 44°.8, being 2°.3 lower than last week, and 5°.7 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 95°.5, on the 16th. The mean of the seven readings was 71°.9.

The lowest reading of a minimum thermometer placed on grass was 22°.2, on the 12th. The mean of the seven readings was 32°.

*Rain.*—Rain fell on four days, to the amount of 0.39 inch.

England: *Temperature.*—During the week ending October 17 the highest temperatures were 61°.5 at Cambridge, 60° at Truro, 57°.4° at Nottingham; the highest at Bradford was 52°.1, at Sunderland and Newcastle, 53°. The general mean was 55°.5.

The lowest temperatures were 29°.8 at Wolverhampton, 32° at Blackheath and Hull; the lowest at Truro was 38°, at Sheffield and Newcastle, 37°. The general mean was 34°.6.

The greatest ranges were 29°.2 at Cambridge, 26°.3 at Wolverhampton, 23°.8 at Blackheath; the least ranges were 15°.5 at Bradford, 16° at Newcastle, 18° at Sheffield and Sunderland. The general mean was 20°.9.

The mean of the seven high day temperatures was highest at Truro, 54°.9, at Plymouth 53°, at Bristol 52°.9; and was lowest at Wolverhampton, 49°.4, at Bolton 49°.7, at Bradford 49°.9. The general mean was 51°.4.

The mean of the seven low night temperatures was highest at Truro, 43°.4, at Leeds 43°.1; at Sheffield and Sunderland 42°.7; and was lowest at Wolverhampton, 36°.4, at Bolton 38°.5, at Bristol 39°. The general mean was 40°.8.

The mean daily range was greatest at Bristol, 13°.9, at Cambridge 13°.2, at Wolverhampton 13°; and was least at Sunderland, 7°.5, at Bradford 8°.3, at Leeds 9°.1. The general mean was 10°.6.

The mean temperature was highest at Truro, 48°.1, at Sheffield and Leeds 46°.7; and was lowest at Wolverhampton, 41°.9, at Bolton 43°.1, at Hull 44°.6. The general mean was 45°.2.

*Rain.*—The largest falls were 1.66 inch at Truro, 1.48 inch at Sunderland, 1.15 inch at Newcastle; the smallest falls were 0.20 inch at Brighton, 0.34 inch at Liverpool, 0.39 inch at Blackheath. The general mean fall was 0.65 inch.

Scotland: *Temperature.*—During the week ending October 17, the highest temperature was 55°.2, at Paisley; at Leith the highest temperature was 50°.3. The general mean was 53°.1.

The lowest temperature in the week was 25°.2, at Perth; at Greenock the lowest temperature was 34°. The general mean was 30°.2.

The mean temperature was highest at Paisley, 45°.9; and lowest at Perth, 43°.7. The general mean was 45°.

*Rain.*—The largest fall was 0.71 inch, at Aberdeen; the smallest fall was 0.03 inch, at Leith. The general mean fall was 0.18 inch.

JAMES GLAISHER, F.R.S.

# Enquiries.

"*He that questioneth much shall learn much.*"—Bacon.

Orchids.—Can any of your readers inform me whether the following Orchids are worth cultivating, viz., Angræcum odoratissimum and Bolbophyllum cardyanum? These plants, I imagine, are amongst the early introductions, as they came from the San Donato collection of Prince Demidoff. *H. J. R.*

# Answers to Correspondents.

*** Our Telegraphic Address.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "Gardchron, London," Gardchron *being written as one word. Telegrams thus addressed will reach the Editor or the Publisher without other address being needed than* "Gardchron, London."

Acacia at Masonic Funeral: *A. N.* We do not know which species is used.

Cyclamens Decaying in Centre: *Constant Reader.* The plants damping off as they are doing can only be accounted for by their being damped over daily. Cyclamens ought not to be syringed or damped over in any way at this season of the year. Even when applying water to the roots it must be done without any water getting in to the centre of the plants. They ought to be placed in a heated house now, and be kept as close as possible to the glass, so that damp may be dried up and frost kept out. Let the atmosphere of the house be moderately dry, and by paying attention to the watering they will recover.

Double Eucharis: *R. Brothers.* The flower is a composite one, resulting from the union of two. When this happens some of the portions are suppressed, so that the number of parts is less than would be the case in two separate flowers.

Double Lafageria: *G. T.* Interesting, but we have seen much finer samples.

Earwigs in the House: *Subscriber.* They can be readily caught by using Bean-stalks, Bamboo, small tubes, garden pots, &c., so placed that the insects can readily enter on being disturbed. When once in these simple traps you can turn them out into hot water, or kill them as tenderly as you like.

Edging a Competing Group of Chrysanthemums: *T. W.* We should think it ought not to disqualify, as it would not influence the judges, who would not give attention to the setting, but to the Chrysanthemums.

Errata.—In our report of the miscellaneous exhibits at the Fruit Show at South Kensington on the 13th and 14th inst., we omitted to state that Mr. H. B. May obtained a Silver Banksian Medal for a group of Ferns, Crotons, Dracænas, &c.—Mr. S. Jacobs, of Covent Garden, was the exhibitor of the fine Gourd shown at the late show at South Kensington, not Mr. Jacobs of Petworth, as was stated.

Eucharis: *D. C. H.* Your bulbs are attacked by the Eucharis mite, so often mentioned of late, and fully described at p. 440, vol. xxiii., 1885.

Fungus: *E. V. B.* Scleroderma vulgare, an ally of the Puff-balls, sometimes mistaken for the Truffle, an entirely different fungus.

Insects: *A. M. M.* The large many-celled gall found at the roots of an Oak is that of the gall-fly (Cynipideous), Aphilothrix radicis, Fabricius. The perfect flies are still in their cells, in which they will remain till next spring, when they escape, mount the Oak, deposit their eggs in the young shoots, which produce gall-flies, named Andricius Noduli. These descend the trees and deposit their eggs in the roots, which reproduce the A. radicis. *J. O. W.*

Is Charcoal Burning Injurious to Fruit Trees *E. T.* In reply to the query as to whether fumes from a charcoal kiln are injurious to fruit trees, I should say not; at least, on examining an Elm, Oak, Elder, Alder, and Thorn growing within six yards of where charcoal has been manufactured for the past twenty years, they do not seem to have suffered in the least. *A. D. W.*

Names of Fruits: *W. D.* 1, Warner's King; 2, not known; 3, Bess Pool.—*J. Hughes.* 1, Napoléon; 2, Easter Beurré; 2, Hacon's Incomparable (there were two numbers 2); 5, Winter Nelis; 6, Glou Morçeau.—*C. T.* 1, Doyenné du Comice; 2, Marie Louise; 3, Beurré d'Amanlis; 4, B. Sterckmans; 5, Adams' Pearmain; 6, Fearn's Pippin; 7, not recognised.—*A. Posey.* Probably Hanwell Souring.—*Jas. Geddes. Pears:* 1, Gansel's Bergamot; 2, Marie Louise; 3, Louise Bonne of Jersey. *Apples:* 1, Lord Suffield; 2, not recognised; 3, Margil; 4, Fearn's Pippin; 5, Hormead's Pearmain; 6, Bedfordshire Foundling.—*S. H.* 2, Rymer; 3, Lamb Abbey Pearmain; 5, Goff; 6, Wyken Pippin; others not recognised.—*Berwick Sidmouth.* 50 and 62, Hambledon Deuxans; 52, Golden Ball of Devon; 53, Sturmer Pippin; 54, Caroline; 59, Reinette du Canada; 60, Old Nonpareil; 61, Tom Putt; one other, number lost, Mannington Pearmain; others not recognised.—*S. L.* 1, Scarlet Nonpareil; 2, King of the Pippins; 3, not known; 4, Ashmead's Kernel; 5, New Hawthornden; 6, 7, Sturmer Pippin; 8, Blenheim Orange; 9, Brabant Bellefleur; 10, Sturmer Pippin, probably.—*Thos. Barnett. Apple:* Winter Majetin. *Pear:* Flemish Beauty.—*H. Woods. Apple:* Summer Thorle.—*J. & Co.* Small specimen, Waltham Abbey Seedling.—*W. Cook.* 1, 4, 5, Marie Louise; 2, Beurré Diel; 3, Louise Bonne of Jersey; 6, Vicar of Winkfield; 7, Glou Morçeau. These are all dessert Pears of the best quality.

Names of Plants: *G. W.* 1, Forsythia viridissima; 2, one of the varieties of Ceanothus azureus.—*W. R.* We cannot undertake to name the numerous varieties of Crotons and Dracænas. 9, is Phyllotænium Lindeni; 10, Justicia speciosa.—*Darlington.* 1, Adiantum concinnum; 2, Adiantum pubescens; 3, Selaginella involvens; 4, Cyperus laxus variegatus.—*J. Cocker & Sons.* 1, Lonicera xylosteum; 2, Spiræa callosa; 3, one of the numerous forms of, or hybrids from, Spiræa salicifolia.

Passion-Flower Over Luxuriant to Flower: *J. A. Ewing.* Uncover the extremities of the roots, and cut them inwards to the wall for a foot or more; then prune off the tips of the bigger ones by so much, retaining the smaller and more fibrous roots. If the plant requires manure, apply bone-meal, charcoal, or Standen's Patent Manure in small quantities. With this treatment, unless your plant is very young, or shaded by other things, you ought to bring it into a flowering state.

Seeding Dahlia: *W. P.* Your flowers are not improvements on existing kinds, but it is late for good flowers; send, therefore, next season earlier.

Sea Buckthorn and Cattle: *T. D.* We never heard that the foliage is injurious to cattle.

Tomato: *Waite, Nash & Co.* From sample sent it does not seem to be any improvement on Hathaway's Excelsior, which is one of the best flavoured sorts.

Walnuts and Figs: *H. H.* You can keep your Walnuts in charcoal dust, or silver sand in a rather dark room. Figs: Brown Turkey. Lee's Perpetual or Negro Largo will do for your vinery back wall; the latter is not very free unless the roots are much restricted as to space.

Communications Received.—Sutton & Sons—Brownlow Knox.—W. S.—G. T. W.—F. C. Heinemann, Erfurt—Delapierre.—Marshall P. Wilder, Boston.—E. André, Paris.—J. D. H.—Thos. Ware.—W. G.—Cambridge.—W. Barbey, Valleyres.—Rchb. f.—C. P. & Co.—G. W. (next week).—M. Saul.—Phillips.—Daison.—Greenfield.—C. & W. T.—J. U.—H. C.—T. D.—F. T. (should address Editor).—Old Subscriber.—G. G.—T. J.—L. P. J.—F. M.—P. S. (next week.)—W. W.—T. Cochrane.—G. H. P.—W. G. S.—W. S—T. B.—E. Y. M.—J. Witherspoon (next week).—C. Sharpe.

DIED, on the 19th inst., at the residence of her son, The Botanical Gardens, Manchester, Eliza, widow of the late Alexander Findlay, of Peterhead, Aberdeenshire, aged eighty.

# Markets.

*COVENT GARDEN, October 22.*

MARKETS are still very heavy at the quoted prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Apples, per ½-sieve | 1 0– 3 0 | |
| Damsons, ½-sieve | 3 0– 3 6 | |
| Figs, per dozen | 0 6– 0 9 | |
| Grapes, per lb. | 0 6– 3 0 | |
| Kent Cobs, 100 lb. | 24 0–25 0 | |
| Kent Filberts, 100 lb. | 25 0–28 0 | |
| Lemons, per case | 15 0–30 0 | |
| Melons, each | 0 6– 1 6 | |
| Peaches, per doz. | 3 0– 8 0 | |
| Pine-apples, Eng. lb. | 2 0– 4 0 | |
| — St. Michael, each | 2 6– 5 0 | |
| Pears, per dozen | 0 9– 1 3 | |
| — per ½-sieve | 1 6– 3 0 | |
| Plums, ½ sieve | 1 6– 3 0 | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. |
|---|---|---|
| Artichokes, Globe, per doz. | 5 0– | |
| Aubergines, each | 0 4– | |
| Beans, Eng., per lb. | 0 4– | |
| — French, per lb. | 0 9– | |
| Beet, per dozen | 1 0– | |
| Brussel Sprouts, lb. | 0 4– | |
| Cabbages, per dozen | 1 6– 2 0 | |
| Carrots, per bunch | 0 6– | |
| Cauliflowers, Eng. lsh, per dozen | 1 6– 3 0 | |
| Celery, per bundle | 1 6– 2 6 | |
| Cucumbers, each | 0 4– 0 6 | |
| Endive, per dozen | 2 0– | |
| Garlic, per lb. | 0 6– | |
| Herbs, per bunch | 0 2– 0 4 | |
| Horse Radish, bun. | 3 0– 4 0 | |
| Lettuces, Cab., doz. | 2 0– | |
| Mint, green, bunch | 0 4– | |
| Mushrooms, basket | 1 6– 2 0 | |
| Onions, per bushel | 3 6– | |
| — Spring, per bun. | 0 6– | |
| Parsley, per bunch | 0 4– | |
| Radishes, per dozen | 1 0– 2 0 | |
| Small salading, per punnet | 0 4– | |
| Spinach, per bushel | 4 0– | |
| Tomatos, per lb. | 0 6– 0 9 | |
| Turnips, bunch | 0 6– | |
| Veget. Marrs., each | 0 3– | |

POTATOS.—Magnum Bonums, bad trade, 90s. to 80s.
Regents, 60s. to 80s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Aralia Sieboldi, doz. | 6 0–18 0 | |
| Arbo. vitæ (golden), per dozen | | 6 0–24 0 |
| — (common), dozen | 6 0–12 0 | |
| Arum Lilies, dozen | 9 0–18 0 | |
| Begonias, per dozen | 4 0–12 0 | |
| Bouvardia, dozen | 12 0–18 0 | |
| Chrysanth., per doz. | 9 0–18 0 | |
| Cyperus, per dozen | 4 0–12 0 | |
| Dracæna terminalis, per dozen | 30 0–60 0 | |
| — viridis, per doz. | 12 0–24 0 | |
| Erica, various, doz. | 9 0–12 0 | |
| Euonymus, in var., per dozen | 6 0–18 0 | |
| Evergreens, in var., per dozen | | 6 0–24 0 |
| Ficus elastica, each | 1 6– 7 0 | |
| Ferns, in var., dozen | 4 0–18 0 | |
| Foliage Plants, various, each | 2 0–10 0 | |
| Fuchsias, per dozen | 6 0– 9 0 | |
| Marguerite Daisy, per dozen | 8 0–12 0 | |
| Myrtles, per dozen | 6 0–12 0 | |
| Palms in variety, each | 2 6–21 0 | |
| Pelargoniums, scarlet, per dozen | 2 6– 9 0 | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | |
| Arum Lilies, 12 blms. | 6 0– 8 0 | |
| Asters, 12 bunches | 4 0– 8 0 | |
| Azalea, 12 sprays | 2 0– | |
| Bouvardias, per bun. | 0 6– 1 0 | |
| Camellias, 12 blms. | 3 0– 6 0 | |
| Carnations, 12 blms. | 1 0– 3 0 | |
| Chrysth., 12 blms. | 1 0– 6 0 | |
| — 12 bunches | 5 0–12 0 | |
| Eucharis, per dozen | 4 0– 6 0 | |
| Gardenias, 12 blooms | 3 0– 6 0 | |
| Lapageria, white, 12 blooms | 2 0– 3 0 | |
| — red, 12 blooms | 1 0– 2 0 | |
| Lil. longifl., 12 blms. | 6 0– 8 0 | |
| Marguerites, 12 bun. | 3 0– 6 0 | |
| Mignonette, 12 bun. | 1 6– 3 0 | |
| Pelargoniums, per 12 trusses | 1 0– 1 6 | |
| — scarlet, 12 trusses | 0 9– 1 0 | |
| Rhodanthe, 12 bun. | 6 0– 9 0 | |
| Roses (indoor), doz. | 1 0– 3 0 | |
| — 12 bunches | 6 0–12 0 | |
| Stephanotis, 12 spr. | 5 0– 6 0 | |
| Tropæolum, 12 bun. | 1 0– 1 6 | |
| Tuberoses, 12 blms. | 0 9– 1 6 | |
| Violets, 12 bunches | 1 0– 1 3 | |
| — Czar, Fr., bunch | 1 0– 1 3 | |
| — Parme, Fr., bun. | 4 0– 5 0 | |

## SEEDS.

LONDON: *Oct.* 21.—The seed market was to-day scantily attended, and the transactions passing were few and unimportant. At present no speculative inquiry shows itself for Clover seeds. For winter Tares the sale is still small. Seed Rye also moves off slowly. Some new Turkish Canary seed has now arrived, and is obtainable at very moderate rates: the impression prevails that higher values will shortly be seen. Hemp seed is 1*s.* cheaper. There is no change in Haricot Beans and blue Peas. Linseed is steady with but little offering. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## FRUIT, ROOTS, AND VEGETABLES.

COLUMBIA (East London): *Oct.* 21.—Fair demand for fruit and vegetables, with good supplies. Prices:—Cabbages, 2*s.* 6*d.* to 4*s.* 6*d.* per tally; greens, 2*s.* 6*d.* to 4*s.*; Turnips, 2*s.* to 2*s.* 6*d.*; Carrots, 2*s.* to 2*s.* 3*d.*; and Parsley, 1*s.* to 1*s.* 6*d.* per dozen bunches; Celery, 7*s.* to 12*s.*; and Beetroot, 3*s.* to 3*s.* 6*d.* per dozen; Horse Radish, 1*s.* to 1*s.* 3*d.* per bundle; Mangels, 22*s.* 6*d.* to 25*s.* per ton; Carrots, 30*s.* to 40*s.* per ton; Onions, 4*s.* to 4*s.* 6*d.* per cwt.; Apples, 2*s.* to 4*s.* 6*d.*; and Pears, 2*s.* 6*d.* to 4*s.* 6*d.* per bushel.

STRATFORD: *Oct.* 20.—The supplies have been good during the past week, as also the attendance of buyers, consequently a fair trade has been done at the following quotations:—Cabbages, 3*s.* to 7*s.* per tally; red Cabbage, 9*d.* to 1*s.* 6*d.* per dozen; greens, bunch, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Cauliflowers, 1*s.* to 2*s.* per dozen; Mangels, 17*s.* to 20*s.* per ton; Turnips, 50*s.* to 85*s.* per ton; ditto, bunch, 1*s.* 6*d.* to 3*s.* 6*d.* per dozen; Apples, 2*s.* to 5*s.* per bushel; Carrots for cattle, 26*s.* to 30*s.* per ton; ditto, household, 42*s.* to 50*s.* per ton; ditto, bunch, 2*s.* per dozen; Tomatos, 8*s.* per case; Celery, 1*s.* to 1*s.* 2*d.* per bundle; Horse Radish, 10*d.* to 1*s.* per bundle.

## COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 14*s.* 9*d.*; East Waylm, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Lambton, 18*s.*; Wear, 16*s.* 6*d.*; Hulam, 18*s.* 5*d.*; East Hartlepool, 17*s.* 6*d.*; South Hartlepool, 16*s.* 6*d.*; Tees, 18*s.* 6*d.*; Harton, 16*s.* 6*d.*; Hetton, 18*s.* 6*d.*; Hetton Lyons, 16*s.* 6*d.*; Wear, 16*s.* 6*d.*; South Durham 16*s.* 6*d.*

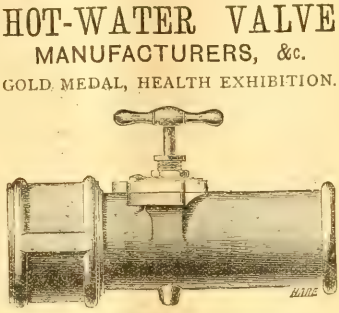

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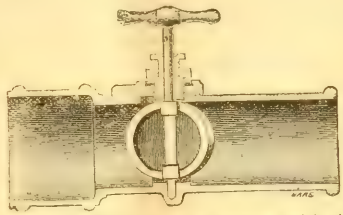


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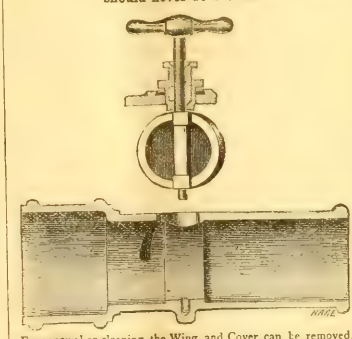
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LILIES and ORCHIDS are WM. GORDON'S specialties, and can nowhere be had better or cheaper. These are specially imported from all parts of the world, and largely grown to supply the wants of the Trade, to whom special offers will be made. WM. GORDON'S CATALOGUE has now been sent to all his known Customers, and will be forwarded on receipt of request to any one desirous of receiving a copy. DUTCH BULBS are supplied only in the first quality at the lowest possible prices. Lovers of ALPINE PLANTS can now have all their wants satisfied, as WM. GORDON has a Resident Collector in the Alps. First-class Certificate awarded this season for new Tree Pæonies. For these and other Novelties, all equally low in price, apply to WM. GORDON, The Nurseries, Twickenham, Middlesex.

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MILLTRACK MUSHROOM SPAWN.—The best and cheapest ever offered. Quality guaranteed. 4s. 6d. per bushel (16 cakes), 6d. per bushel package; 2 cakes as samples, free parcel post, 1s. 3d. Trade supplied very low
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MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

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FRESH COCOA-NUT FIBRE REFUSE, 4-bushel Bags, 1s. each; 30 for 25s.—bags included; 2-ton Truck, free on Rail, 25s. BEST BROWN FIBROUS KENT PEAT, 5s. per Sack; 4 for 22s. 6d.; 10 for 45s.; 20 for 80s. BEST BLACK FIBROUS PEAT, 4s. 6d. per Sack; 5 for 20s.; 10 for 30s. COARSE BEDFORD SAND, 1s. 6d. per Bushel; 14s. per ½ Ton; 25s. per Ton. SPECIALITE TOBACCO PAPER, 10d. per lb.; 28 lb., 21s.; cwt., 70s. FINEST TOBACCO CLOTH, 8d. per lb.; 28 lb. for 18s. LEAF-MOULD, 5s. per Sack. PEAT MOULD, 4s. per Sack. YELLOW FIBROUS LOAM, 3s. per Sack. CHARCOAL, 2s. 6d. per Bushel; Sacks, 4d. each. BONES, GUANO, SPHAGNUM, &c. LIST Free. Special Prices to the Trade for Cash.
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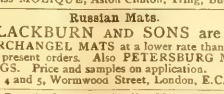
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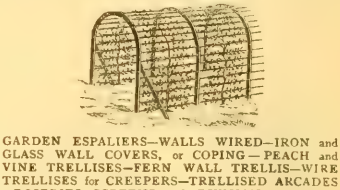
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| | No. 2 Medium | 18 | 5 6 | 7 6 | 9 6 | 11 6 | 14 0 | 18 0 | 27 0 |
| 1½-in. mesh Rabbit. | No. 1 Light | 19 | 4 6 | 6 6 | 8 6 | 10 6 | 12 6 | 16 0 | 24 0 |
| | No. 2 Medium | 18 | 4 6 | 6 6 | 9 0 | 11 6 | 13 6 | 18 0 | 27 0 |
| 1½-in. mesh Small Rabbit. | No. 1 Light | 19 | 4 6 | 6 6 | 9 0 | 11 6 | 13 6 | 18 0 | 27 0 |
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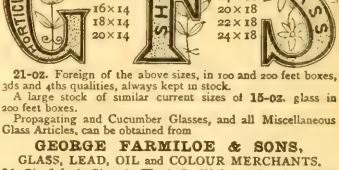
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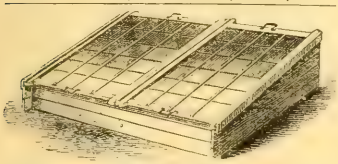



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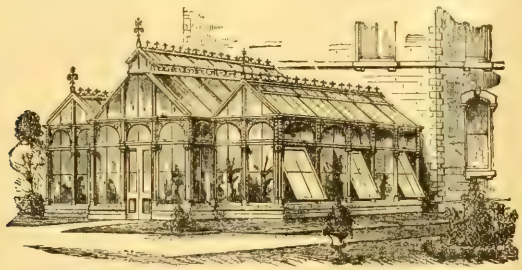
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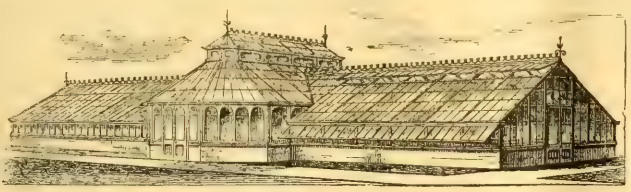
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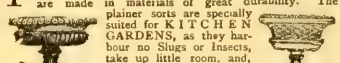
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**"Special Strength" Three-quarter Plate Movement.**
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The **immense** superiority in Value, Accuracy, and Durability of the "**Ludgate**" Watch to **Swiss and American** made in **imitation** of and sold as English) and to the Old Full-plate English Lever (still sold by other makers), from the great defects of which the "Ludgate" is exempt—is proved by the Award of a **GOLD MEDAL** *the only one adjudged to English Watches*

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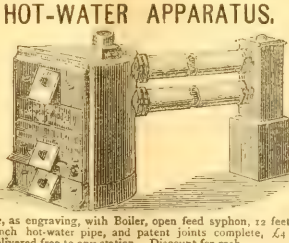
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Price, as engraving, with Boiler, open feed syphon, 12 feet of 4-inch hot-water pipe, and patent joints complete, £4 4s. Delivered free to any station. Discount for cash.

This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised.

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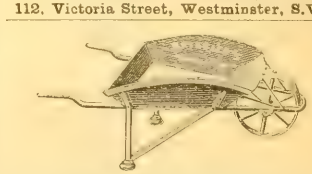
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With TUBULAR FRAME and HANDLES.

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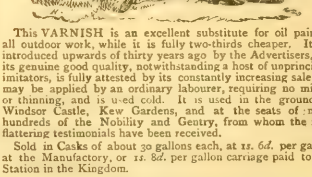
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,, Irish, Golden, Seedling, 3, 4, and 5 feet.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet, thousands.
RHODODENDRONS, 3, 4, 5, 6, 8 to 10 feet, thousands of finer plants than can be found in any other Nursery.
☞ The fine Standard and other Rhododendrons annually planted in Rotten Row, Hyde Park, are supplied by ANTHONY WATERER
KALMIA LATIFOLIA, healthy and well furnished plants, 18 to 24 inches, showing from twelve to thirty trusses of bloom.
AUCUBA JAPONICA, 2½ to 3 feet, hundreds.
BAMBUSA METAKE, fine clumps, 5 to 8 feet high, transplanted spring, 1885, hundreds.
BOX, Green and Variegated, 3, 4, 5, 6 to 7 feet, thousands
HOLLIES, Common Green, 3, 4, 5 up to 10 feet, thousands.
,, ALTACLARENSE,
,, HODGINS,
,, LAURIFOLIA,
,, MYRTIFOLIA,
,, SCOTTICA,
} 3, 4, 5 up to 10 feet, many thousands.
,, Yellow-berried and other sorts.
,, Variegated, of sorts, 3, 4, 5 up to 10 feet, thousands.
,, Golden Queen, 3, 4, 5, 6, 7 to 10 feet, hundreds of beautiful specimens.
,, Silver Queen, 4 to 10 feet, splendid specimens.
,, Weeping, Perry's, on straight stems, with heads of ten to fifteen years' growth, hundreds.
,, Weeping, New Golden, a large quantity of beautiful plants.

The following trees have stout, straight stems, fine heads, and splendid roots, and have all been transplanted within two years:—
ACACIA BESSONIANA, 6 to 10 feet.
ACER DASYCARPUM, 13 to 15 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet
,, RETTENBACHII, 8 to 10 feet.
,, SCHWEDLERI, 12 to 14, and 14 to 16 feet.
,, WORLEYII, Standards, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, 9 to 12, and 12 to 14 feet.
BIRCH, Silver, 12 to 14 feet.
,, Purple, 14 feet.
CHESTNUT, Horse, 14 to 16 feet.
,, Horse, Scarlet, 12 to 14 feet.
,, ,, Double, 10 to 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 10 to 12 feet, 12 to 14 feet, and 14 to 16 feet.
,, Silver-leaved, 12 to 14 feet.
LIQUIDAMBAR, 6 to 8 feet.
ASH, Mountain, 10 to 12 feet.
MAPLE, Norway, 14 to 16 feet.
OAKS, American, 12 to 14 feet.
,, English, 10 to 12 feet.
PLANES, 14 feet and upwards.
POPLAR CANADENSIS NOVA, 12 to 15 feet.
,, BOLLEANA, 8 to 10 feet
SYCAMORE, Common, 14 to 15 feet.
,, Purple, 15 to 16 feet.
,, Variegated, Standards, 10 to 12 feet.

**Weeping Trees.**

BEECH, Weeping, Pyramids and Standards, 10 to 12 feet
,, Weeping, Purple (true), Standards, 8 to 10 feet
BIRCH, Young's Weeping, Pyramids, 10 to 12 feet.
,, Young's Weeping, Standards, 14 feet.
ELMS, Weeping, Standards, 10 feet stems.
HAZEL, Weeping, Standards, 8 to 10 feet.
LARCH, Weeping, 6 to 10 feet.
POPLAR, Weeping, Standards.
SOPHORA JAPONICA PENDULA, Standards, 8 to 9 feet.

Intending planters are invited to inspect the Plants growing; no one interested in such matters will regret the trouble. Catalogues convey but a very inadequate idea of such a Stock.

KNAP HILL NURSERY,
WOKING, SURREY.

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*FRUIT TREE NURSERIES,*
MAIDSTONE,

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*IN ALL FORMS,*

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**All Trees on the most congenial Stock.**

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*Also Orchard-house Stuff in pots, Figs, Vines, &c.*

Large exhibitors at the Crystal Palace, London Shows, the great Apple Congress, and the Pear Conference. Winners of the Champion Prize for Apples at the "Inventories."

APPLE, LADY SUDELEY, First-class Certificate, Royal Horticultural Society and Royal Scottish Horticultural.
,, HIGH CANONS, First-class Certificate, Royal Horticultural Society.
,, GOSPATRIC (fine at the Congress).
Circulars, with Testimonials, post-free.
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**SHRUBS, CONIFERS and PARK TREES.**

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THE

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## APPEAL TO THE BENEVOLENT

On behalf of Two Sisters, aged respectively 70 and 72 (the younger has been an invalid for many years), who have lived together all their lives. The leases of their property having fallen into the hands of the Ecclesiastical Commissioners some six years ago, they have vainly struggled since then to obtain a living by letting apartments, but the little money they had saved being now quite exhausted, and owing over a year's rent, make this Appeal, hoping to save their home from being broken up, and parting with everything they possess. Will any kind Friends help them in their deepest distress? The following Gentlemen have kindly allowed a reference to be made to them, and will give every information respecting the genuineness of this Appeal:—

Dr. MAXWELL T. MASTERS, F.R.S., 41, Wellington Street, Strand, W.C.
Mr. J. KEASLEY, 62, Saltoun Road, Brixton, S.W.
Mr. W. RICHARDS, 41, Wellington Street, Strand, W.C.

*Contributions will be gratefully received and thankfully acknowledged by* Mr. W. RICHARDS. "Gardeners' Chronicle" Office, 41, Wellington Street, Strand, W.C.

## GARDENERS' CHRONICLE OFFICE TELEGRAMS.

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"*GARDCHRON, London.*"

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Now Ready, in cloth, 16s.

*THE GARDENERS' CHRONICLE*, Volume XXIII., JANUARY to JUNE, 1885.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

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LYCASTE SKINNERI ALBA, and
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*Both expected to be in bloom.*
And many other good varieties, will be SOLD by AUCTION, at Dowell's Rooms, Edinburgh, on TUESDAY, November 3, at 12 o'Clock.

WARE'S AUCTION SALE OF SURPLUS NURSERY STOCK.
A large quantity of unusually fine stuff will be offered on TUESDAY, November 3, next.
For particulars see separate announcement. CATALOGUES may be had upon application to the Auctioneers or myself, THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

SPIRÆA JAPONICA, strong, well ripened Clumps for Forcing, very fine, 20s. per 100.
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CAPE BULBS—CAPE BULBS.
Capetown Botanic Gardens.
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237 and 238, High Holborn, London, W.C.

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"WALLACE, COLCHESTER," is now the Telegraphic Address of the NEW PLANT AND BULB CO., Colchester.

TELEGRAPHIC ADDRESS.—
"GILBERT, STAMFORD."
It is said that Conservatives have no Policy. Being a thorough one I declare my Policy to be to deal honestly, to sell all I can, and to give general satisfaction. Send for CATALOGUE.
R. GILBERT, High Park Gardens, Stamford.

TELEGRAMS.—We beg to announce that our Registered Address for Telegrams from all parts, is "QUICK, NORTHAMPTON."
JOHN PERKINS AND SON,
(*The Old Established Nursery and Seed Business*)
52, Market Square, Northampton.

THOMAS WARE, Hale Farm Nurseries, Tottenham, London, begs to announce that his Address for Telegrams is "WARE, TOTTENHAM."

TELEGRAMS.—Our Registered Telegraphic Address is "SMITH, DARLEYDALE," counting as two words.
JAMES SMITH AND SONS, Darley Dale Nurseries, near Matlock.

TELEGRAMS.—"WILLIAMS, LONDON," is the Registered Telegraphic Address for Inland Telegrams only of B. S. WILLIAMS, Nurseryman and Seed Merchant, Victoria and Paradise Nurseries, Upper Holloway, N.

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LISTS Gratis on application.
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

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TELEGRAMS—"TUCKER, FARINGDON."

PAUL'S NURSERIES, Waltham Cross, Herts (entrance from Waltham Cross Station).—Purchasers of ROSES, FRUIT TREES, ORNAMENTAL TREES, EVERGREENS, BULBS, &c., are invited, before purchasing, to inspect the stock at the Waltham Cross Nurseries, half an hour from London, Great Eastern Railway. Priced CATALOGUES free. WM. PAUL AND SON, Waltham Cross.

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LAING AND CO.'S Stock of Fruit Trees, Roses, Shrubs, and Ornamental Trees is in prime condition for Transplanting. Prices are low. Early orders solicited. LISTS on application.
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## SALES BY AUCTION.

### Dutch Flower Roots.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

### Wednesday Next.—(Sale No 7007)
PLANTS AND BULBS FROM HOLLAND.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 4, at half-past 12 o'Clock precisely, a large consignment of Standard, Dwarf and Climbing ROSES, FRUIT TREES of sorts, and other PLANTS, from Holland; also several hundred lots of first-class DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No. 7008.)
HOME-GROWN LILIES and other BULBS in variety.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 5, at half-past 12 o'Clock precisely, a fine COLLECTION of HOME-GROWN LILIES, including all the leading varieties; rare CRINUMS, splendid bulbs of CRINUM ERUBESCENS REFRACTA ALBA, choice NARCISSI in variety, TIGRIDIAS of sorts, BRODIÆAS, IRIS, SPIRÆAS, South African TUBEROSES, consignments of LILIUM CANDIDUM and LILY OF THE VALLEY from Germany, DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

### Thursday Next.—(Sale No. 7008.)
5000 LILIUM AURATUM, from Japan.
First consignment of the season.

MR. J. C. STEVENS begs to announce that his first consignment of LILIUM AURATUM has just arrived from Japan, and will be included in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 5.

On view morning of Sale, and Catalogues had.

### Orchids in Flower.

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 19, and he will be glad if Gentlemen desirous of entering Plants for this Sale will please send particulars for Catalogue as soon as possible.

### Dutch Bulbs.
Every MONDAY, THURSDAY, and SATURDAY.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, about 800 lots of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other ROOTS from Holland, in excellent quality, and lotted to suit the Trade and private Buyers.

On view morning of Sale, and Catalogues had.

N.B.—In consequence of the Lord Mayor's Show, there will be no Sale on MONDAY, November 9, but it will be held the following day (TUESDAY, November 10).

### Sunbury, Middlesex.
IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Turtle, to SELL by AUCTION, on the Premises, Osborn's Nursery, Sunbury, Middlesex, ten minutes' walk from the Railway Station, on MONDAY, November 2, at 12 o'Clock precisely, the following VALUABLE STOCK, comprising 4000 Apples, one and three years old, including among other varieties Lord Suffield, Keswick Codlin, Ecklinville Seedling, Stirling Castle, Warner's King, Worcester Pearmain; 5000 Victoria Plums (Maidens); 500 Pears; 500 Farleigh Damsons; 1000 Standard Plums; 10,000 fine Dwarf Roses, on Manetti, leading sorts, 100,000 Manetti Stocks; 4000 Climbers, of sorts; 1000 Tea Roses in pots, Niphetos, Maréchal Niel, and others, for forcing; 5000 Double White Primulas, in 48-pots, extra fine; 500 Adiantum cuneatum; 200 Bouvardia gibbia, 7000 Privet; a variety of Ornamental Trees and Shrubs, in fine condition for removal, and 3½ acres of Magnum Bonum Potatos. The Fruit Trees are especially fine, forming part of the celebrated stock of the late firm of Osborn & Sons.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

### Tottenham.
Adjoining the Tottenham Hale Station. Great Eastern Railway.
SALE of remarkably well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware to SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 3, and following day, a large quantity of beautifully-grown NURSERY STOCK, which has been carefully cultivated and judiciously prepared for removal, including 5000 oval-leaved Privet, 3½ to 4½ feet, fine bushy plants, grown singly; 2000 Caucasian Laurels, 3 to 5 feet, robust plants; 8000 Dwarf Roses, embracing all the leading varieties of Hybrid Perpetuals, Teas, Moss, China Roses, &c; 6000 Standard Ornamental Trees, 8000 Euonymus japonica, 1 to 2 feet, for potting, bushy plants; 5000 strong Red, White, and Black Currants, 5000 Hardy Climbers in pots, all well grown; 1000 Hedera maderensis variegata, 1000 of the new Double White Violet, Compte Brazza, 1000 of the new, hardy and beautifully pure white Passion-flower, Constance Eliot; 50,000 exceptionally strong Seakale and Asparagus for forcing, 4000 imported Clumps of Spiræa japonica, 5000 showy border Carnations of the finest sorts, 5000 good bulbs of Lilium candidum, 2000 L. speciosum, rubrum, roseum, and album monstrosum; 2000 Dielytra spectabilis, 25,000 fine German Crowns of Lily of the Valley, and large quantities of various Herbaceous Plants, Bulbs, &c.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Nurseries are easy of access, being adjacent to the Railway Station, and an inspection is invited of the unusually well-grown Stock to be offered in this Sale.

### Betchworth, Surrey.—Expiration of Tenancy.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Ivery & Son to SELL by AUCTION, on the Premises, The Barley Mow Nursery, Betchworth, one mile from the station, on TUESDAY, November 3, at 12 o'Clock precisely, by order of Messrs. Ivery & Son, the whole of the well-grown NURSERY STOCK, comprising a quantity of Common Laurels, Yews, Hollies, Hornbeam, Scotch and Spruce Firs; an assortment of choice Evergreen Shrubs, comprising Cedrus Deodara, Thuia Lobbii, and occidentalis; Euonymus, Box, &c.; also Ivies in pots, Pampas and Feather Grass, Roses, Mulberries, Gooseberries, and Currants.

Now on view. Catalogues may be had on the Premises; at the Dorking Nurseries; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Wednesday Next.

A consignment of CAMELLIAS, AZALEAS, FICUS, PALMS, and other PLANTS from Belgium; beautifully grown FERNS and PALMS, also 5000 choice named Standard ROSES from English Nurseries; DUTCH FLOWER ROOTS and NARCISSUS in variety, LILIES of sorts, and an assortment of HARDY PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 4, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

### Hampton, Middlesex

IMPORTANT SALE of 24,000 FRUIT TREES, beautifully grown and cultivated from the strain of the late firm of Osborn & Sons, whose reputation for the growth of Fruit Trees was unsurpassed, and embracing all the leading varieties in commerce, comprising 4000 Standard Plums and Cherries, 13,000 Maiden Nectarines, Peaches, Damsons, and Apricots, 2000 Maiden Pears, 2000 Standard Apples and Pears (two years), Dwarf-trained Peaches, Nectarines and Apples, Figs and Vines in pots, 400 Standard Damsons, 7000 Bushy Oval-leaved PRIVET, 3 to 4 feet, 1400 SEAKALE, 750 THUIA LOBBII, 1½ to 3 feet, 7500 Dwarf ROSES, of all the best and favourite sorts.

MESSRS. PROTHEROE AND MORRIS will SELL the above valuable stock by AUCTION, on the Premises, Osborn Nursery, Hampton, Middlesex, close to the Railway Station, on WEDNESDAY NEXT, November 4, at 12 o'Clock precisely, in consequence of the large number of lots. By order of Mr. Will Taylor.

Now on view. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

### Bromley, Kent.

Two days' CLEARANCE SALE of beautifully grown NURSERY STOCK, by order of Mr. G. Stidolph, who is retiring from business owing to declining health.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Bromley, Kent, close to the Railway Station, S.E.R., on THURSDAY and FRIDAY, November 5 and 6, at 12 o'Clock precisely each day, without reserve, the whole of the unusually well grown NURSERY STOCK, which is in excellent condition for removal, comprising thousands of thriving young Evergreens, including 1000 Common Laurels, 3000 Privet, evergreen and variegated Hollies, 2000 Aucubas, 1000 Laurel's of sorts, and 2200 Irish Ivies, 1000 Standard and other Roses, Standard Ornamental Trees, Deciduous Flowering Trees, Fruit Trees, and other Stock, fully described in Catalogue.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B. Messrs. PROTHEROE AND MORRIS beg to call attention to the above Stock, which is in remarkably fine condition, and worthy of an inspection.

### Friday Next

ODONTOGLOSSUM ALEXANDRÆ
" VEXILLARIUM, autumn-flowering variety.
" ROEZLII.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 6, the above and other valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

### Milford Nurseries, near Godalming, Surrey.

Three quarters of a mile from Milford, and one mile from the New Godalming Station.

TWO DAYS SALE of FIRST-CLASS NURSERY STOCK, in excellent condition for removal.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to SELL by AUCTION, on the Premises, The Milford Nurseries, near Godalming on TUESDAY and WEDNESDAY, November 10 and 11, at 12 o'Clock precisely each day, several acres of beautifully grown NURSERY STOCK, comprising 10,000 Specimen Border Shrubs in great variety; 2000 Aucubas, 2 to 4 feet; 12,000 Spruce Firs, 1½ to 3 feet; 3000 green and variegated Box, 1½ to 2½ feet; 700 Yews, 4 to 6 feet; 4500 Deciduous Trees, 1000 purple Lilacs, 2 to 4 feet; 5000 Privet, 3 to 5 feet; 10,000 Retinosporas of sorts, 1 to 2½ feet; 2000 Cupressus Lawsoniana lutea, 1000 Cupressus Lawsoniana, 1000 Pinus Strobus, 4 to 6 feet; 1400 Ferns, 1 to 2 feet; 1000 Pinus austriaca, 9 to 12 inches; 1200 ditto, 2 to 3 feet; 8000 Laurels, 1½ to 2½ feet; 6000 Standard Ornamental and Forest Trees in variety; 400 Poplars, Evergreen Oaks, 1000 Currants, 1000 Roses, hardy Heaths, Flowering Shrubs, Climbers, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had of the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

### Sutton, Surrey.

TWO DAYS' SALE of VALUABLE NURSERY STOCK and PLANTS, the Lease of the Old Nursery in Benhill Street, expiring at Lady Day next

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. Foster to SELL by AUCTION, on the Premises, the Mid-Surrey Nurseries, Sutton, Surrey (adjoining the Railway Station, and partly also in Benhill Street), on WEDNESDAY and THURSDAY, November 11 and 12, at 12 o'Clock precisely each day, a large assortment of well grown NURSERY STOCK in capital condition for removal, consisting of 3000 Roses of sorts, specimen Tea Roses in pots, large quantities of fine Conifers and Evergreens in great variety; 3000 Laurels of sorts; Gooseberries, Currants, Poplars, Limes, Thorns, Chestnuts; other Standard Ornamental Trees in quantity, hardy Climbers in pots; 150 Camellias and Azaleas, including several good specimens; Eucharis amazonica; large Chrysanthemums in bloom; and a quantity of Stove and Greenhouse Plants and Ferns in variety.

May be viewed one week prior to the Sale. Catalogues may be had at either of the Nurseries, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

### Leytonstone, Essex, E.

Two days' UNRESERVED SALE of beautifully grown NURSERY STOCK in great variety.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, on the Premises, The American and Filebrook Nurseries, adjoining the Railway Station, on THURSDAY and FRIDAY, November 12 and 13, at 12 o'Clock precisely each day.

Full particulars in Catalogues, which may be had of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

### Denham Road Nursery, near Uxbridge, Middlesex.
To GENTLEMEN, NURSERYMEN, and OTHERS.

MESSRS. NORMAN AND SON are directed by Mr. J. M. Jeffrey to SELL by AUCTION, on the Premises, as above, on MONDAY, November 2, at 11 for 12 o'Clock, an assortment of FRUIT TREES, consisting of Standard and Maiden Apples and Pears; Dwarf ROSES, sorts; CONIFERS in variety, viz., Retinospras, Cupressus, Junipers, Austrian Pines, extra transplanted, 2 feet to 4 feet high; finely grown YEWS, from 7 feet to 10 feet high; also Oval-leaved PRIVET, Tree BOX, and other EVERGREENS and DECIDUOUS TREES and SHRUBS, CURRANT BUSHES, RASPBERRY CANES, STRAWBERRY RUNNERS, CHRYSANTHEMUMS, &c.

May be viewed three days prior to the Sale, and Catalogues had at the Offices of Messrs. NORMAN AND SON, Uxbridge, Middlesex, and Denham and Beaconsfield, Bucks.

### Edinburgh.—Sale of Orchids, &c.
LYCASTE SKINNERI ALBA.
ZYGOPETALUM MACKAYI MACRANTHUM (true).
*Both expected to be in bloom.*

Drummond Brothers having resolved to give up the Florist and Nursery branch of their Business,

MR. ALEXANDER DOWELL will SELL by AUCTION, at his Rooms, 118, George Street, Edinburgh, on TUESDAY, November 3, at 12 o'Clock, a COLLECTION of ORCHIDS, &c., including above varieties; Dendrobium nobile Wallichianum, Cymbidium Lowianum, Phaius maculatus and Wallichii, Coelogyne cristata—Chatsworth variety, and many other choice plants.

Catalogues on application to DRUMMOND BROTHERS, Agricultural Seedsmen, 82, George Street, Edinburgh.

### Matthews' Nursery, Ewshot, near Farnham, Surrey.
(2 miles from Fleet and 3 miles form Farnham Stations, L. & S.W.R.)

MR. F. W. ABRAHAM has received instructions from Mr. G. Slingo to SELL by AUCTION, on the Premises as above, on FRIDAY, November 6, at 12 o'Clock precisely, the following valuable Stock, consisting of 150,000 Seedling Scotch FIR, 8000 QUICK, 50 0 Spanish CHESTNUT and ASH, 6000 ALDER, 55,000 BIRCH, 2 to 7 feet; 30,000 Scotch FIR, 2 to 3 feet; 17,000 BEECH, 2 to 3 feet; 50,000 Larch FIR, 2 to 4 feet; 1000 beautifully furnished Spruce FIR, 4 to 5 feet; 10, 00 Black Knis HOP PLANTS, 2,000 Fussels Goolings, 20,000 Cripe Green Bine, 10 000 White Bine; 5000 CURRANTS (Red, White, and Black), fine plants of Standard APPLES, PEARS, and PLUMS; quantities of English LAUREL, THUIAS, RHODODENDRONS, CUPRESSUS, VERONICA, and other useful stock, in capital condition for removal, the whole having been transplanted within two years.

May be viewed any day previous to the Sale, and Catalogues obtained at the Nursery, the Hotels in Farnham and Fleet; or of the Auctioneer and Valuer, Wcking, Surrey.

### Important Notice to Florists, Nurserymen, and OTHERS.

TO BE SOLD, by Private Treaty, a very Valuable Enclosure of LAND, containing about 5 Acres, well adapted for the above purposes, also Poultry Farm, Public Institution, or Building Purposes. It has a frontage to a high-road, rich gravel subsoil, only a short distance from Hamoton and Fulwell Railway Stations, S.W.R, and in order to effect an immediate sale will be sold a bargain.

Apply to Mr. J. EMBLETON, Suffolk House, New Hampton.

TO BE LET, or SOLD, a compact FLORIST'S NURSERY, having seven modern Houses fitted with Hot-water Apparatus, situated between a main road and a river in an excellent neighbourhood, close to a large town in the Midlands, with a good residence attached.

Apply to HARRISON AND SONS, Seed Growers, Leicester.

NURSERY, with Three Houses over 100 feet long each; recently built, comfortable, double-fronted COTTAGE. Lease nineteen years. Rent, £70. Acre of Ground. 8 miles from London. Parties with £350 apply.

C. H. COWLES, Woodford Green, Essex.

### To Market Gardeners and Others.
SEWAGE LAND to LET.

THE KETTERING LOCAL BOARD are prepared TO LET for a term of years from Christmas next THREE ACRES of Land adjoining the Town Sewerage Works at Kettering, Northamptonshire, and over which the effluent from the sewage tanks is passed. One acre of the Land will be planted with Osiers at the expense of the Board. Kettering has a population of about 14,000, and is situate on the main line of the Midland Railway, 75 miles from London.

Further particulars will be supplied by Mr. HENRY LAMB, Clerk of the Local Board, Kettering, to whom application for renting the Land may be forwarded.

TO LET, a Nobleman's fine Walled KITCHEN GARDEN, of 2 to 3 Acres, with four Vineries, Stovehouse, &c., and Gardener's Residence. Close to Station and County Town, about an hour from London, Brigh on, and Portsmou h.

Address OWNER, care of Steel & Jones, Advertising Agents, Spring Gardens, S.W.

HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue Free per post, of every Horticultural Requisite.

BENJAMIN FIELD, F.R.H.S., (Son-in-law and Successor to J. Kennard), Swan Place, Old Kent Road, London, S.E. Established 1854.

### To Landed Proprietors, &c.

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.

The President and Council of the Royal Horticultural Society invite all who are interested in the advancement of Horticulture and allied subjects, to meet them in the Music Room of the Inventions Exhibition on November 10, at 12.30 P.M., to confer with them on the subject of holding an INTERNATIONAL HORTICULTURAL EXHIBITION in London in 1887.

CRYSTAL PALACE.
Great Annual CHRYSANTHEMUM SHOW.
FRIDAY and SATURDAY, November 6 and 7.
For Schedules apply to
Mr. W. G. HEAD, Garden Superintendent.
Crystal Palace, S.E.

KINGSTON and SURBITON
CHRYSANTHEMUM SOCIETY.

The NINTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 10 and 11, when, in addition to valuable Money Prizes, the CHAMPION CHALLENGE VASE, value TWENTY-FIVE GUINEAS, will be offered. Entries Close November 5. Schedules and further information of
T. JACKSON, Hon. Sec.
Fife Road, Kingston-on-Thames.

THE DOME, BRIGHTON.—
BRIGHTON and HOVE CHRYSANTHEMUM SOCIETY'S THIRD ANNUAL SHOW, NOVEMBER 10 and 11. Band of the Coldstream Guards each Afternoon and Evening. Entries Close November 5. Schedules on application to
MARK LONGHURST.
87, Western Road, Brighton.

NATIONAL CHRYSANTHEMUM SOCIETY.
Royal Aquarium, Westminster, S.W.
GRAND EXHIBITION, NOVEMBER 11 and 12. Schedules (free) on application.
NOTICE.—Floral Committee Meetings at the Royal Aquarium, on November 11, 25; December 9; at 2.30 P.M., precisely. (Regulations see Schedule.)
WILLIAM HOLMES.
Frampton Park Nurseries, Hackney, London, E.
Natior al Chrysanthemum Catalogue, 6d. each.

HUDDERSFIELD CHRYSANTHEMUM SOCIETY.

The SECOND EXHIBITION will be held in the Town Hall, Huddersfield, on FRIDAY and SATURDAY, November 13 and 14. Entries Close on Friday, November 6. Schedules and Entry Forms may be obtained on application to
JOHN BELL, Hon. Sec.
Marsh, Huddersfield.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

The GRAND EXHIBITION of CHRYSANTHEMUMS, APPLES, PEARS, and other FRUITS, will open in St. James's Hall, Manchester, on TUESDAY, November 17. For Schedules, apply to the undersigned.
BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

DEVIZES CHRYSANTHEMUM SHOW will be held in the Corn Exchange, Devizes, on TUESDAY, November 17. Class 1, Six Large-flowered Single Plants, the 1st prize a Silver Cup and £3; and thirty-seven other Prizes for Plants and Cut Flowers. The Champion Challenge Cup will be offered. For Schedules apply to
THOS. KING, Devizes Castle.

BIRMINGHAM and MIDLAND COUNTIES' CHRYSANTHEMUM SOCIETY.

The TWENTY-FIFTH ANNUAL EXHIBITION of CHRYSANTHEMUMS, FRUITS, &c., will be held in the Town Hall, Birmingham, on WEDNESDA and THURSDAY, November 18 and 19, when the following Prizes for Cut Blooms will be offered:—

11.—48 Blooms of Chrysanthemums, 24 incurved and 24 Japanese, distinct; 1st, £10; 2d, £7; 3d, £4; 4th, £2.

12.—24 Blooms of Chrysanthemums, 12 incurved and 12 Japanese, distinct; 1st, £4; 2d, £2; 3d, £1.

13.—18 Blooms of Chrysanthemums, incurved, distinct; 1st, £3; 2d, £2; 3d, 1.

14.—12 Blooms of Chrysanthemums, Japanese, distinct; 1st, £2; 2d, £1; 3d, 10s.

15.—12 Blooms of Chrysanthemums, Anemone, not less than 6 varieties; 1st, £1; 2d, 15s.; 3d, 10s.

16.—12 Blooms of Chrysanthemums, 6 incurved and 6 Japanese, distinct, to be grown within 3 miles of Stephenson Place; 1st, £1 10s.; 2d, £1; 3d, 10s.

17.—24 Blooms of Chrysanthemums, 12 incurved and 12 Japanese, distinct varieties, to be grown within 12 miles of Stephenson Place; 1st, £3; 2d, £2; 3d, £1.

18.—6 Blooms of Chrysanthemums, reflexed varieties, distinct, to be grown within 12 miles of Stephenson Place; 1st, 10s.; 2d, 7s. 6d.; 5s.

Entries Close November 11. Schedules and Forms of Entry may be had on application to
J. HUGHES, Sec.
Northwood Villas, Metchley Lane, Werborne, Birmingham.

HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.

The SECOND ANNUAL GRAND EXHIBITION will be held in the Artillery Barracks, Hull, on THURSDAY and FRIDAY, November 19 and 20, when PRIZES to the value of ONE HUNDRED AND THIRTY POUNDS will be offered for CHRYSANTHEMUMS alone, including a 1st prize of £10 for forty-eight blooms, coupled with the Challenge Vase, value £15 15s.; 2d prize, £8; 3d prize, £5; 4th prize, £2.

Entries Close November 12. Schedules may be obtained from the Hon. Secs.,
R. FALCONER JAMESON, } Queen's Dock, Hull.
WM. HAWKSWORTH, }

WILLIAM CLAPHAM,
SHAW HEATH, STOCKPORT,
*LANDSCAPE GARDENER and ROCK ARTIST.*

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Alban's, where work can be seen. Tu'a formation, Sandstone, Natural Rockwork to suit any locality.

Limes—Limes—Limes.

JOHN PERKINS AND SON offer extra fine Standard LIMES, 12 to 14 feet, with straight stems and good heads, suitable for Avenue or Street Planting, 30s. per dozen. Billing Road Nurseries, Northampton.

NEW EUCHARIS.—A First-class Certificate was awarded on Tuesday the 13th inst., to the new EUCHARIS MASTERSII, by the Floral Committee of the Royal Horticultural Society. Price 5s. each, 2 guineas per doz.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Novelties.

CUPRESSUS LAWSONI ERECTA ALBA, novelty.
" " robusta, novelty. For description, see my Catalogue of spring, 1885.
" Silver Queen, novelty.
CHIONODOXA SARDENSIS, novelty, awarded a First-class Certificate in London, March 24, 1885.
SPIRÆA PALMATA ALBA, novelty, awarded a First-class Certificate in London, June 17, 1885.
THYMUS LANUGINOSUS FOL. VAR, novelty. For description see my Catalogue of spring, 1885.
Prices on application.
A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

Vines—Vines—Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. each.
The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL."

100 Herbaceous and Alpine Plants for 25s.

RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rockwork, which produce flowers, and render the garden attractive all through the year. New LIST of sixty-four pages free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Offer—Expiration of Lease.

ROSES, Best Dwarf H.P., 35s. per 100; fifty for 20s.
TEA ROSES, in 5-inch pots, all the leading varieties, including Niphetos, Maréchal Niel, and Grace Darling, 12s. per dozen.
NEW ROSES of 1885, in 48-pots, 12s. per dozen.
STANDARD ROSES, including Gloire de Dijon and Maréchal Niel, 12s. per dozen.

APPLE TREES, Standards, 18s. per doz.; Pyramids, 12s. doz.
" " Bush, 6s. per dozen; Dwarf-trained, 21s. per dozen.
PEARS, Standards, 18s. per dozen; Pyramids, 5 to 6 feet, 21s. per dozen.
" Dwarf-trained, 24s. per dozen.
PLUMS, Standards, 18s. per dozen; Trained, 24s. per dozen.
GOOSEBERRIES, Warrington and best leading sorts, 2s. 6d. per dozen, 18s. per 100.
CURRANTS, Red and Black, 2s. per dozen, 15s. per 100.
CONIFERS, for Lawn Planting, 21 good varieties, 12s. p. doz.
SHRUBS, Flowering, 4s. per dozen.
BOX, Tree, 8s. per dozen.
BAY, Sweet, 9s. to 18s. per dozen, 2 to 3 feet.
CHESTNUT, Scarlet, 5 to 10 feet, 8s. to 24s. per dozen.
IVIES, in sorts, Plain and Variegated, in pots, 9s. per dozen.
LAURELS, Portugal, Standards, 2 feet stems, good heads, 2s. 6d. each.
PYRUS MAULEI, fruit makes a delicious preserve, in pots, 9s. per dozen.
PRIVET, for Hedge Planting, 15s. to 25s. per 1000.
ASH, Weeping, stems 8 to 10 feet, 3s. 6d. each.
LABURNUMS, Standards, 5 to 6 feet, 3s. 6d. each.
ELMS, for Avenue Planting, 9 to 12 feet, 1s. 6d. each.
PLANES, best for Town Planting, 8 to 10 ft., 1s. 6d. each.
POPLARS, Black Italian, 8 to 12 ft., 6s. to 12s. per doz.
SYCAMORE, 8 to 10 feet, 6s. per dozen.
THORNS, Standard, flowering, 15s. per dozen.
*The best Evergreens for Seaside Planting.*
PINE, Austrian, 12 to 18 inches, 6s. per 100; 18 to 24 inches, 12s. 6d. per 100; 24 to 30 inches, 20s. per 100; 30 to 36 inches, 35s. per 100; 3 to 4 feet, 5s. per 100.
CUPRESSUS LAWSONIANA, in pots, 4 to 5 ft., 18s. per doz.
ESCALLONIA MACRANTHA, in pots, 6s. per dozen.
EUONYMUS, best green, 12 to 18 inches, 4s. per dozen; 18 to 24 inches, 5s. per dozen.
AMPELOPSIS VEITCHII, best for covering walls, 6s. to 9s. per dozen.
*Cash to accompany order.*
CATALOGUES post-free on application.
GARAWAY & CO., Durdham Down, Clifton, Bristol.

EIGHTY THOUSAND CLEMATIS in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may *now* be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

GREAT SALE of NURSERY STOCK,
Part of our Kingston Hill Ground having to be cleared by Christmas, we intend selling at the
KINGSTON HILL NURSERY,
During the months of
*OCTOBER AND NOVEMBER,*
All kinds of
DECIDUOUS AND EVERGREEN SHRUBS, FOREST TREES,
ROSES AND FRUIT TREES,
AT GREATLY REDUCED PRICES.
The Trade and Private Buyers will find this an excellent opportunity for Stocking.
T. JACKSON AND SON,
*NURSERIES, KINGSTON-ON-THAMES.*

JULES DE COCK, NURSERYMAN, Ghent, Belgium.—Purple BEECH (Fagus purpurea), true variety, 4-yr., 5s. per 100, 40s. per 1000. HYDRANGEA PANICULATA GRANDIFLORA, very good plants, 35s. per 100. SPIRÆA JAPONICA, beautiful clumps, £5 per 1000. AZALEA INDICA, with fine heads, with buds, £5, £6, £8, £10 per 100; A. MOLLIS, with buds, £2 and £3 per 100.

SPECIAL CHEAP OFFER. — PINES, Austrian, from 2 to 6 feet: LARCH, from 2 to 4 feet; FIR, Scotch, 12 to 24 inches; ELM, 3 to 4 feet, 4 to 5 feet; ASH, Common, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; BIRCH, 1½ to 2 feet, 2 to 3 feet, 7 to 8 feet, 8 to 10 feet; CHESTNUT, 1 to 2 feet: HORNBEAM, 2 to 3 feet, 3 to 4 feet, 7 to 8 feet, 8 to 10 feet; MAPLE, 1 to 10 feet: OAK, English, from 1 to 2 feet; POPLARS, Lombardy, 7 to 8 feet, 8 to 10 feet, 10 to 12 feet; POPLARS, American, 7 to 8 feet, 10 to 12 feet: PRIVET, Evergreen, 2 to 3 feet, 3 to 4 feet, good; PRIVET, Oval-leaf, 2 to 3 feet, 3 to 4 feet, fine; QUICK, THORN, 4, 5, and 6-yr., fine; SYCAMORES, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 8 to 9 feet; AUCUBAS, 2 to 3 feet; BERBERIS AQUIFOLIA, BOX, CUPRESSUS, various; ELDERS, Gold; CURRANTS, flowering; HOLLIES, in great variety; IVIES, in sorts; JUNIPERS, LABURNUMS, LAURELS, assorted; RHODODENDRONS, several hundred thousand of all sorts and sizes—beautiful stuff; RETINOSPORAS, YEWS, Common and Irish. For Price LIST, &c., apply to
ISAAC MATTHEWS AND SON, The Nurseries, Melton, Stoke-on-Trent.

LILIES and ORCHIDS are WM. GORDON'S specialties, and can nowhere be had better or cheaper. These are specially imported from all parts of the world, and largely grown to supply the wants of the Trade, to whom special offers will be made. WM. GORDON'S CATALOGUE has now been sent to all his known Customers, and will be forwarded on receipt of request to any one desirous of receiving a copy. DUTCH BULBS are supplied only in the first quality at the lowest possible prices. Lovers of ALPINE PLANTS can now have all their wants satisfied, as WM. GORDON has a Resident Collector in the Alps. First-class Certificate awarded this season for new Tree Pæonies. For these and other Novelties, all equally low in price, apply to
WM. GORDON, The Nurseries, Twickenham, Middlesex.

E. WILSON SERPELL, NURSERYMAN, &c., Plymouth, begs to offer the following Shrubs, &c, all well-rooted stuff; early orders solicited:—
CRYPTOMERIA ELEGANS, handsome stuff, 3 to 4 feet, 18s. per dozen.
PICEA NOBILIS, 12 to 24 inches, and 30 inches, well transplanted, 12s. to 24s. per dozen.
YEWS, Irish, well furnished, 3 to 4 feet, 18s. per dozen.
PINUS INSIGNIS, 2 to 3 feet, 18s. per dozen.
MYRTLES, large and small leaved, in pots, well established, 9s. per dozen.

Autumn Planting.

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.
The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

EARLY PEAS FOR SEED.
PRIZETAKERS,
WILLIAM THE FIRST,
KENTISH INVICTA,
All harvested without rain.
Price 10s. per Bushel. Special quotations for 40 Bushels and upwards. Apply,
C. RANDELL, Chadbury, near Evesham.

NOW READY, for Immediate Delivery, a selected Imported Clumps LILY OF THE VALLEY, DIELYTRA SPECTABILIS, and SPIRÆA (Hoteia) JAPONICA, also Single Crowns LILY OF THE VALLEY, and all Bulbs of best quality and carriage free.
Priced CATALOGUE (No. 303) sent on application.
JAMES DICKSON AND SONS, 108, Eastgate Street, Chester.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6d. per dozen plants, 12s. per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3s. 6d. per dozen plants, 7s. 6d. per dozen clumps.
Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 2½d., free.
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

Giants, Kings, Queens, and Emperors.

THE MONSTERS among DAFFODILS.
"Extraordinary fine specimens from Ireland. Veritable Giants."—Vide *Gardeners' Chronicle*, April 25, 1885.
Six big weighty Bulbs, for present planting, post-free, 1s. Two of each, 1s. 6d.—viz., Horsfield's King, Backhouse's Emperor and Empress, Peerless, Bath Town, Trumpet Maximus, and Hartland's Golden Dragon. The above with a copy of "Hartland's Original Little Book for 1885," post-free, with orders above 10s. 6d.—W. BAYLOR HARTLAND, Special Daffodil Grower, Seed Warehouse, 24, Patrick Street, Cork.

To Nurserymen, Seedsmen, and Florists.

DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, 3, Victoria Warehouses, Gosselin Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract:—
From the *Gardeners' Chronicle and Agricultural Gazette*, London:—"MONSTER BROCCOLI.—A few days since, Mr. C. Kessell, of The Cottage, Penzance, who has been a Broccoli grower for upwards of half a century, and was one of the first to get the Early Broccoli of Cornwall into the London and Northern Markets, cut two monster Broccoli, which together weighed 50lb. They were the sort known as Pontey's Late White Wilcove. The huge stalks at the smelting-house had to be called into requisition to ascertain the weight of the plants."
Retail price, 2s. 6d. per ounce. Special quotations to the Trade. Apply to
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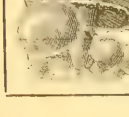
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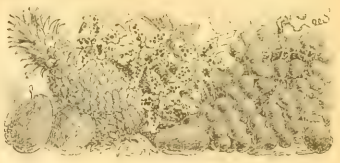
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THE

# Gardeners' Chronicle.

*SATURDAY, OCTOBER 31, 1885.*

## ASHRIDGE PARK.

THE history of this noble and delightful residence may commence here with the Princess Elizabeth, who received a present of Ashridge from her brother, Edward VI., and waited here the doubtful course of events during the reign of Mary. On her accession Elizabeth bestowed Ashridge on one of her deserving followers, and in the next reign it was granted to Sir Thomas Egerton, Lord Ellesmere, whose descendant, the Duke of Bridgewater, executed those famous works in the cutting of canals, which have been commemorated in a monument on the hill. By the will of the seventh Earl of Bridgewater, Lord Alford succeeded to Ashridge, on condition of his obtaining a higher grade in the peerage than that of Earl within five years. Fate deprived him of the opportunity, for he died within a year, and then followed litigation, with a decision ultimately against Lord Alford's son, and in favour of his brother, the Hon. Charles Henry Cust.

I found it a very pleasant walk of 4 miles from the railway station of Tring to the house. At the little village of Aldbury, which looks old, like its name, you begin to climb the chalk hill which will presently bring you to the high level of Ashridge Park, at an altitude where the noble park which surrounds the house could hardly be expected to produce any timber but Beech if the chalk rock were not pretty well capped with good soil. Beech is the prevailing tree, and early in July, when the sun glints among the graceful branches that overspread yon steep path, what a lovely tree it is. I steered for the monument at the top of the hill, which passengers by the North-Western Railway must have seen high up among the trees opposite Tring Station. At the base of this commemorative and characteristic tower is the inscription, "In honour of Francis, 3d Duke of Bridgewater, Father of Inland Navigation." Hard by is a cottage with its number on the door (25), and when I asked for 24 and 26 these neighbouring cottages were reported each a mile distant in opposite directions. This is a delightful site in summer, but solitary in winter, when the squirrels are asleep and the birds silent or gone elsewhere. The wind howls here sometimes, but the masses of Beech around break its fury, and the cottage is always snug, though sometimes it must be solitary. There were other visitors at the time of my call, for around the tower is a large level piece of turf shaded with great trees, where several parties were encamped under the spreading branches, and some festive vans lately laden with people and provisions were drawn up under the thicket.

The monument seems to link the outer world with the great house. You see it from everywhere, and the house, secluded as it is amidst its thousand acres of wooded park, from nowhere, till you reach the top of the hill, where I was told, "You will see the house from the monument at the end of the avenue;" and

there it lay, just 1¾ mile distant, a very extensive pile with a flag flying from the tower.

An avenue always forms a grand approach, and this is a very first-rate avenue, composed of Beech trees of great size, and planted wide apart. It passes first through common land, covered with Beech, and then through the park proper, which is fenced for deer, but in such a way that the continuity of the open glade is unbroken from tower to house, or from house to tower. I walked slowly through the park and avenue, marking on either hand much interesting life to examine and admire—hinds with their calves, and does with their young, making off among the bracken, or standing with head uplifted facing and watching the intruder, with squirrels running and hopping over the turf, trailing their inconsequential tails, or bearing them aloft curling over their backs, and running up the trees on taking the alarm. A great herd of deer and cattle was gathered about the north front of the house, where, notwithstanding the absence at the moment of the head gardener, Mr. Lowe, I found a polite guide through even the most private grounds and conservatories.

The original conventual buildings consisted of a grand old pile, comprising church, cloisters, and residence, including Queen Elizabeth's bed and two pairs of her shoes, which are still preserved with other relics on the spot. But the old house was damaged by the Roundheads in the Civil War, and was in consequence replaced by another, built by the seventh Earl of Bridgewater, the author of the unfortunate will which has been referred to. His house stands partly in Bucks, partly in Herts, and is remarkable for the extent of the ground it covers in two counties —the chapel, great conservatory, and principal apartments being in Bucks, the stable and offices in Herts. There is an old riddle, "Why is Buckinghamshire like an ox-goad?" the answer being because it runs into Oxon (oxen) and Herts (hurts). Earl Brownlow's splendid house stands at the very point of penetration. It is a very extensive building including a massive turreted tower and a tall and beautiful spire surmounting the chapel, and a varied line, if I may quote Sir Bernard Burke, of "towers and battlements, arched doorways, mullione windows, corbels, and machicolations," with a fine Gothic porch and a frontage from the eastern angle to the western point, more than 1000 feet in length.

The ornamental gardens are on the south and east, so that the various parts of the dwelling communicate directly with the flower-gardens and lawns, and with fifty-six acres of ornamental shrubberies. In fact, the grounds are delightful, and I do not believe that even the landscape gardening of Olympus—that seat and residence of the gods—could boast of such exquisite turf and such charming clumps of native and imported shrubs.

A greenhouse and orangery are associated with some of the departments in the eastern wing, and the dining-room opens into a great conservatory, beautifully constructed and planted, leading by its opposite door into the south side of the ante-chapel. The chapel itself, with Gothic ceiling and rich painted windows, is very fine. But we are here concerned with the outside rather than the inside of this delightful residence, and that being so, we must ascend the central tower for the sake of the wide view of the Home Counties; over the Surrey hills to a distance of forty miles; over Windsor Forest, and great part of Bucks north of the Chilterns; and over the counties of Beds and Herts in the east; as far as the distant hills of Warwickshire in the north-west.

My description of the grounds and gardens must be brief. There are twenty-eight gardeners devoted entirely to the ornamental department, to the care of the houses, the extensive flower gardens and shrubberies. These gardens are admirably sheltered by a grand bank of lofty Limes on the north side near the house, which is itself, from its extent, a capital break-wind. The site is high, but the shelter so perfect that all kinds of shrubs flourish on the lawn, where clumps, mainly composed of Rhododendrons and of good old sorts of shrubs, such as Bay, Box and Yew, with many others, were planted some time since with such artful arrangement that the general effect of the shrubbery is as natural as possible, though it is, of course, entirely the result of superior landscape gardening. The quality of the soil is excellent, as you may see by the large size and luxuriance of the Oaks, Sweet Chestnuts, and Cedars of Lebanon, as well as by the healthy and rapid growth of two long rows of Deodar Cedars, which have been planted, in recent years, in an added portion of the extensive grounds furthest from the house. Two old Ash trees on the lawn are the sole survivors of a number of trees of the same kind from which the place took its name of Ashridge.

The principal flower garden covers the space between some of the best rooms of the house and the Lime trees that have been noticed, and in such a position with the dense mass of green foliage in the background, the beds, which are numerous, can hardly be too gorgeous. This is called the Italian garden. The lesser and more retired space known as the French garden is a very charming enclosure, fenced on all sides with banks of evergreen Oaks, or walls covered with creepers or trained shrubs, including Camellias and Pomegranates, with pale green narrow leaves. Trellised arcades, festooned with Roses and Honeysuckles, run round two sides of this garden, and another side is bounded by the stable, which was formerly a nunnery, it is said, and which might now be a palace, having ornamental dormer windows in the roof and a covered walk or cloister, formed by the projection of the upper part of the building, and running the whole length of the garden. Some of the beds are edged with Box and filled with the accustomed bedding plants, others are filled with Clematis trained level with the ground, and next the cloister is a long border fitted with all sorts of things, more pleasing than rare, Maize and Marigold—to name two out of twenty—and hives of bees in the middle. Passing through this garden, a gravel walk, having a most substantial flint wall on the right covered thick with Ivy, Virginian Creeper, and Roses, leads to a tropical fernery, having the "old garden," which is sequestered and enclosed, in front of it. Ficus repens is a good plant for covering walls, but in the fernery here it not only covers the walls with close fitting vegetable tapestry, but it hangs down gracefully in thick festoons from rods and pillars. The most remarkable of the specimen plants in this house, passing by the Tree Ferns, is Calocasia odora, which grows by the tank in the centre with leaves 4 feet long borne on footstalks 8 feet in length. Another ornament in this warm quarter belongs to the animated world, being a trumpet bird brought by Lord Brownlow from Jamaica, and I think if it were generally known what a gentle, affectionate, pretty creature the trumpet bird is it would be more often seen in tropical houses. It greeted me very kindly, walking close up in a most elegant manner, and allowing me to stroke its head and back without wincing, and its disposition is so good that it seems to have quite forgiven the macaw in the cage hanging above, though that cruel bird with the terrible bill caught it near the bars one day and tore off its upper mandible.

Among things notable at Ashridge are the creepers, and on the outside walls of the fernery, which is not glass to the ground, I noticed the great leaves of an Aristolochia, and the dainty foliage of the variegated Vine, besides small-leaved Ivies and other things. I should have said that the conservatory into which the dining-room opens is nobly furnished with suitable plants, Palms, three or four varieties of Passion-flower, Bignonia speciosa, Cobœa scandens dependent from above; and, among other things, the Stantonia latifolia, which was figured in the *Gardeners' Chronicle* when in blossom. Both the stove and the Orchid-house contain much that should be reported if space would permit, and perhaps it may "show vilely" in me, like Prince Henry's taste for small beef, that I could not prevent the eye from wandering sometimes, in walking through these houses, away from the most rare and beautiful plants to the draped walls, covered as they are with the Ficus just named and with Adiantum cuneatum and A. pubescens. In spite of our admiration of things that are rare and novel, it is pleasing to reflect that many of the most beautiful decorative plants are easily obtained and common to all. *H. E.*

# New Garden Plants.

## MORMODES DAYANUM, *n. sp.**

ONCE more a new Mormodes. Flowers equal to those of Mormodes Wendlandi, ochre-coloured, with red longitudinal lines inside on the sepals and petals. Lip revolute, so that the outside of both halves touch one another. Its shape is triangular, with an inflexed short apiculus in the middle. There is a round excavation in front of the apiculus, and a linear one at the base. The whole of the lip is white, and of ivory texture. It is distinct in the angle it makes from its neighbours. The upper and lateral borders of the lip stand nearly under a right angle. The small apiculate column is white also. It is named in honour of the excellent Mr. Day, who, when seeing the plant at Mr. Bull's, immediately recognised its remarkable features. *H. G. Rchb. f.*

## CATASETUM (MONACHANTHUS) GLAUCOGLOSSUM, *n. typ.*†

A new Mexican Catasetum (sex?). Who would have expected it? What may be the characters of other sex? It was kindly sent me by Mr. W. Bull. One might have thought of a certain affinity with Catasetum Russelianum, but that is a Monachanthus itself. I have a very strong deflexed peduncle before me bearing nine ascending flowers, surpassing those of Catasetum Russelianum, Lindl., but of very strong texture. Sepals ligulate, acute, brown. Petals much larger, oblong, acute, glaucous with rows of brown spots. Lip with a depressed rounded sac and a triangular mouth, quite glaucous, with some brown spots inside. There are two glaucous transverse tricrenate calli in the interior and two broad callous lines running parallel to the point of the lip. Column whitish, with purple longitudinal lines under the fovea. *H. G. Rchb. f.*

## CATTLEYA PORPHYROPHLEBIA, *n. hyb., Veitch.*

A new English Orchid, a hybrid between Cattleya intermedia and superba. "The habit of the plant is dwarf, resembling superba. It has four bulbs with one leaf, and one, the last, is two-leaved. Bulbs 1 to 4 inches long. Leaves 2½ to 6 inches long, and 1 to 2 inches wide. The plant is only four years old." So much was written by Mr. Harry Veitch, who kindly sent a flower. It might be compared to a very large flower of Cattleya intermedia, but has a lip of exquisite beauty. This has the anterior lobe

* *Mormodes Dayanum*, n. sp. Racemo pauciflore; floribus magnitudine illorum Mormodes Wendlandi, Rchb. f.; sepalis tepalisque linearilanceolis, labello explanato triangulo cum apiculo in medio margine superiori, lateribus reflexis angulum rectum efficientibus, apiculo deflexo, fovea impressa subrotunda juxta apiculum, linea impressa ad basin unguis.—Sepala et tepala flava lineis rubris. Labellum album. *H. G. Rchb. f.*

† *Catasetum (Monachanthus) glaucoglossum*, nov. typ.—Racemo pauciflore (deflexo), floribus ascendentibus sepalis ligulatis acutis; tepalis late oblongis acutis, labello calceiformi extrorsum late depresso oblongo rotundato costato, antrorsum triangulo acuto concavo, callis geminis abruptis tricrenatis, lineis antepositis geminis crassis elevatis apicem versus; columna ecirrosa androclinio membranaceo marginato. E Mexico, mp. cel. mercator Londinensis, W. Bull. *H. G. Rchb. f.*

nearly obcordate, undulate, toothletted, purple, with much darker purple stripes and markings which is very charming. The remainder of the lip, disc, and side lobes are paler in colour. Disc whitish verging to the lightest pallid sulphur. Borders light purple. Mid-line with four purple lines and short purple lines proceeding towards the angles on each side. Column white, with some purple dashes. The rather broad sepals and petals are rose-coloured. There would appear not to be *embarras de richesse*, but *de pauvreté*. It may be frequently demanded, but will be seldom obtained. *H. G. Rchb. f.*

ONCIDIUM OCTHODES AND O. CHRYSORNIS.

It is asserted at p. 522, that these two species are the same. My opinion is at variance with this. My eleven wild grown specimens of Oncidium chrysornis all show lips of nearly the same breadth both at the base and at the top, as the width at the base is not much greater, and is now and then equal to that of the top. The callus has the anterior and some side lobules bidentate. The column is exceedingly slender, and has its wings cuneate at the base. The zig-zag twigs of the inflorescence are very short and strong, quite resembling those of Oncidium pyramidale and O. chrysopyramis.

What I have seen of Oncidium octhodes is much thinner in its branches, and the whole inflorescence is always much shorter. It is far more decidedly a "Basilata" Oncidium, the anterior part of the lip being considerably narrower. The callus has simply filiform or conical warts. The column is far thicker, and its wings are sessile, not cuneate at the base.

The "pyramidale" group is very difficult, as in the majority of the Oncidia. If some of the English lovers of Orchids had time and space to sow some species, it would be a great boon for scientific knowledge, to learn something about the constancy of features by the observation of large numbers. *H. G. Rchb. f.*

## SOIL FERTILISERS.

THE following is the summing up of the main points in a lecture upon this subject delivered by Professor G. C. Caldwell, Ithaca, New York, before the Massachusetts Horticultural Society :—

1. That if the elements needed for the food of the gardener's or horticulturist's crops cannot be obtained in sufficient quantity from stable manure, or other animal waste, they can be procured in the trade in unlimited quantity, and in every degree of availability depending on different grades of solubility, and in the greatest variety of mixtures, so as to suit any whim or fancy of crop or crop grower.

2. That profitable crop-growing can be carried on, for many years at least, with these commercial fertilisers alone.

3. That the most evident distinction between stable manure and commercial fertilisers, and the distinction upon which we should, therefore, naturally base an explanation of the greater reliability of the former, is its large proportion of vegetable matter, or humus-forming material, of which commercial fertilisers contain practically none.

4. That soils contain, in a difficultly soluble condition, and therefore not easily fed upon by the crops, large supplies of all the needed elements of plant food.

5. That humus, through its decay in the soil, furnishes carbonic acid, among other solvent agents; and this carbonic acid appears to play an important part in the nourishment of crops by bringing the native, insoluble stock of plant food within their easy reach.

6. That even if we add water-soluble plant food to the soil it becomes largely insoluble before the crop can feed upon it, or needs it; therefore soluble plant food added to the soil in commercial fertilisers needs also the help of the humus, finally, for its solution.

7. That plant food in most animal and vegetable residues used as manures costs much less than in commercial manures.

8. That, in spite of the disadvantages which, under some conditions, attend the use of commercial fertilisers, they are, nevertheless, a very important and necessary help in crop growing.

9. That in using these fertilisers the wisest course appears to be to make one's own mixtures of the raw materials, as well for securing a better manure as for economy in first cost.

## TORREYA CALIFORNICA,

THE STINKING CEDAR, OR CALIFORNIAN NUTMEG.

THIS is described as a tree 60 to 80 feet high, with a trunk attaining 3 feet in diameter, and inhabiting the western slopes of the Sierra Nevada of California, from the Mendocino County to Zulare County. During my visit to California I had not the good fortune to see a good specimen of this most interesting tree. The only place in which I remember to have met with it was in the gorge of the Yosemite Valley by the rocky stream, some miles below the hotels, where it formed a scraggy tree 20 feet high, or thereabouts, growing interspersed with Pinus contorta and various deciduous shrubs. The accompanying is a copy of a sketch which I made of the best specimen I could find, and which represents anything but an attractive appearance (fig. 125). The colour of the foliage was bright green, and the large green Plum-like fruits, produced in abundance, had a very singular appearance. The wood is described as light, soft, not very



FIG. 125.—TORREYA CALIFORNICA
(From a sketch by Sir Joseph Hooker.)

strong, very close grained, compact, susceptible of a fine polish, and very durable in contact with the soil. It had all the appearance of a slow growing tree, and this is its character in cultivation at Kew. The genus is one of the most interesting amongst Conifers, on account of the rarity and remarkable distribution of the few species it is known to contain. There are, besides the Californian, the T. taxifolia, Arnott (Savin or Stinking Cedar of Florida), confined to swamps in the neighbourhood of Bristol in Western Florida, and very rare there; T. grandis, Fortune, of North China; and T. nucifera, Siebold and Zuccarini, of Japan. *J. D. Hooker.*

MIDDLE TEMPLE CHRYSANTHEMUMS. — This year London will be poorer by one attraction, and this at a season when such a loss is most felt, by the discontinuance of the pleasant exhibition of the Chrysanthemums in the Middle Temple Gardens. These plants have always been well grown, and have afforded considerable enjoyment to many lovers of the flowers in London pent. The prohibition is only temporary probably, the well assorted collection remaining still under the charge of Mr. Wright, the gardener.

## VARIETIES OF PEARS.

As the present is the time to compare notes, perhaps a *resumé* of results, noticed from trees growing in a heavy brick earth resting on chalk in the northern division of Suffolk, will not be an unnecessary harping on a familiar theme. People are too apt to consider a subject threadbare when they observe a good deal of information in newspapers about any one topic. The case may be, however, that the humble-minded will be intensely interested with each week's quota of information, that a few unsuspected facts will pierce the mail of the stiff-necked dogmatist, and that the canny will have unquestionable evidence from the pens of more than one witness on which to base chops, changes, and additions. Ardent cultivators have been so often bitten in trying new varieties that it is small wonder their enthusiasm dwindles. A very good pomologist, whose name you give as one of the contributors to your "Pear numbers," once told me that he had been made a *corpus vile* by a nurseryman, whereon to experiment with imported Pears, which he, the nurseryman, had not even seen fruited. Such experience, attained *à force de peine et sueurs*, cannot but interest even those whom experience has made conceited. Therefore, it is to be hoped that your columns will still for some time longer contain more or less of Pear lore; in order that your issues for this month and the next may be a permanent *thesaurus* of information, worth any number of scattered notes and articles.

The collection which is to furnish the main part of these notes would be considered a large one, and contained trees trained in most of the usual ways. Walls facing east, west, and south were entirely devoted to Pears; the fruit came finest from the east and south walls, a fact which shows Mr. Wildsmith's dictum *re* west walls not to be universally true. The south wall was chiefly devoted to what are generally considered tender Pears, which for the most part were on the Pear stock. Varieties that were utter failures owing to inferior quality were Tyson, Monchallard, Beurrés Six, Millet, and de Bolwiller, Beurré de l'Assomption (trained as a cordon), Octave Lachambre, Mary Guise, amd Walter Scott. The following six late Pears were decidedly good, and ought to be far more widely grown :—Iris Grégoire, Olivier de Serres, Prince Napoleon, Duchesse de Bordeaux, Nouvelle Fulvie, and Mariette de Millepieds. Both Messrs. Rivers and Bunyard praise up Nouvelle Fulvie, but have no mention of the last-named. Unlike Bezi Mai and others, it is a melting, very late Pear of large size and good outward favour, shrivelling but very little, if gathered late. The tree is very feeble, but bears freely enough, and would need, as it deserves, a south wall. Other rare varieties, among them Madame André Leroy and Catherine Lambre, failed to produce fruit during the six years I had cognisance of this collection.

Turning to the west walls. The following were set down as of little or no value with their then environment :—Madame Loriol de Barny, Général de Lourmel, Beurrés Berkmans, de Jonghe, Baltet père, and St. Michel Archange. The last four were free bearers, but the quality of the fruit was very inferior. Failures as standards were Souvenir d'Esperen, General Todtleben, Comte de Paris, White Doyenné, and Naquette. The latter is strongly recommended in the *Orchardist*, but if Mr Scott supplied the right article it was a miserable little green thing, all rottenness within when scarcely turned colour. As a market Pear it was belauded. Poor consumers! Good Pears in this regard are Fertility, the old Croft Castle, and that luscious Pear Suffolk Thorn, which is quite equal to Comte de Lamy, and a prodigious bearer. Very good Pears, which are not as yet household words, were Doyenné Robin, Princess Mary, Nouveau Poiteau, Beurré Auguste Benoist, Fondante de Cuerne, Brockworth Park, Triomphe de Vienne, Madame Treyve, and Clapp's Favourite.

No 1 is a rounded medium-sized Pear, of most delicious flavour, affording a succession of fruit throughout October and November; it forms a prolific standard on the Pear stock. Nos. 3 and 4 were on Quince stocks, and were trained to a south wall. Nouveau Poiteau is a large fruit, which, like Beurré Diel, soon has its day. The same criticism applies to No. 5, but both are such good fruits as to deserve cultivation. Marie Benoist I have always found of poor quality, although it is most highly spoken of

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by many growers. Brockworth Park is described in Mr. Rivers' list as ripening in November. The Brockworth Park usually grown ripens with Beurré d'Amanlis, and comes to great perfection on an east wall, as also do Bonné Louise, Fondante d'Automne, Williams' Bon Chrétien, Doyenné Boussoch, Marie Louise, Beurré Diel, Beurré Giffard, and Beurré Clairgeau. Excellent varieties for bush or pyramidal growth on the Quince are Emile d'Heyst, Délices d'Hardenpont, Pitmaston Duchess, and André Desportes. *C. A. M. C.*

# Florists' Flowers.

## THE CHRYSANTHEMUM.

These plants have now been placed inside, and the attention they require up to the time the flowers open is merely to keep them sufficiently supplied with manure-water at the roots, but it must not be too strong, and should be given at each alternate watering only. The first traces of mildew should be destroyed with flowers of sulphur dusted over it. I find the best way is to dust the plants well before they are taken indoors, and when this is done the mildew does not attack them. The specimen plants intended for exhibition must have the flowers supported with sticks. Exhibitors err on the side of over anxiety to get their plants dwarf, forgetting that an unnatural dwarfness is as objectionable to tasteful people as drawn up plants with a yard of stems at the base devoid of leaves. Plants grown in the form of dwarf bushes, with the least possible twisting of the stems, and at the same time furnished with healthy green leaves, are the most likely to hold a high position at exhibitions. The individual flowers should be of large size, and stand out boldly above the foliage. The pompon varieties require very little in the way of sticks; the main stems should be tied out, and a few stoutish sticks should be inserted in the pots, to hold them in their place. Most of the tying and training should be done before the flowers open; if this is left too late the plants show the effect of the training. Large blooms have a considerable tendency to damp off, single petals decay, and others speedily follow; unless these are removed as soon as perceived the whole flower will go to pieces. Care must be taken to keep the atmosphere of the house as dry as possible, and this is done by avoiding spilling any water about the paths when applying water to the roots of the plants; a very common error is to fill the pots too full when watering them, so that the water runs over and evaporates from the outsides of the pots and from the stages.

## THE HYACINTH.

It will now be time to pot the main collection of bulbs. I pot each bulb separately in a 5 or 6 inch pot, using a rich open compost. In potting leave the crown of the bulbs only above the surface of the soil. Place a little white sand under the bulbs, and a small portion over the crowns. When they are potted plunge them out-of-doors in an open place. I stand the pots on a bottom of ashes trodden hard, and cover the pots with cocoa-nut fibre refuse. This material is the cheapest and best for the purpose; it is quite dry, and maintains an equable temperature round the bulbs. From the large number of new varieties introduced during the last few years I continue to select some that are improvements. Instead of only growing one straw or yellow coloured variety, as I did for several years, two more of this colour have been added to our collection—Bird of Paradise and King of Yellows. They are distinct from each other, and from Ida, the old variety alluded to. The bulbs of King of Yellows are not very large, but when it is in full vigour it is the best yellow. Bird of Paradise is a distinct and very fine variety, it has a long spike and well formed bells, but a few of those at the top of the spikes are greenish, which does not add to its beauty. Souvenir de J. H. Veen I have added again this year, it is the best dark purple-blue variety. Princess Mary of Cambridge greatly improves the pale blue section, and Grand Maître is also very distinct, forming a handsome spike. Amongst red varieties we have tried several new kinds; King of the Reds promised well, but after trying it last year I left it out, and went back to Vuurbaak for the best dark red or crimson; this variety, Garibaldi, Linnæus, and Albert Victor are the best dark red varieties. Fabiola and Von Schiller are the best pale pink kinds. Gigantea forms an immense spike in this colour, but the bells are too small to be effective. The double varieties seem to be at a discount, except Koh-i-noor, which has semi-double bells; no others are grown for exhibition. I always grow a few of the very best, such as Lord Wellington, Blocksberg, Garrick, Laurens Koster, and Van Speyk.

## EARLY FLOWERING TULIPS.

These receive very much the same treatment as Hyacinths, except that three bulbs are planted in one pot. The potting soil is the same. Those who exhibit have to be careful to grow a goodly number of the very best sorts only, and after many years' careful selection recommend the following as the best to grow in pots:—Fabiola, Joost van Vondel, Joost van Vondel (white), Keizer Kroon, the best single Tulip; Ophir d'Or, Pottebakker, white; Proserpine, Queen of the Violets, Van der Vere, Vermilion Brilliant, and Rose Aplatie.

## EARLY FLOWERING GLADIOLUS.

I have grown a number of these in pots this year, and found them very useful, both as cut flowers and for decorative purposes. The first of the group is G. Colvillus albus. It is a hardy free flowering variety of the species, which can be grown to flower from April to the end of June. The varieties of G. ramosus are also very beautiful They do not require much pot-room. Half-a-dozen bulbs may be potted in a 6-inch pot. As they have been at rest for some time they may be potted now, but those I flowered this year were not potted until January. Some few late varieties were also grown in pots, such as Gloire de Versailles and the distinct and handsome species, G. Saundersii. The pots containing the bulbs should be placed in a cold frame, and be plunged in cocoa-nut fibre refuse. They are placed under the glass lights to protect them from too much rain. They would not be injured by a little frost, that is, the plunging material might be frozen, but the frost ought not to penetrate to the bulbs.

## THE HOLLYHOCK.

Last season I determined to leave the plants out-of-doors in the same position in which they flowered. The winter was so mild that they passed through it without any injury whatever. It would not be quite safe to adopt this plan unless plants of the same varieties were grown in pots from cuttings struck during the spring and autumn. Those plants that have been propagated in that way, and are now in small pots, probably pot-bound, should now be repotted into 4-inch pots, which we call small 48's. They may be placed in a cold frame, and will require no further attention except to be moderately supplied with water, and be repotted again in March to be planted out in April or early in May. The old plants must also be taken up now from the open ground and be repotted in as small pots as the roots can be nicely got into. Light and not over-rich soil should be used to pot with. It is too late now to put in cuttings taken from the old plants. They may produce roots if managed with great care, but it is better to allow them to remain on the plants until the month of January, when they form roots very freely in a propagating house. Any eyes or cuttings that were put in late in the season, and have not yet formed roots, may be aided by a little heat, either by placing them in a gentle hotbed or a forcing-house where the heat is not very great. Seedlings produced from seeds sown as soon as ripe in September may be pricked out in boxes, and if covered with hand-lights, or frame-lights, to keep them growing during the winter, they may be planted out in the spring, and will flower strongly in September following. I prefer to keep the seed until the end of May. The plants get quite strong by the end of the season, if planted out in July where they are to flower.

## THE DAHLIA.

The plants were sadly injured by frost towards the end of September, and no good flowers have been produced since. The ground is now saturated with rain, and we will be glad if it is drier before frosts come sufficient to blacken them completely. Pot-roots may now be stored under the greenhouse stage, or in a vinery from which the Grapes have been cut. The object is to keep them dry—or, at least, comparatively dry—at the roots until the leaves become yellow, when the stems may be cut through an inch or two above the ground. A sure sign of a revival of the interest in Dahlia culture is the fact that several growers are taking to saving seeds to raise new and improved varieties. The best way to obtain a stock of single varieties is to sow a packet of seeds early in the year. The produce will give a plentiful supply of flowering plants the same season. The ordinary show and fancy kinds may be treated in the same way. The seed-pods are now ready to be cut from the plants; cut them with a portion of stem attached, and hang them up in a dry place; when the seed turns brown pull the pods to pieces, and spread the seeds out on paper to dry thoroughly. When the old plants have been quite killed by the frost they should be cut over, and the tubers carefully dug up. Stand them with the crowns downward for a day, to allow the moisture to thoroughly drain out of the hollow stems. They may then be stored away in a dry place for the winter.

## TULIPS.

The ground ought now to be in preparation to plant out these; if it was not dug or trenched before the wet weather set in it will not answer to interfere with the ground before it is quite dry. The planting out may be done any time during November; our bulbs were not planted out last season until well into December, and we had a good and early display. Few growers will take the pains to provide a bed for Tulips as if a permanent Vine border was intended. They do well in any rich garden soil, and in planting them draw a deep drill, as for Peas. Press the bulbs in firmly with the fingers; place a pinch of dry white sand over each bulb; level in the drill, and the operation of planting is complete. It must be done in fine weather. When will the Tulip come in for its fair share of popular favour? It is rather amusing to read sometimes of the praise of flaming scarlet Poppies, while the late flowering Tulips with the colours and delicate markings are ignored.

## OCTOBER FLOWERING CHRYSANTHEMUMS.

A box of blooms cut from this important section has been forwarded to us by a correspondent. They comprise Japanese and pompon varieties, some of which begin to flower early in September, and with a few that flower later carry the blooming period on to the time when the ordinary kinds are in their full blaze of beauty. These early flowering kinds are quite as deserving of attention as the best of the late varieties. Madame C. Desgrange is one of the most valuable of the Japanese kinds. A bed of it in the Kew gardens, near the Water Lily house, was a very prominent feature in September. With a bloom of this variety there is also one of G. Wermig, said to be a yellow sport from it, and as it doubtless possesses the same good qualities of free blooming and good habit, will be as valuable for planting out in beds, though not so valuable for cutting. Mandarin is a most promising early Japanese variety; it has narrow slightly twisted petals, creamy-white in colour, shaded with pale rose; flowers large and full. Isadore Feral, rosy-lilac, yellowish centre. Colibri, a distinct full flower of a rich crimson colour. The pompon section is well represented:—Frederick Pelé, reddish-crimson; Madeline Davis, yellow; Précocité, bright yellow, the best of its colour; Madame Piccol, rosy-purple, a pleasing variety; Illustration, pretty pale pink. Of the smaller pompon varieties, La Petite Marie, a charming variety with full pure white flowers, is one of the best; Pomponium, yellow, with a suffusion of reddish-brown, a full flower; Petite Mignon, a pretty white variety, the outer petals tinged rose; Surprise, rose, white centre, a compact flower, with the petals slightly fimbriated. The small flowered varieties are very useful as cut flowers; they ought to be grown out-of-doors freely, and a number of them should be cultivated in pots. Our greenhouses and conservatories are not too well supplied with flowering plants during the autumn months. They must be cultivated in the same way as the later flowering kinds, and are best grown in the form of bushes, to be freely supplied with manure-water after the buds are set. *J. Douglas.*

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A New British Butterfly. — The Rev. O. Piccard, Cambridge, has lately recorded the capture of a "Bluetail," (Lysaena argiades), in Dorsetshire. This is a common South European species, but has not before been noticed in this country.

## THE PEAR.

The Pear has been cultivated from the remotest ages, and has always been a favourite fruit, and when we consider that by a judicious selection and careful cultivation a daily supply of ripe fruit can be had at the table for seven months in succession, surely it deserves our special attention.

The Pear prefers a good loam, that inclined to be stiff rather than otherwise, and a good depth of soil; should the subsoil be clay drainage is indispensably necessary. In the South of England and in favourable localities in the Midland Counties, fruit for the months of August, September, and October may and ought to be grown in orchards, either as standards, pyramids, or dwarf trees; this gives the walls for the growth of the best winter kinds, which require greater warmth to ripen them. Seeing that the Pear when ripe keeps but a short time, those who are provided with a good many kinds are the most likely to keep up a daily supply without intermission, and to do this (unless the establishment is large) small trees are preferable to large ones, and to enable one to do so nurserymen keep a supply of trees grafted on the Quince stock. If the soil is suitable nothing can possibly do better than trees so worked; the Quince being a slow grower restricts the growth of the scion, and the tree is thus immediately thrown into bearing, and his is also especially recommended in exposed situations where lofty trees would be exposed to high winds, when the autumn gales would shake the crop from the boughs and bruise the fruit, rendering it worthless. Where the situation is sheltered and the soil light, we prefer the free stock, but in this case root-pruning will always have to be resorted to, to keep the tree from growing too rampant — root-pruning one side one year and the opposite side the year following. Great injury is very often caused to the trees by annually digging with spades and cutting off the surface roots, and thus encouraging the lower ones to take the lead and find their way into the subsoil. We have found it better to give a coating of half-decayed leaves, or anything to encourage surface roots, and to leave the ground undug; in the case of fruit tree borders one is obliged to dig and crop, but then it can, and ought to be done with forks, which will not cut the roots. Large Pears should never be planted in orchards; the sway of the branches by the wind breaks off the fruit before they are ripe; large kinds, such as Beurré Diel, Brookworth Park, General Tod leben, Gansel's Bergamot, Doyenné du Comice, Beurré Clairgeau, Doyenné Boussoch, Pitmaston Duchess, should be planted on west walls: the last mentioned Pear is a chance seedling, raised at Pitmaston, and certainly one of our best autumn kinds. Therefore plant orchards with small sorts; in favourable springs more fruit will set than is desirable, so that thinning is necessary; and it often happens that in the case of a very heavy crop the tree will need every encouragement to mature its fruit. In a case of this kind carefully remove the surface soil, and give the tree a thorough soaking of semi-liquid manure soon after midsummer, and return the soil, well mulching the surface. This will enable the tree to carry its crop to perfect maturity, and is a better way than the indiscriminate application of manure in winter, which, in the case of a light crop following, will cause the trees to grow vigorously—a most undesirable thing—which will take years to correct. The Pear is usually trained horizontally on walls, and one oftentimes sees several kinds grafted on one tree. I do not recommend this plan, because a strong growing kind will take the lead at the expense of its fellows. On all our piers on the garden walls here we plant upright double cordons, and nothing can possibly do better, as every year they yield a quantity of fruit, and great variety to the dessert.

### Gathering the Fruit.

The season of gathering commences with the month of August, and during that and the two following months hardly a day passes—certainly not a week—without some kind or kinds being gathered, and every one of which ought to be got before they are quite ripe; place the hand under the fruit, and raise it up to a right angle, and it will, if getting towards maturity, part from the shoot; but even then the finest ought only to be gathered; a few days afterwards the remainder may be gathered and kept, placing them apart in the fruit-room. This prolongs the season; but at last the time comes for the general ingathering of the winter kinds; the last half of October will be early enough, and sometimes, according to the weather, the first week of November. As a rule, late Pears are gathered too soon, and weeks afterwards one finds a stray fruit on the tree, missed at gathering time, quite plump, while those in the fruit-room are either ripe or shrivelling.

### The Fruit room.

And this leads me to speak of that building. It should have a north aspect, should be built with hollow walls, a double ceiling, ventilators on the roof, and shutters to keep the light out, and a regular temperature, which will possibly stand at 50° at first, but will gradually fall to 40°. On no account carry any diseased fruit into the store-house, nor suffer any that are decaying to remain there. In the dull winter months, when the various kinds approach maturity, by removing them into a place having a warmer temperature the flavour will be improved; but if it was necessary to be careful in gathering the fruit, it is especially so in the fruit-room, as the least thing will bruise them; therefore handle them most carefully. One can easily tell when the fruit is ripe by pressing it at the base of the stalk. If the flesh gives way under the pressure it is ready.

### Sorts.

This article will not be complete without a list of the approved kinds; I therefore give one, and confine myself to those which we grow successfully here, remarking that the garden is 400 feet above the sea-level, rather exposed, the soil stiff loam resting on marl; and I shall, as near as I can, place them in the order of their ripening. Your readers will remark that several well-known names are left out: I have done so purposely, because we have had to discard them here.

A list of fifty Pears arranged in the order of their ripening:—Beacon, Doyenné d'Eté, St. Swithin, Citron des Carmes, Beurré Giffard, Clapp's Favourite, Jargonelle, Souvenir du Congrès, Williams' Bon Chrétien, Beurré d'Amanlis, Flemish Beauty, Doyenné Boussoch, Louise Bonne of Jersey, Seckle, Forelle, Marie Louise, Pitmaston Duchess, Beurré Hardy, Comte de Lamy, Beurré Bosc, Belle Julie, Thompson's Beurré Diel, Beurré Superfin, Zepherin Grégoire, Van Mons' Léon le Clerc, British Queen, Napoleon, Passe Colmar, Doyenné du Comice, Knight's Monarch, Bezi St. Waast, Winter Nelis, Glou Morçeau, Chaumontel, L'Inconnue, Marie Benoist, Bergamotte d'Esperen, Josephine de Malines, Jean de Witte, Olivier des Serres, Passe Crassane, Bezi Mai, Duchesse de Bordeaux, Ne Plus Meuris, Beurré de Jonghe, Madame Millet, Van de Weyer Bates, Doyenné d' Alençon, and Directeur Alphand. The last twenty we grow on a south wall; they ripen better and keep longer, and right well will they repay any one for the extra attention and best situation. *J. Rust, Eridge Castle, Sussex.*

# The Apiary.

### REVERSIBLE FRAMES.

In my first article on the apiary I mentioned the fact that lately some people, principally Americans, had been reversing their frames, and in some instances their hives, in order to encourage the bees to go into the supers. I have given the matter a great deal of attention this summer. I always keep two or three hives on purpose to try experiments, and though this causes a little loss to the pocket I am always pleased with the knowledge thus gained. It is universally known amongst bee-keepers that occasionally bees will not enter the supers, and will hang idly about or swarm rather than do so, and as this is very vexing when there is plenty of honey about various ways of overcoming the difficulty have been tried. A 'cute man—but I am sure I do not know who the first 'cute man was—thought that as bees in a state of Nature or in a straw hive store honey at the top of the comb and brood at the bottom, that if the hive or the frames were reversed at the proper time the bees would carry the honey up above the brood and into the supers. Experiments have proved that this is the case. It has also another advantage. It has often been found that in extracting honey the comb breaks because it is not fastened at the bottom, but if the comb is reversed the bees fasten it all the way round, and the frame and the comb form a firm slab, and is not at all likely to break. Hitherto, reversible frames have been rather expensive. I do not say that is the fault of the hivemakers. If you want anything good you must give a little more for it. But to the bees. I could draw a plan here of a frame I have devised, which consists of four pieces of wood only, and which does equally well whichever way up, but I am afraid the Editor cannot spare me the room for it. It will fit into any hive made the orthodox size, that is $14\frac{1}{2}$ by $8\frac{1}{2}$ inches. The frame does not hang on the sides, but rests on a little ledge $\frac{3}{8}$ inch high. This ledge is fastened to each side of the hive on the floor, and allows the bees to pass under. I have no time to make these frames in numbers or supply them, but if any one wishes to possess and make them for himself I have no objection to send a single sample for 9*d.* to cover postage and production. The best time to reverse frames is when hives are ready for supering, but care and judgment must be exercised. *Agites.*

## NOTES FROM THE PEAR-GROWING DISTRICTS.

(*Continued from p.* 554.)

Herts.—In reply to your inquiry, we believe the annexed to be the best sorts of Pears for this district. The situation is low, the soil is heavy and moist:—

Twenty Best Pears for Growing on the Quince Stock.

| | |
|---|---|
| Beurré Diel | Beurré de Stenckmans |
| Bon Chrétien (Williams') | Bayonne de Mello |
| Doyenne Blanc | Beurré Superfin |
| Glou Morçeau | Bergamotte d'Esperen |
| Passe Colmar | Conseiller de la Cour |
| Louise Bonne of Jersey | Doyenné du Comice |
| Beurré de Capiaumont | Beurré d'Anjou |
| Fondante d'Automne | ,, Bachelier |
| Beurré d'Amanlis | General Todtleben |
| Doyenné Boussoch | Winter Nelis |

Twelve Best Pears for Growing on the Pear Stock.

| | |
|---|---|
| Gratioli | Flemish Beauty |
| Bellissime d'Hiver (stewing) | Thompson's |
| Marie Louise | Beurré d'Amanlis |
| Hacon's Incomparable | ,, Hardy |
| Catalac (stewing) | Josephine de Malines |
| Beurré Rance | Grégoire Fondbillon |

*W. Paul & Son, Waltham Cross.*

Worcestershire.—We find the following Pears succeed in our district on either Quince or Pear stock:—

| | |
|---|---|
| Doyenné d'Eté | Louise Bonne of Jersey |
| Jargonelle | Maréchal de la Cour |
| Souvenir du Congrès | Doyenné du Comice |
| Williams' Bon Chrétien | Bergamotte d'Esperen |
| Albertine | Soldat d'Esperen |
| Autumn Bergamot | Winter Nelis |
| Beurré d'Amanlis | Zepherin Grégoire |
| ,, Clairgeau | Marie Louise |
| ,, Diel | Olivier des Serres |
| Duchesse d'Angoulême | Catillac |

On Pear Stock.

| | |
|---|---|
| Gratioli of Jersey | Pitmaston Duchesse d'Angoulême |
| Beurré d'Aremberg | |
| Heads | Swan's Egg |
| Marie Louise | Josephine de Malines |
| Passe Colmar | Uvedale's St Germain |

*Richard Smith & Co., Worcester.*

Yorkshire.—The undermentioned varieties are indicated by Messrs. Backhouse & Sons, York, as being those which are most suited to the climate of that part of the country:—

Suitable to be Planted as Standards for Orchards

| | |
|---|---|
| Aston Town | Green Chisel |
| Autumn Bergamot | Jargonelle |
| Beurré d'Amanlis | Red Doyenné |
| ,, de Capiaumont | Vicar of Winkfield |
| Doyenné d'Eté | Bon Chretien (Williams') |
| Beurré (Backhouse's) | Winter Windsor |
| Heads | |

The following may also be planted as standards on warm soils:—Beurré Diel, Marie Louise, Clapp's Favourite, Louise Bonne of Jersey, Hacon's Incomparable, Gratioli of Jersey.

Plan for Espaliers or Pyramids on Pear or Quince Stocks.

| | |
|---|---|
| Baronne de Mello | Glou Morçeau |
| Bergamotte d'Esperen | Jargonelle |
| Beurré (Backhouse's) | Gratioli of Jersey |
| ,, d'Aremberg | Jules d'Airoles |
| Calvert d'Eté | Louise Bonne of Jersey |
| Clapp's Favourite | Fondante d'Automne |
| Doyenné Boussoch | Madame Treyve |
| ,, du Comice | Marie Louise d'Uccle |
| Durandeau | Pitmaston Duchess |
| Hacon's Incomparable | Winter Nelis |
| General Todtleben | |

The following are suitable for espaliers or pyramids on the Pear stock, but do not succeed on the

Quince :—Beurré Superfin, B. Bachelier, B. Easter, Marie Louise, Seckle, Triomphe de Jodoigne. All the foregoing are suitable for dessert : the following are stewing Pears :—Bellissime d'hiver, Catillac, Uvedal's St. Germain, Vicar of Wihkfield, Winter Franc Real.

## The Rosery.

### MARÉCHAL NIEL ROSE.

IN the *Gardeners' Chronicle* of September 26 I saw a notice of this splendid Rose being in bloom for the third time this year! Will the gentleman who so well manages this more-than-once-difficult-to-bloom-Rose, give us less fortunate growers his system of management? By so doing, I am sure all lovers of this charming Rose will thank him. The season seems favourable for the production of good ripe Rose seed. Will some kind raiser of seedlings publish in the *Gardeners' Chronicle* the best way of preserving and sowing the seed, and raising seedlings? I sow a large quantity in the open ground, generally in the month of March, but I seldom get more than two or three to germinate. *John Hopper.*

### NEW SEEDLING PEDIGREE ROSES.

Recently in the *Gardeners' Chronicle* your excellent correspondent, "Wild Rose," whose contributions are always so interesting, lamented the paucity of new Roses. Since then I have been on a holiday trip, and visited among the rest the spiritedly conducted nurseries of Alexander Dickson & Sons, at Newtownards, Co. Down. I am sure you and he will be pleased to hear that one of Mr. Dickson's sons has taken to raising seedling Roses, and proceeds, in doing so, on the principle of Mr. Bennett in hybridising "pedigree" varieties. He has been fairly successful, for out of one thousand seedlings at least six promise to be well deserving of being sent out and put in commerce. Appended is a description of this remarkable half dozen :—

*H.P., Earl of Dufferin.*—Rich velvety fiery crimson ; base of petals beautifully shaded with maroon ; flowers large and of great substance ; growth very vigorous, and a profuse flowerer. This is most highly perfumed.

*H.P. Marquis of Londonderry.* — Colour rich brilliant velvety crimson, shaded with dark maroon ; petals large and very smooth ; flowers large, full, and most perfect ; growth vigorous, with very distinct dark green foliage.

*Lady Helen Stewart.* — Colour brilliant carmine ; petals large and very thick ; growth vigorous, and flowering in great abundance.

*Tea Miss Ethel Brownlow.*—This is a thoroughly distinct Rose, not the least characteristic feature being its great lasting properties. The flowers are produced on stiff footstalks, which show them to great perfection ; the colour is difficult to describe, being a crushed Strawberry colour. The form resembles a Catherine Mermet.

*Tea Lady Castlereagh.*—Flower of great substance ; colour silvery-pink, shaded with salmon ; growth vigorous and very proliferous.

*Tea Mrs. Hamilton Gell.*—Colour white, faintly edged with pink ; petals smooth and beautiful ; very pretty.

First-class Certificates have been awarded to Earl Dufferin and Miss Ethel Brownlow at Dublin, Glasgow, and Edinburgh. *M.*

### PRUNING ROSES.

The following observations have been contributed by a French grower of Roses, and are drawn from facts of which he has taken notice :—1. If in the spring some Rose bushes are pruned, and, on the contrary, some others are allowed to remain without any suppression of the branches at all, the latter will come into bloom about a fortnight before the others ; their flowers will be more numerous, and at the same time less beautiful. 2. If some Rose bushes are completely pruned, and upon some others are left only some twigs, these latter will have the same advance in the time of bloom. 3. If two Rose bushes are pruned alike, one at the end of September and the other in February, the one pruned in autumn will flower first. 4. If, towards the middle of September, the branches of a Rose bush are laid down horizontally, and those of another bush in exactly the same condition are left in the natural position, and in the spring both be pruned alike, the one with the branches laid down will bloom first. 5. In pruning Rose bushes before vegetation starts, that is to say, in February, bloom on them will be obtained in advance of that which will appear on bushes pruned later. 6. Pinching the young shoots, as they start on bushes after pruning, retards blooming very much. In this case the pinching should be done before the flower-buds appear, or when the young shoots have only three or four leaves. *The Farm.*

## PEARS AND JUNIPERS.

AN HEREDITARY legislator in his place in the House of Peers on an occasion of ceremony, and the same individual stalking stags in the Highlands, though one and the same, is very different in appearance, in "habit" and in "habits." A Guardsman in a London drawing-room at one time, and at another in the thick of the fight in the Soudan or elsewhere, presents similar diversity. A stag-beetle was at one time a grub, and so we might pile up illustration upon illustration if it were necessary. Our only object now is to show that the condition named "heteroecismal"—a fearful word, for which we should be glad of a short Saxon equivalent—is not so very isolated and peculiar a phenomenon as at first sight

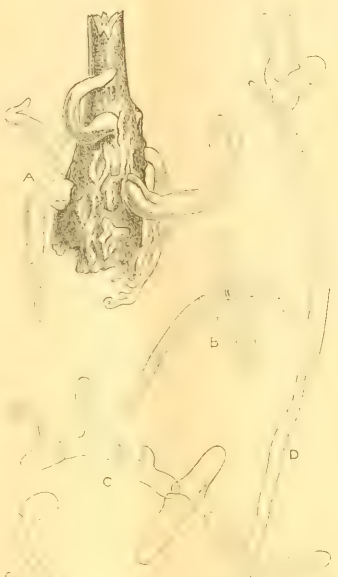



FIG. 126.—GYMNOSPORANGIUM JUNIPERI, YELLOW FLESHY FUNGUS ON JUNIPER.

A, General appearance of the fungus (slightly enlarged) ; B, In process of growth ; C, Shows two sporidia ; D, Basidium with two fertile spicules and one undeveloped ; E, Sporidia in course of germination, magnified 460 diameters ; F, Sporidia, after Tulasne in *Ann. Sc. Nat.*, 1854, p. 145.

it appears to be, and that at any rate the strangeness of the thing ought by no means to prejudice us. When a country bumpkin, or even a practical farmer, tells us that there is a connection between Berberry bushes and corn mildew it is not unnatural either that little heed should be paid to the remark, or that it should be met with ridicule—very wrong, no doubt, but inevitable so long as observations are not recorded in a form likely to command attention. But when a botanist not only asserts a thing but actually demonstrates it, as it were, before our eyes, then, indeed, his assertions demand and receive much more respectful consideration. De Bary, twenty years ago, set this particular matter at rest. He sowed, with all due precautions, to avoid error and fallacy, the spores (called teleutospores) of the corn mildew, Puccinia graminis, on the leaves of the Berberry, and after a short time the Æcidium or cluster-cup of the Berberry was duly produced. Others have done the same thing since, and however great may be the uncertainty in particular cases, there is now no doubt whatever of the fact that "heteroicism" does occur. The same plant growing parasitically under different conditions assumes a different form and appearance, according to the particular plant upon which it grows, something as the ermine-robed peer in Westminster evolves into a tweed-beclad sportsman in the Highlands. Of course the analogy is not complete, but if it serve to make matters comprehensible it will answer the purpose.

A good deal has been written in our own columns upon this subject by Mr. Plowright and others (see *Gardeners' Chronicle*, October 28, 1882, p. 553), and our special object in alluding to the matter now is to point out that a relationship and course of development similar to that of the Wheat mildew and Berberry fungus above-mentioned takes place in the case of the Pear ; perhaps we shall be safer to say is alleged to take place, for we have not ourselves proved it, though we are pretty well convinced of the fact by the authority of others. The allegation is that the yellow slimy fungus on the Juniper (Podisoma juniperi) (fig. 126), becomes, when its spores are transplanted on to the Pear or Hawthorn, the fungus known as Rœstelia lacerata, (fig. 127). At the place above cited Mr. Plowright gives an account of the successful results of his experiments, which, however, are questioned by others. We give illustrations of both fungi, that our readers may note the great difference in their appearance. Similarly the dark orange fungus on the Savine (Podisoma Sabini) is said to produce the fungus known as Rœstelia cancellata which grows on Pear leaves ; while Gymnosporangium juniperi is said to produce the form known as Rœstelia cornuta.

We do not care to enter further into detail on the point just now. Some part of the history has been proved, other portions are still the subject of dispute, and while some have succeeded, others, among whom may be mentioned Professor Farlow, have been less fortunate, though the experiments of the latter observer, if not conclusive, at least afford strong presumptive evidence. It will be enough for us now simply to say to those who intend to plant Pears—keep them away from Juniper bushes!

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Concluded from p.* 455.)

ACROSS DARTMOOR IN THE RAIN. — Unfortunately time did not permit our visiting the gardens of Sir B. Wrey, at Holne Chase, where there are fine Araucarias and other trees, and equally unfortunately for us the morning of the day destined for our longest tramp was more than threatening. From distant Blackator, a hill to the north of South Brent, we saw shower after shower come dashing up the Dart valley over Ashburton ; but, with a too optimist faith in the doctrine that "when things are at the worst they will mend," we burnt our boats—*i. e.*, we sent our baggage on by rail to Tavistock, and starting in a lucid interval we crossed the rubicon—*i. e.*, the Dart—at Holne Bridge, so that though it then began to pour, retreat was not to be thought of, and we had the prospect of a good twenty-mile tramp over Dartmoor in characteristically "local" weather. And here I may say a word as to Devonshire distances. Measured along the road as laid down on the most accurate of Ordnance maps a distance is one thing, whilst, were it measured on a relief-map it would be quite another. As most Devonshire roads, and all those on Dartmoor, are either up-hill or down-hill, it is not a fair representation of distance upon them to state the distance between the tops of any two hills as if it were a straight line ; for, as Euclid says, "Any two sides of a triangle are greater than the third side." Hence, despite any taunts as to the effects of saturated garments in heightening one's ideas of distance, I am free to maintain, guide-books notwithstanding, that the main road from Ashburton to Tavistock is considerably over 20 miles. At Holne Bridge, five pointed arches crossed a stream, now so diminished as not to fill the central channel ; but the well rounded "pot-holes," hollowed by pebbles worked by its eddies, in the slate rock at either side, far from the present water-level, pointed to the far greater volume of the stream in winter. On the previous afternoon we had measured the stream as 14 feet wide and 5 feet deep, and its velocity at one-third of a mile per hour, whilst abundant evidence proved it to be sometimes 8 feet deeper, and three times as wide. It is by overlooking

proofs of such a winter volume that summer tourists are unable to realise the power of such streams as those of South Devon to move the boulders that often lie, far from their parent rock, in the lower reaches of the river. Whilst watching the trout darting through the amber stream as it flowed between its dark grey rocky banks, and the eels moving slowly over the stones, we had also been able to note the formation of stalactites under the limestone bridge and the rootcaps on the many fibres that the Alders sent out into the water, but now the long walk before us and the driving rain prevented our noting much of Nature or of landscape. We did not, therefore, verify the statement that Osmunda grows wild near New Bridge, nor could we stop long to enjoy this part of the Dart with the last view of Buckland and Holne Chase. Leaving what is perhaps the oldest, but certainly not the most interesting of bridges over the Dart, and passing some painfully inharmonious modern architecture, some stiff "collar-work" brought us past that most unpretending roadside beer-house, the "Tavistock Arms," and on to the bleakest



FIG. 127.—LICHENS TESTELIA LACERATA ON HAWTHORN. (SEE P. 5[illegible]5).

part of the moor, where not even a wall protected us from the fury of the gale, and our only source of comfort was in the good quality of the road. The Devil's-bit Scabious and the Eyebright occurred by the roadside, from which, on either hand, the ground was covered mainly by the dwarf Furze (Ulex nanus) in full blossom, there being a striking scarcity of Erica. Hill after hill of no great steepness of slope, but each crowned with a curious artificial-looking heap of bare grey masses of granite, their slopes strewn with similar masses among the Ling, or divided by a monotonous network of stone wall, the whole overhung by a cold and cloudy sky, gave the moor a sameness that soon palled upon the senses. A geologist could gather some consolation in the fine specimens of granites in the walls, in which, when wetted, the large crystals of felspar are so far better seen than when they are dry; Wahlenbergia, rejoicing in the wet by the side of each streamlet that ran off the moor, might somewhat cheer the botanist, and the archæologist had to keep his eyes open for hut-circles or other "prehistorics;" but it cannot be denied that in wind and rain a smaller sample of Dartmoor would content most people. Birds we saw none, though snipe do occur, and we thought we saw herons' nests at Dartsmeet, and though in several sheltered nooks, as at the same spot, there are trees, mostly Firs, Dartmoor having a mean elevation of 1500 feet enjoys too bleak a climate for Oats even to ripen with regularity. Being, however, mostly in enclosures for cattle pasturage much of the moor is bleak without appearing wild, whilst its "tors" never have the true mountainous character of the peaks of the Lake district. As we descended a steep gradient to the point where the East Dart comes tumbling down into the West Dart, past a clump of Firs, we traced on the slopes of Yar-Tor several "hut-circles," those circular mounds with rows of transported stones of doubtful purpose and of still more doubtful age. It is easy to talk of Druids, but if they worshipped in woods the 130,000 acres of the "royal forest of Dartmoor" would apparently have afforded them but little shelter, and in this land of granite any age of rude civilisation would naturally be a "stone age."

Disappointed of an inn after an eight-mile walk, after a wet *al fresco* luncheon—for we were not without "pocket pistols"—as we ascended the hill above Dartsmeet we noticed Cuscuta epithymum for the first time, parasitical upon Calluna; and here, too, we first encountered evidence of that remarkable process of "weathering" of granite to which the tors of the moor and much of the fertile soil of the valleys alike owe their origin. In a roadside cutting, apparently in solid granite, in which each crystal was separately distinguishable, we found that the hammer could readily dig deeply into what was, in fact, a mere compact gravel, extending from 6 to 8 feet from the surface. In other similar pits this disintegrated granite formed regular cup-shaped "pipes," cutting through the jointing of the harder rock precisely as do the clay pipes through the bedding of the chalk or ragstone of south-east England.

The excess of moisture that occasioned us so much discomfort was pleasing to the large black slugs (Arion ater) that were not uncommon on the moor, and happening upon our first patch of Sphagnum we found upon it the lovely little pink cups of the bog Pimpernel (Anagallis tenella), a plant which, with its congener, A. arvensis, has been accidentally omitted from the list of Devonshire plants by Mr. Britten in White's *Directory*.

Our pleasure in the distant sight of the Princetown Convict Prison, telling of the near approach of our journey's end, was tempered by the long stretch of road reaching to a distant horizon that apparently lay between us and the "Saracen's Head," a halfway house which, according to our calculations, we ought already to have reached. That hospitable hostelry, however, renders itself doubly acceptable by being hidden at the foot of so steep a descent that even its chimney-smoke is not visible to the way-worn traveller until he is all but at its door. After a most welcome rest and meal, and a glance through one of the most amusing of the many amusing visitors' books of the district, our way lay for more than a mile through the fields tilled by the labour of the Princetown convicts. Considering what this labour has effected between stone walls, and how granite weathers on the hill-tops and Firs grow in the valleys, I could not help thinking that it might be an experiment worth trying to see if this "royal forest" might not be made a forest indeed, True it is that the weird "Wistman's Wood," which we had not time to visit, has remained for ages a grove of Oaks so gnarled, stunted, and lichen grown as to be thought "uncanny;" true also, no doubt, that even in a coniferous plantation the keen winds would kill an outer belt of trees; but even then the remainder might well prove remunerative not only as timber but as shelter both for cattle and for arable land.

Passing out of sight of the unromantic, warehouse-like pile of buildings that constitutes Her Majesty's prison, and descending towards the hamlet of Merrivale Bridge, we caught sight of what may literally be termed the keystone of a most interesting assemblage of megalithic remains, viz., a "long-stone," or slab of granite placed on end, standing fully 12 feet above the ground. It is some 300 yards from the road and double that distance from the point where the Princetown road curls into sight towards the extensive granite quarries of Hessary Tor. On approaching it one cannot fail to notice near at hand a circle, some 60 feet across, formed by more than a dozen small stones inclined inwards, and from this the eye soon falls upon a smaller circle or cairn, in the centre of which is a hole for a missing long-stone. These circles are nearer to the road than is the long-stone, but do not seem definitely placed with reference to it or to the very perfect stone avenue close by. This last consists of two double rows of stones, 2 feet apart, with about 50 feet between them, extending for about a quarter of a mile, and ending in small stone circles, near one of which is a fallen cromlech. There can be little doubt that these megalithic memorials were monumental rather than sacrificial or ritualistic, and that, with Stonehenge and Avebury, Wayland Smith's Forge, and Kit's Coty-house, they are the work of that ingenious Mongolian race, using polished stone implements, that preceded the Kelt with his Druidical Nature-worship; but, standing by this long avenue and these stone circles, I could not help thinking that Mr. Roach Smith and that school of antiquarians who turn for an explanation of anything to the pages of Vitruvius or Pliny, might make out a good case in support of a theory that this was nothing but a Roman arena where perchance "Brutus of Troy" held chariot races like those his great-grandfather established, *teste* Virgil, in honour of Anchises. Admit the theory, and the *spina*, *metæ* and stand for the *editor spectaculi* could easily be identified.

*(To be continued.)*

# The Herbaceous Border.

## CAMPANULA PYRAMIDALIS.

THE merits of this well-known ornamental flower can certainly never be overrated, for whether as a hardy, profuse bloomer that requires but a small amount of attention, or for beauty of individual flowers, it is well worthy of being placed in the first rank. At no time, however, is it so effective as during the autumn months when covered with its truly blue or white flowers, and which offer such a rich contrast to the then prevailing yellow of so many of our late flowering subjects. The white variety is, perhaps, not generally so tall as the type, with lighter green, smaller-sized leaves. These Campanulas delight in a rich, deep loam, and abundant,

though not stagnant moisture, and are readily increased from seed or by division.

ANEMONE HONORINE JOUBERT

is very effective, the large white flowers, fully 2 inches across, being borne in the richest profusion on stout stems that often reach 4 feet in height. This is one of the very best autumn-flowering plants known, for from August till November, cut as you will, there is a succession of the pure white and highly attractive blooms. It is one of those plants that should be in every collection, large or small; but it is well to remember that in proportion as the soil in which the plants are growing is fertile or otherwise, so will be the size and production of the flowers. From this it must not, however, be inferred that the plant is dainty as regards choice of soil, for it certainly is not; any good loam suiting it well, but all the better if well enriched by an annual coating of thoroughly decomposed vegetable or animal refuse. The fine deep rose flowers of the true A. japonica contrast well with the snowy-white of the latter form.

HARPALIUM RIGIDUM

is a really good, handsome, and distinct Sunflower-like plant that from early August till the November frosts has, perhaps, no equal in the herbaceous border. Bold, well grown specimens crowned with their glistening golden-yellow flowers—the individual flowers often measuring as much as 5 inches across—are indeed a treat which even the most unobservant cannot but appreciate. It is of the easiest culture, any fairly rich garden soil meeting its requirements, more particularly where the plants are well exposed to sunshine, and where they never suffer from want of nor excess of moisture. Not only as an ornamental border plant but for cutting purposes this is one of the most useful occupants of our autumn borders.

HELIANTHUS MULTIFLORUS AND H. MULTIFLORUS FL.-PL.

are just now at their best, and although introduced to this country at a very early date, 1597 I think, yet public favour has never waned in appreciation of their value, and certainly the most select collection of herbaceous plants would be rendered all the more select for their extension. The single flowered form is perhaps the most uncommon, and by not a few persons preferred to the double, being, perhaps, more floriferous and usually of taller stature. The double one is, however, a most effective plant, and one that we can recommend for general culture, being easily managed, a profuse bloomer, and of great value as a lasting cut flower in boxes and vases. Good cultivation is amply repaid by these Sunflowers, for in size, beauty of foliage, and form of flowers there is a vast difference between well fed, and half starved specimens.

Other desirable species are H. californicus, with a stiff, majestic habit and bright yellow flowers with conspicuous black centres; H. argyrophyllus, an annual species of merit; and H. rigidus, a rough leaved species, with fine, deep golden flowers, with a rich dark centre. For cutting purposes this latter deserves extensive culture.

THE MICHAELMAS DAISIES.

Of these there are many fine and worthy forms, but, on the other hand, just as many worthless and insignificant flowered species that are not worth growing as garden plants. As being more or less distinct from each other, showy in flowers, and therefore most suitable for the general cultivator, we would specially recommend the following:—Aster turbinellus, with large mauve flowers; A. bessarabicus, a very fine form of the well-known A. amellus, but with larger and brighter flowers: this is a very desirable plant; A. tanacetifolius, which, although of only biennial duration, is distinct in several points from all other Michaelmas Daisies: it is of dwarf habit, with deeply divided Pansy-like foliage, and an abundance of delicate mauve-lilac flowers; A. ibericus, with pleasing purplish-blue flowers, and of remarkably compact growth; and A. Curtisi, a new but very bright and attractive species, with bright purple flowers. They are easily grown in any good rich loam with partial shade, and may, in most cases, be readily enough propagated by division of the roots after the flowering season. *A. D. Webster.*

SAXIFRAGA STRACHEYI.

M. Mathieu, of Charlottenburg, has, says the *Garten Zeitung*, succeeded in raising several crossed seedlings from this species, hybridised with S. thysanoides ciliaris, cordifolia, &c.

## PEARS IN WILTS.

IN view of the Pear Conference which is now being held at Chiswick, a few remarks on the varieties which are found to yield the best and in every way most satisfactory results, will not only be opportune but may be of use to planters who are readers of the *Gardeners' Chronicle*. The varieties which do best here are—taking them in the order in which the fruit is fit for table—Doyenné d'Eté, small, handsome, and excellent fruit, ripening towards the end of July; Citron des Carmes, fruit small, juicy, and well flavoured, ripe in August; Jargonelle, one of the best August Pears, fruit large and of excellent flavour, a good cropper, but owing to its want of keeping properties one tree of it is sufficient in most gardens—two, one on a south and the other on a west wall, may be useful in large gardens; Beurré d'Amanlis, a first-rate September Pear, fruit large, melting, and richly flavoured; the tree is also a good grower and cropper. The same remark applies to Beurré de l'Assomption and that well-known variety, Williams' Bon Chrétien. Succeeding these in October and November are Louise Bonne of Jersey, a good old variety, which succeeds well in most places if grafted on the Quince; the fruits are handsomely shaped, and of flavour much liked. Beurré d'Capiaumont, a good bearer of medium-sized finely coloured fruits and pleasant flavour, but being a bad keeper one tree of it is quite sufficient for a private grower. Marie Louise is one of the best Pears known, being large, handsome, and richly flavoured. The tree does well here, either as a pyramid, or trained against a south and west wall, and is an excellent cropper. Fitmaston Duchess is another large, handsome, and well flavoured fruit: as also are Beurré Diel, Van Mons' Léon le Clerc, and Passe Colmar, the latter being a prodigious bearer, of medium size, and highly flavoured. There are some good specimens of this variety here, trained umbrella and fan-shaped; both methods of training yielding alike satisfactory results. The following varieties come into use in December and four following months somewhat in the order in which the names appear, viz.:—Althorpe Crasane, medium size, fruit buttery and rich in flavour; the tree is also a good grower and free bearer: the same may be said of Beurré d'Aremberg. Crassane is a fine old Pear, the fruit being large and full of flavour. Glou Morçeau and Chaumontel are indispensable varieties. They should be grown against a wall, the fruit, in point of size, flavour, and appearance, being in both cases all that could be desired. Knight's Monarch is a good hardy Pear, and it does well at Longford, either as a standard or pyramid, and seldom fails to bear well, the fruit being richly flavoured, and which requires to be gathered somewhat earlier (when grown as tall standards, at any rate) than other mid-winter varieties, otherwise, owing to the fruit parting so readily from the stem, a little wind would cause them to drop off. Easter Beurré and Ne Plus Meuris, trained umbrella fashion, have been thickly studded with clean medium-sized fruit this season, as also have been trees of Josephine de Malines on walls, fruit medium size, handsome, full of juice, and of delicious flavour. Seeing that this excellent variety is a good grower, and bears freely on south and west walls every year, the wonder is that it is not oftener met with in gardens, as its merits unquestionably entitle it to be included in every collection of Pears worth growing. And the same may be said of Beurré Rance, one of our very best late Pears, as when well ripened and carefully stored away in a suitable fruit-room they keep well, and come into use from the end of January to May. The fruits, too, are large, melting, full of juice and highly flavoured. Catillac and Uvedale's St. Germains, are two excellent stewing varieties; the fruits are very large, and keep well till May. We have one tree of each on walls, but the Catillac on the inner side of a semi-circular wall having a north-western aspect bears good crops every year, while its companions on the opposite side of the same wall yields but half a crop. Chaumontel, Glou Morçeau, Van Mons' Léon le Clerc, and many other large dessert varieties, are also very acceptable for culinary uses whenever they can be had. Those of your readers who may be making preparations for planting a new garden with fruit trees, but whose space at command may not admit of all the varieties enumerated above being grown, can, without much fear of erring in doing so, reduce the number to suit their own convenience by selecting every second or third variety from the list given, observing, however, the remarks respecting the individual varieties in making the said selection. I may remark that many of our trees are old, consequently they do not produce such fine fruit as younger trees.

CULTURAL REMARKS ON PEARS.

Having determined the distance at which the trees should be planted from each other against the walls—which for horizontally trained trees should range from 20 to 24 feet apart, and a few feet less will suffice for fan-trained trees, planting maiden trees for transplanting subsequently between them in the meantime—an order for the necessary number of healthy, kindly-grown, and rightly named trees should be despatched forthwith to any of the large nurserymen having a reputation for supplying trees of this description; meanwhile, having first marked the central position of each tree on the wall with a piece of chalk or charcoal, excavate holes extending 2½ feet on either side the mark on the wall, 5 feet therefrom, and 4 feet deep, the outline of the hole forming a half circle. Into the bottom of this hole put 9 inches thick of brickbats, stones, or clinkers, and over these a sufficient thickness of coarse gravel should be laid to fill in the chinks, and following this a layer of turf, grass side down, to ensure good drainage; but should water at any time be likely to rise nearer to the surface than 4 feet it will, of course, be necessary to reduce the depth of the hole to such an extent as will prevent the possibility of the roots of the trees being at any time submerged—a circumstance which would be injurious to their well-being. The holes having been made ready for the reception of the soil, the latter—assuming that the character of the natural soil is not such as is calculated to promote and afterwards sustain satisfactory growth in the trees—consisting of three parts good calcareous loam and one of old lime rubble and wood-ashes, well mixed, should be got into the holes in a moderately dry state, so that it may not adhere to the feet in treading on it. In planting the trees make due allowance for the soil subsiding 5 or 6 inches within as many weeks from the time of planting. Having placed the tree in position, spread the roots out in every direction, with a slight inclination downwards, shortening back at the same time any straggling roots, and cutting clean away with a sharp knife any portion of the same that may have sustained injury in the process of lifting; and with a view to encourage an emission of young feeders make a series of incisions along the principle roots previous to covering the latter with 6 inches thick of the compost indicated above, and before treading the latter gently over take hold of the tree by the stem and give it a few good shakes in an upward direction, so as to let the soil mix well among the roots. This done, lay on 3 or 4 inches thick of rotten dung as a mulching, which will maintain the roots in a more equable condition than could otherwise be secured. Trees thus planted should, as a matter of course, be temporarily secured to the wall with nails and long shreds, to allow of them sinking with the soil. Trees so planted, providing the after-treatment be good, cannot fail to yield satisfactory results during ordinary seasons.

TRAINING OF YOUNG TREES.

In training young Pear trees I make it a point the first spring after planting, when the sap begins to rise, to bend the shoots which are left their full length towards the ground, and securing them to the wall in that position, the bend starting from the point whence the first of the young shoots is desired to proceed. The check thus given to the flow of sap causes a sufficient number of wood-buds to push from each shoot to form a good sized "fan-shaped" tree the first year after planting. Of course, as soon as the buds nearest the base of the individual shoots so treated have pushed into growth, the nails should be drawn, the shoots (main shoots) spread out on the wall, after the manner of a hand and distended fingers, and secured thereto, leaving sufficient room in the latter for the develop-

ment of the branch; the young shoots indicated above being trained at proper distances over the intervening space, and a judicious course of pinching of the after-growth is pursued during the summer and autumn months with the obvious object of plumping wood-buds, forming spurs, and promoting a balance of growth in the individual trees. In conclusion, I may remark that a large percentage of the trees here are trained "umbrella fashion." The trees, which are, for the most part, growing on the borders on either side the central walks leading north and south from the principal range of glasshouses, are 10 feet apart, 7½ feet high, nearly 6 feet through, and furnished with healthy fruit-bearing branches to within 9 inches of the ground, at which point the lower set of branches and those higher up are tied to each other and to a stout circular wire secured to small Oak stakes, about 2 inches in diameter, driven well into the ground. These trees are admired very much, not only on account of their ornamental character and general productiveness, but more particularly on account of the great area of fruit-bearing surface which is secured from trees thus trained in comparison with the small extent of ground (a circular space of 6 feet in diameter) which each tree covers. *H. W. Ward, Longford Castle.*

# The Flower Garden.

## THE BEDS.

It will be advisable at once to clear away all plants that will not stand the winter, and refill the beds with shrubs and other hardy plants for winter effect, or with bulbs and hardy annuals for spring display. If neither of these plans is adopted, though one or the other should be, at least let the beds be dug and made tidy.

### Roots.

Dahlias should now be taken up and dried before storing them. Cannas should be taken up and wintered in sand in any place free from frost and damp. Gladioli winter best in light warm soil. When left in the ground undisturbed they always flower better than when planted annually, but where stiff cold clay and wet subsoil exist they should be taken up and carefully dried before being packed away. Salvia patens and perennial Lobelias should be packed closely together in shallow boxes and kept from frost till spring, then they can be potted or planted outside, and are easily increased by division if kept in a frame till established. Bedding plants of all kinds should now be in their winter quarters, and in open weather should be fully exposed to the air, and have all the light possible, to keep them stocky. In order to winter them well, Chrysanthemums that are planted out in open borders or beds or against walls, and which are now coming into flower, should be at once protected from frost or the flowers will be destroyed. Any light material, such as tiffany, gauze, or scrim canvas, or old frame lights will save them from injury, and where cut flowers are required, they will prove a great acquisition.

Amongst our best border flowers at this season of the year I may mention Schizostylis coccinea, very pretty, and flowers well in a warm situation; and for light soil Michaelmas Daisies, Aster amellus, A. ericoides, A. grandiflorus. These plants should be grown much more than they are, as they come into flower after the summer flowers are over and before the Chrysanthemums. They are most valuable for cut flowers. I also find the small dwarf and early flowering varieties of Chrysanthemum useful, as they commence to flower in August, and flower till the end of October. They are not much more than a foot high, and are covered with their beautiful little red and white, yellow and crimson flowers, most useful for cut flowers, and they are very easily transplanted to fill up vacant places in beds or borders when plants have gone off.

### Roses.

Roses may now be planted, and if done early a good bloom may be anticipated next season. Any that are not growing satisfactorily should be taken up and the beds or borders well manured and trenched before replanting. Bulbs of various kinds, and Pansies and Violas, may be introduced amongst the Roses with good effect, without being detrimental to the Roses. Briers for standards should be planted as early as possible for budding next season, so that they may get established before spring. Tea-scented Roses require protection in winter. When they are in open beds or borders it would be advisable to take them up at once and pot them, keeping them in cold pits, from which take care to have the lights taken off in fine mild weather; they may be planted out again at the end of March or April, according to the season. The best soil to plant them in is one that is rich, light, and the beds should be well drained. Noisette Roses, if not grown against a south or west wall, will require protecting in severe weather; if grown as standards or pyramids or dwarfs, they should have some Fern, Furze, or Heath, or any other similar material tied about the stems, and mats fastened round the whole plants. Standards should have some similar material fastened round the stems where the bud is inserted, and among the branches.

The preservation of neatness will, for some time to come, be a most difficult matter till the leaves are all down—it will require daily attention to maintain neatness. All grass lawns should be mown for the last time this season. Beds, borders, walks, should be all treated alike; the continuous rains having made it impossible to use the hoe, the only means left, hand-weeding, to get rid of the weeds, is by far the best. *Wm Smythe, The Gardens, Basing Park, Alton.*

# Plants and their Culture.

## HOUSING PLANTS FOR THE WINTER.

It will happen, even in the best appointed establishments, that some portion of the greenhouse and other plants which require protection from frost, will, through pressure of work, be left out until a sharp frost or two gives us warning that no further delay must be tolerated. At such times the plants may by placed together somewhat indiscriminately to save time; do not, however, allow them so to remain a day longer than can be avoided. Take the first opportunity that presents itself to have all the paint, glass, walls, &c., cleansed before arranging the plants in their winter quarters. To this advice one exception might be made—viz., where there is a wall that is permanently damp, consequently green and unsightly at all times; in such places contrive by the best available means to induce Ferns to grow, such as Adiantum Capillus-Veneris, Pteris longifolia, and P. serrulata, with Nephrodium molle, and other tolerably hardy kinds; to attain this there is not much difficulty, for those named will generally thrive well. To the Ferns should be added Ficus repens and its diminutive form, F. minima; all of this material will be found of great service for cutting, and instead of having to expend labour in cleaning such spots some attention to watering only will be needed, whereas in the former case the labour expended would yield no lasting result.

Attend to the repairing of putty and broken glass at such a favourable opportunity; drip, occasioned by the heavy rains, will be very injurious to most greenhouse plants, a comparatively dry condition of the atmosphere being best suited to their requirements on the whole. When arranging the plants, bring those moderately close to the glass that are most likely to become drawn, or in the case of specimens that are more valued, see that they have sufficient space between them for the free circulation of air and admission of light. The intervening spaces can be filled in with those subjects that are not likely to come to any harm by reason of their comparatively dormant state for the next few months. By exercising forethought and by judicious contrivances it is surprising what a number of plants can be got into a structure without harm accruing to the plants. I am in favour of having swing shelves fixed wherever possible without injury to the other occupants of the house; where convenient we prefer them over the pathway, then any drip occasioned by watering will not so materially matter. These shelves will be found very useful for Pelargoniums and any other soft-wooded plants that it is essential to keep in a dwarf state. When the arrangements are completed see that an abundant circulation of air is maintained on all favourable occasions; do not use fire-heat when the temperature can be kept a few degrees above the freezing point unless it be to dispel damp when in excess; for this purpose select the early morning hours so as to allow the pipes to cool down before nightfall. *James Hudson, Gunnersbury House Gardens, W.*

# Fruits Under Glass.

## THE CHERRY-HOUSE.

If from natural decay, or from any other cause, the removal of any of the trees in this department has become necessary, it should be done at this season of the year, and in the case where a tree has occupied the place for several years, and where the soil has become somewhat stale, if not altogether unsuitable for a fresh tree which may be expected to last a considerable number of years, it should be taken away entirely, and fresh stuff substituted, which should consist of the top spit of good yellow loam half decomposed, and if its nature is not at all gritty, it should be made so by adding a sixth part of road-scrapings. After this material has been put into the border and allowed time to subside, the trees should be planted at about 12 inches beneath the general level of the border; in this operation spread out the roots regularly over the surface, and shorten back those devoid of rootlets, moisten and cover them with 2 inches of soil, which should be trodden down firmly. After filling up the border mulch it with 3 inches of decayed manure, and well water all the new material.

The most suitable kind of trees for the purpose in question are those which have had about two years' growth on a wall out-of-doors; trees of this character if carefully lifted, planted, and treated well afterwards will speedily recover from the shift and come into bearing quickly afterwards.

Cherry trees when established and protected from the effects of frost, bear so abundantly every year, that the crop of fruit does, as a rule, check and subdue over-exuberance, so that root-pruning or partial lifting is seldom if ever necessary.

The customary cleaning of the house and trees should be done so that the pruning and the training of the trees can be proceeded with and finished before the beginning of December. *G. T. Miles, Wycombe Abbey.*

## The Orchard-house.

Assuming that the house is in two divisions, and that one division is allowed to start in its own way without any forcing, the earliest division must be managed to come in six or perhaps eight weeks earlier, and to do so it must be started with a gentle heat early in the year, say the first week in January. An opportunity must be taken between now and that time to clean the wood and glasswork of the house; for this purpose warm rain-water should be used with a very little soap in it. Strong soapy water acts injuriously in two ways—it causes the glass to become slightly opaque, and takes the paint from the wood. Our pot trees have all been turned out-of-doors and plunged in cocoa-nut fibre refuse. There is no injurious effect upon the trees through being turned out, but in cold wet districts it is better to leave the trees inside; in that case it is necessary to look carefully over them to destroy scale or any other insect pests that may be upon them. Remove the scale with a piece of wood, and afterwards wash it with a sponge and warm soapy water. It is a good plan to wash the trees all over with a mixture of soapy water and flowers of sulphur. This is a safe mixture, and does not cause the buds to drop. On one occasion I used Gishurst Compound; it happened to be too strong, and the result was that nearly all the buds dropped off. Soft-soap may be made too strong. Four ounces in a gallon of water is sufficient, and 8 oz. of flowers of sulphur; a little soot may be added to it.

The trees have now all been top-dressed, with a compost of about equal parts loam and decayed stable manure. Before doing this the top soil was removed to as great a depth as possible without materially injuring the roots, all the small fibrous roots being removed with the soil, and the fresh compost firmly rammed in. It is now a good time to purchase trees for potting.

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Nov. 2 | Sale of Dutch Bulbs, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Sale of Fruit Trees, Roses, &c., at Osborn's Nursery, Sunbury, by Protheroe & Morris<br>Southampton Royal Horticultural Society's Chrysanthemum Show (two days). |
| TUESDAY, | Nov 3 | Sale of Nursery Stock at Ware's Nursery, Tottenham, by Protheroe & Morris<br>Clearance Sale of Nursery Stock at the Barley Mow Nursery, Betchworth, by Protheroe & Morris. |
| WEDNESDAY, | Nov. 4 | Sale of Dutch Bulbs, at Stevens' Rooms<br>Sale of 24,000 Fruit Trees, at the Osborn Nursery, Hampton, by Protheroe & Morris.<br>Sale of Plants, Roses, and Bulbs, at Protheroe & Morris' Rooms (two days).<br>Autumn Show, Richmond Horticultural Society, Surrey (two days) |
| THURSDAY, | Nov. 5 | Sale of several thousand Lilium auratum Bulbs, from Japan, &c., at Stevens' Rooms<br>Sale of Dutch Bulbs, &c., at Protheroe & Morris' Rooms.<br>Clearance Sale of Nursery Stock, at the Nursery, Bromley, Kent (two days). |
| FRIDAY, | Nov 6 | Crystal Palace Great Chrysanthemum Show (two days)<br>Sale of Imported Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Nov. 7 | Sale of Dutch Bulbs, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms |

TO be or not to be? That is the question which the horticulturists of this country have to solve. There are those who think that the question whether there should, or should not, be an INTERNATIONAL HORTICULTURAL EXHIBITION on a large scale in 1887 should be solved by the Council of the Royal Horticultural Society or by the "Commissioners." The latter is a rather vague expression, but may be taken to mean the powers that be at South Kensington directly concerned with those Exhibitions, of which the "Inventions" is now drawing to a close, and to which the Indian and Colonial Exhibition of next year (1886) is to be the lineal successor. We venture to think, however, that the solution primarily depends upon the answer which the horticulturists of the country are prepared to give to the inquiry addressed to them by the Council of the Royal Horticultural Society, and which it is hoped they will give with no uncertain sound at the meeting to which they are all collectively and individually invited on November 10. Before any definite conclusion can be arrived at, there are various and most important considerations to be discussed. First, is it desirable? On that point in the abstract, so far as we can gather, there is no hesitation. It is desirable. The doubts arise when we come to the questions, how and by whom it is to be carried out. The answer to the question How? is really soon settled. It must be on a scale commensurate—that is, relatively commensurate—with the Exhibitions that have recently been held, viz., the Fisheries, the Healtheries, and the Inventions. We should be false to our calling; we should ignore our sense of the magnitude and importance of horticulture considered in its widest phase, if we did not avow our belief that the horticulturists—and those more or less directly connected with them—can, if they choose, produce within necessary limitations (but those of the widest character), as important an Exhibition, and maintain it as effectively for a period of many months as those who have hitherto succeeded in drawing so many thousands of people—millions we may say—to South Kensington. Will they so choose? Details may be settled hereafter, and difficulties may be surmounted or evaded as they arise. Will they so choose? They have a glorious opportunity of showing that horticulture, in its widest sense, is not a mere luxury—not a mere affair of æstheticism, not an affair for the wealthy and the cultured only, but a necessity for every inhabitant of this country—for all mankind. We are all concerned in the results of the cultivation of plants. We are all absolutely dependent—every one of us—on the vegetable kingdom, and on the due appreciation and application of what knowledge concerning it may be forthcoming. Food, fuel, health, clothing, our dwellings, our very tables and chairs, to say nothing of the amenities of life, all depend essentially on horticulture in the wide sense in which we have a right to construe the term. There is, therefore, not the slightest hesitation in saying that an Exhibition of surpassing interest may be got together. There is no lack of material, and even if we bear in mind the necessary limitations, if we remember that part of the proposed Exhibition, and that the most generally attractive, must be of a temporary and intermittent character, there still remains a vast residue of permanent material for an Exhibition. If for the moment we consider only what we have called the temporary and intermittent exhibits — horticulturists, after the brilliant series of fortnightly shows which have been held for the last three years, cannot refuse to admit that the thing can be done; while even from the point of view of permanence surely the magnificent efforts of Mr. WARE, and of those nurserymen who have contributed throughout all the season to maintain an interesting and varied display, afford sufficient proof that zeal and co-operation can effect in the future as much, and a vast deal more, than has been done in the past.

So far, then, as material is concerned, whether permanent or intermittent, there is no doubt whatever that the thing can be done. Horticulturists must not tie themselves down too rigidly to the precedent of 1866. Circumstances are altogether different now. We cannot, perhaps, reproduce such an exhibition as that. Let us assume that we cannot. What then? We can do better. Not, perhaps, in certain particulars, but on the whole it would be absurd to suppose that we cannot, if we choose, surpass the efforts of 1866. But still, even after showing that the material exists in the country in abundance, still the cry rings in our ears, How?

Well, how have the three great Exhibitions been carried out? In each year we believe there has been a surplus, at any rate the expenses have been more than covered. Is it not fair to suppose, that with a good Exhibition and a similar organisation, success will ensue? We know we can if we choose make a good Exhibition, and the organisation is at hand also, if we choose to avail ourselves of it. That at least is the view we take of it. We believe that the same organisation, supplemented by the technical aid which horticulturists alone can render, would secure a success. The "how" rings in our ears again. What about the funds? where is the money to come from? The Royal Horticultural Society certainly has none to spare. Well, where did the funds come from to establish and maintain the present series of Exhibitions? What the Fisheries, the Healtheries, the Inventions, did in this matter, we ought to be able to do. They did not start with money in hand, it was advanced on sufficient security, and we do not doubt that the money would be forthcoming on similar terms. But then horticulture, even in the wide sense in which we here use the term, would probably not attract the millions of shillings that would be required. We should certainly have to make use of the same adjuncts of music, art, electric lights, fountains, and other attractions which the managers of the other Exhibitions have found to be necessary, with as many novelties of a cognate character as we could press into the service. We should have also to consider, in a very particular manner, the Clerk of the Weather, and as he is a very capricious personage, we should have to provide accordingly.

At any rate we think we may assert that if the horticulturists choose they may find the materials and experience no greater difficulty as to funds than the managers of preceding Exhibitions have done.

Then comes the question, By whom shall all this be done, if at all? Obviously the Council of the Royal Horticultural Society would not be justified in committing themselves financially, they have not the money to spare, but they can give guidance, direction, aid of all kinds except money. It must be remembered that to a large extent their very existence, at least at South Kensington, depends upon their lending all the aid in their power to the Exhibition Commissioners. The Royal Horticultural Society now has no footing at all at South Kensington, except by the grace of the Commissioners. Cease to co-operate with them, and the Society would be turned out tomorrow. We may regret this, but it is of no use wailing over spilt milk—we must look facts in the face. What chance is there of obtaining a chair to sit down upon in the future (there are not many now!) if the Royal Horticultural Society does not now work with the Commissioners? It is in evidence, then, that the Royal Horticultural Society by itself cannot carry out such an exhibition, but with the co-operation and support of the Commissioners (we use the word in a general sense, so as not to burden our argument with details that are for our present purpose unnecessary), it is assuredly possible. Once more, then, we ask the horticulturists of Great Britain, Shall this be, or shall it not? The definite answer to this question should assuredly be given at the meeting on the 10th proximo. In the meantime we shall gladly give insertion to such discussions and arguments, *pro* and *con*, as our limited space and other considerations permit; and we most earnestly press on the Council the necessity of presenting themselves to that meeting with full explanations and something like a programme, or scheme of action, to be adopted, modified, or rejected, according to circumstances.

—— THE PROPOSED INTERNATIONAL EXHIBITION.—We understand that the Royal horticultural Society has addressed a letter of invitation to the leading horticultural societies of the kingdom, requesting them to take part in the meeting at South Kensington, on November 10, for the purpose of discussing the practicability of holding an International Exhibition of Horticulture in 1887, the jubilee year of the reign of Her MAJESTY. As it would be impracticable to issue separate invitations to individuals, the Society has published an advertisement requesting the presence of all in any way interested in horticulture on the day in question. It may be hoped, therefore, that a thoroughly representative meeting of provincial, as well as metropolitan, horticulturists may be obtained. Those unable to be present can at least communicate their views to the President.

VEITCH MEMORIAL PRIZES FOR 1886.—We learn that the trustees of the VEITCH Memorial Prize Fund have decided to offer next year the following prizes, the dates for which and other necessary particulars will shortly be announced:—

At Stoke-on-Trent, a Veitch Memorial Medal and prize of £5, for a Group of Orchids, with Ferns intermixed.

At Stoke-on-Trent, a Veitch Memorial Medal and £5, for a Group of Miscellaneous Flowering and Foliage Plants.

At Exeter, a Veitch Memorial Medal and £5 (subject not determined).

At Royal Botanic Society, Regent's Park, a Veitch Memorial Medal and £5, for twelve Amaryllis.

At Royal Horticultural Society, South Kensington, a Veitch Memorial Medal and £5, for a Collection of Forced Salad Plants.

—— LINNEAN SOCIETY OF LONDON will meet on Thursday, November 5, at 8 P.M., when papers will be read on the following subjects:—1. "Flora of the Peruvian Andes, and its History and Origin." By JOHN BALL. 2. "Monograph of Recent Brachiopoda." Part 1. By the late Dr. THOMAS DAVIDSON.

—— "THE BRITISH MOSS FLORA."—Dr. BRAITHWAITE has lately issued the ninth part of this work, in which both text and letterpress are as carefully executed as in former numbers; which is saying not a little. The book is quite indispensable to

all students of Mosses, and should be added to every botanical library. It is published by the author at 303, Clapham Road, S.W.

—— "Arboretum Segrezianum."—We have to record the publication of the sixth part of this important work. It will renew the feelings of regret at the loss of so ardent a student, it will excite afresh our sympathies with the French horticulturists so suddenly and unexpectedly deprived of their chief. Five parts had been published before M. Lavallée's death; the sixth, which contains titlepage, preface, and index, closes the work. It has been issued by Madame Lavallée, with the aid of M. Herincq, and while it forms a fitting close to this particular work hopes are held out that, at some future time, the numerous plates which had been prepared before M. Lavallée's decease, but for which the text had not been completed, will be issued. The present part contains figures and descriptions of Ribes multiflorum, t. 31, a Hungarian species; Pinus Bungeana, t. 32, a Chinese Pine of marked aspect, the bark of which peels off in flakes, like that of the Plane; Castanea vulgaris var. pendulifolia, an elegant variety, remarkable for its long pendulous leaves, which character, however, is not shown in the plate; Cerasus capuli, t. 34, a Mexican species with Peach-like leaves and long erect racemes of white flowers like those of Cerasus Padus. Cerasus Herincquiana, t. 35: this is the C. Sieboldi pendula flore roseo of the nurseries, but which, it appears has not been described in any botanical work. The branches are bent downwards as in Sophora pendula, the leaves are lanceolate, produced after the flowers, which latter are a white or pale flesh colour, and arranged in umbels. Cerasus Pseudo-Cerasus, t. 36: this is the double Japanese Cherry or Cerasus Sieboldi of English nurseries, and of which C. Watereri is the form with single flowers. It is a native of Japan, and the Japanese gardeners have availed themselves of the beauty of the tree and its pliability to evolve numerous varieties.

—— The Crystal Palace.—Electric, and other supplementary lighting at this place of amusement bring out capitally the statuary and horticultural decorations, as the fine Ferns on the water basins, which look particularly robust this year, the groups of autumn flowering Chrysanthemums, Fuchsias, Pelargoniums, and the thousand and one items the garden management employ to make the central part attractive to the public. The electric arc lamps in the centre are masked, so to speak, by Chinese lamps encircling them, the object being to add picturesqueness to the general scene, and to prevent the milder lights from being overpowered by the electric light.

—— Ovum in Ovo.—Dr. Barnes alludes in a recent number of the *British Medical Journal*, to a hen which at various intervals laid double eggs. The shell of the included egg was always of a red tint; the shell of the including egg was always of a dull chalky-white. The hen was a half-breed between a Cochin and a Dorking. The Cochin egg was in nine ascertained instances inside the Dorking egg. To find two yelks in one shell is common enough, but it is certainly rare to find two perfect eggs, one contained within the other.

—— Two Crops of Peaches in One Season.—A correspondent lately forwarded us a Peach of the size of a small Walnut produced under glass on the shoot of the year, which after having been stopped formed a bud which developed flowers, two of which

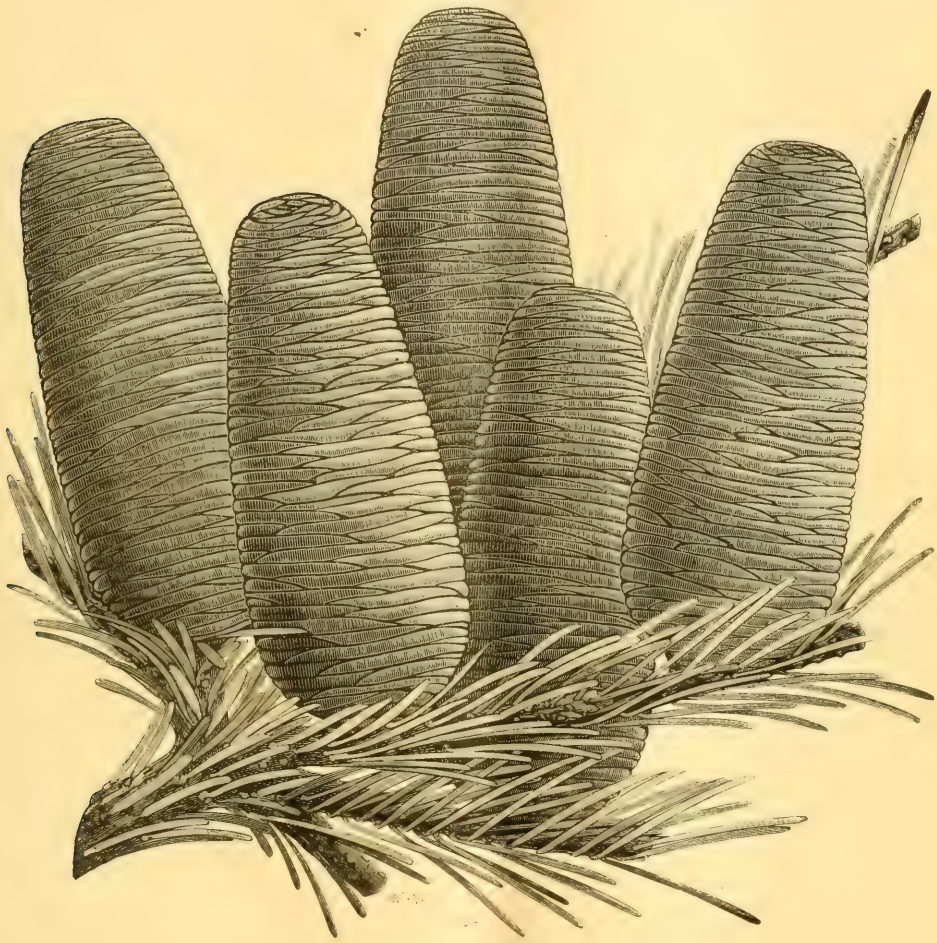


Fig. 128.—Abies grandis: British-grown cones. (see p. 563.)

were set. Unfortunately the two fruits were accidentally knocked off, but it is hardly likely that they would have continued to swell after the fall of the leaf.

—— APOTHECARIES' BOTANIC GARDEN, CHELSEA.—We have on several occasions lately made allusion to this old-established institution, whose primary object is, as it has been for the last 200 years, the teaching of botany to medical students, and latterly also to young women and to ladies in training for governesses in public schools. We now learn that during the present year the number of visitors, mostly students, has been 2784, of whom some 1200 were males and the remainder females. The Society gives a gold and also a silver medal in both classes of students to those who pass the most creditable examinations.

—— ACACIAS AT WORTHING.—One of the things that strike the botanical observer most forcibly as he steps out from his hotel at Nice into the public squares is the profusion of tall trees of Australian Acacias, such as he is accustomed to see in England only as small greenhouse plants, or at best in the temperate-house at Kew. There are favoured spots, however, in these islands where Acacias can be grown to advantage, in illustration of which Mr. BATEMAN brought to the Horticultural Society on Tuesday last some branches of A. retinodes in flower, and which were taken from a plant that has stood without protection other than that afforded by a wall in the garden of Mr. BATEMAN at Worthing.

—— THE BOTANIC GARDEN, GLASGOW. — The Town Council held a meeting with regard to this garden, and have decided to allow the Society—and the directors have consented—to continue in the possession of the grounds until March 31, 1887, and any deficit then remaining is to be made up by the sale of plants and other moveable property of the Society.

—— THE MOVEMENTS OF PLANTS.—This was the subject of an interesting lecture delivered by the Rev. G. HENSLOW, on the 10th inst., on the opening of the winter session of the Ealing Natural History and Microscopical Society. He commenced by stating that it was once thought that movement constituted a main distinction between animals and plants, but is no longer held to be so. A tree cannot move in the sense in which a lion can; but every plant has an actual movement of its own. An acorn was first taken as an illustration. The radicle goes down and moves in irregular ellipses and circles. The plant has an attraction for moisture, and will seek it. If the leading root is cut off it will cease to go down, but branch out horizontally. There is also a motion of rejection. If the radicle comes into contact with an obstacle it turns away and seeks another direction. This was illustrated by means of a coloured illustration of a Radish which had tied itself into a knot and was sketched by Mr. W. G. SMITH in 1866—an apt illustration of circumnutation. The roots of plants have been known to pass under roadways to reach a ditch, stimulated thereto by the moisture contained in it. The upward shoot is not always sent up straight from the radicle; it has to find its way through the soil, and twists and turns in doing so; but when out of the soil the tendency is to grow erect. The Strawberry and Potentilla both produce runners; a stem is thrown out which produces a tuft which makes a plant, and this in its turn forms another tuft. The case of climbing plants was instanced, moving by way of their slender stems. Some plants turn to the left, others to the right. This movement is done by circumnutation, but regular and symmetrical, describing circles. Other plants climb in a very different way. The Traveller's Joy (Clematis vitalba) climbs by means of its leaves, the petioles of the leaves furnishing the means; the Pea climbs by means of its tendrils, and so fastens itself to an object. This movement on the part of climbers was further illustrated by means of the Vine and Virginian Creeper. Then there is rapid motion and slow motion. The Telegraph Plant, as it is termed, proceeds by jerking processes. It is one of some plants that are said to go to sleep. The Sensitive Plant is an illustration of quick motion. This also may be said to go to sleep, and so does the garden Lupin. The lecturer then proceeded to speak of vernation, or the various ways in which the leaves are arranged and fill up the bud. This was illustrated in various ways. The case of the Mesembryanthemum was mentioned, the flowers of which close when the sun ceases to shine. The case of Trifolium subterraneum was mentioned as an illustration of a plant that buries its seeds in the soil, and the Cyclamen also.

—— "YE ORIGINAL LITTLE BOOKE ON DAFFODILS."—A prettily illustrated catalogue of the Daffodil, by W. BAYLOR HARTLAND, of Temple Hill, Cork, has reached us. The numerous illustrations seem very correctly done, one of the best being a plate of the cernuus varieties, from photographs, and exhibited on a black ground. The text is historical and controversial, and authorities are freely quoted, so that it is really something more ambitious than a trade list.

—— FLOWERING PLANTS AND FERNS OF THE RIVIERA.—Messrs. TRÜBNER & Co. have published a series of eighty coloured plates of the plants of the Riviera, with accompanying text by Mr. C. BICKNELL, and on which it will be our duty to remark at greater length on a subsequent occasion.

—— THE INNER TEMPLE CHRYSANTHEMUM SHOW.—The usual display of the Chrysanthemum flowers in reflexed and hybrid Japanese varieties is now to be witnessed in the small greenhouse near the Embankment entrance to the Gardens. The plants are as well grown as we now have got accustomed to see them; and besides the older favourites, there are some excellent new varieties in Mdlle. Lacroix, a sulphur-white; Madlle. Antoinette Brunel, pale rose suffused with white, the florets being tubular; another with similar florets is Porcupine, a rosy-lilac; and Val d'Andorre, Mad. de Seroni, John Laing, M. de Mousillac, mentioned in our Royal Horticultural Society's show report. Galathée and Colibri are not in good form here this year.

—— DISA CORNUTA AND SATYRIUM CARNEUM.—Through the kindness of Mr. P. BARR we have been enabled to examine flowers of these plants grown in the nursery at Tooting. The Disa, which is rare, has a flower-spike of 2½ inches in length, with six blossoms open; the helmet is pale blue, the lip pure white, having in the centre of the throat a small spot of blackish-purple. The spike of Satyrium measures 6 inches in length and 3 in diameter, the flowers being pink and white, and densely packed together.

—— HOT-WATER THROTTLE VALVES.—A valve has been brought out by Messrs. BECK & Co., Great Suffolk Street, Southwark, which seems to fulfil admirably the conditions of a secure valve for hot-water pipes. We know how readily, with hard water used, the valves, of whatever metal they may be made, become encrusted with sediment, and also corrode, owing to the salts in such water; it therefore tends to greater efficiency when the valves can readily be taken out and cleaned, as in those before us.

—— TESTIMONIAL TO MR. W. INGRAM.—We learn from W. L. EMMERSON, Hon. Secretary, Waltham-on-Wolds, Melton Mowbray, that it is proposed to recognise, by a suitable testimonial, the services of Mr. W. INGRAM, which have been devoted to the science and practice of horticulture, at Belvoir, for the last thirty years. All who are interested in gardening, and have enjoyed the privilege of seeing the charming spring gardens at Belvoir Castle, will readily acquiesce in the propriety of a proposal that an acknowledgment at least is due to the author of a style of gardening that has tended so much to the increased cultivation of our most cherished hardy flowers. The following gentlemen have consented to act as a committee to carry out the above object:—Rev. Canon SWELLS, Rev. Canon HOLE, Hon. and Rev. Canon FOSTER, Major NEWTON, Rev. Professor BLAKE, and H. SMITH, Esq.

—— THE ESSEX FIELD CLUB.—The sixty-second ordinary meeting of the Club will be held in the Loughton Public Hall, Loughton, Essex, on Saturday, October 31, at half-past 6 o'clock. The following paper will be read:—"Mosses and their Allies, with special reference to those of Essex;" by Professor BOULGER, F.L.S., F.G.S., &c., Vice-President E.F.C.

—— SILOS AND ENSILAGE.—A most valuable parliamentary paper has been issued relating to these subjects, containing the replies to various questions addressed to farmers and landowners in Great Britain, with a view of eliciting facts and of obtaining the results of their experiments. Reports have been received from 1183 individuals, 963 of the silos being in England, 59 in Wales, and 161 in Scotland, the number being about double what it was in the preceding year. In almost all cases an improvement in the quantity and quality of both milk and butter is reported from the use of ensilage, so that there can now be scarcely any doubt as to the "importance of ensilage as an auxiliary to other food for animals whether for dairy, store, or young stock, among cattle as well as other kinds of stock . . . [and] it appears probable . . . that farmers will be by its adoption in considerable measure compensated for the loss which they sustain in bad seasons for haymaking, while the importance of the statement to the effect that a larger number of stock can be kept on land where the method of ensiling crops, even of an otherwise unpromising kind, is practised will hardly fail to receive attention."

—— THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session will be held on Monday, November 9, at 12, Great George Street, Westminster, S.W., when the President, Mr. E. I'ANSON, will open the session with an address. The chair to be taken at 8 o'clock. Those proposing to enter their names for the students' preliminary examination, to be held on January 19 and 20, 1886, must intimate their intention to the Secretary before the last day of November. Students eligible for the proficiency examination, to be held in April, 1886, must give notice of the sub-division (table A of rules) in which they elect to be examined, not later than the last day of November. Examinations qualifying for the classes of professional Associates and Fellows will also be held in the month of April next. Names of applicants for these later examinations to be sent in before January 9 next. All particulars as to days, subjects, and course of examination will be forwarded on application to the Secretary.

—— HIPPOPHAE RHAMNOIDES.—The silvery grey foliage of this rare native shrub is pleasing on its own account, and when planted amongst other shrubs or in the front of trees is conspicuous enough to warrant its being more extensively cultivated. The short lateral branches terminate in a strong spine, and from the fact of its being a maritime plant, and naturally adapted to resist the sea breezes, it is generally known as the Sea Buckthorn. There is no difficulty, however, in cultivating it inland, nor in fruiting it as successfully as, or even better than the Elæagnus, to which it is closely allied. One thing with regard to this must be observed, namely, that the plant is dicecious, and requires male and female plants in the vicinity in order to ensure the fertilisation of the flowers. When this happens, the orange coloured, berry-like fruit is produced in great abundance, and persisting on the plant for a long time after maturity, constitutes it a valuable subject for autumnal effects. The berry-like fruit is simply a fleshy calyx-tube, and shows what resources are at Natures command for the dispersion or dissemination of the seed. The plant is figured in *English Botany*, 6425, and many other works of note. A group of healthy, young, fruiting specimens may be seen by the pond in front of Museum No. 1, at Kew.

—— AËRIDES LEONIAL.—A species discovered in Birmah by M. ALLAN GOSS. According to the October number of the *Orchidophile*, wherein a coloured figure is given, it is a vigorous plant, with roots more than a yard long, while the rich green foliage does not spot as that of A. Lvrpentæ does. The flowers are in loose racemes, each about 1½ inch in diameter, whitish, with deep violet tips, and with a delicate perfume. The flowers, produced in June and July, last in perfection for three weeks. M. GODEFROY cultivates it in a basket in a moist stove.

—— PUBLICATIONS RECEIVED.—*Reports of the Botanical Exchange Club of the British Isles for* 1883 and 1884.—*Canadian Record of Science.* (Montreal.)

—— GARDENING APPOINTMENTS.—Mr. J. WYKE, who has, until recently, been Gardener to Mrs. DUNN, Henley Grove, Westbury-on-Trym, Bristol, has taken charge of Mrs. DUNN'S gardens at Eccleshall Castle, Eccleshall, Staffordshire.—Mr. E. JONES, Lindley Hall Gardens, Nuneaton, has been appointed Gardener at Steventon Manor Gardens, Micheldever, Hants.

# Orchid Notes and Gleanings.

## VANDA CŒRULEA.

When I read at page 431 that "the difficulty attached to the growing of this species is doubtless the greatest obstacle that prevents its becoming common," I felt that the writer had not sufficient knowledge of the subject about which he was writing, and a second letter at page 522 confirms that impression. First as to culture; I maintain Vanda cœrulea is easily grown. That it was considered difficult to manage twenty years ago is no reason why it should be stated to be difficult now; shutting one's eyes to the fact, that it is to be seen well grown in a score of public and private gardens near London. My own experience with it is this. I bought seven plants of it some eighteen months ago; they were the lowest priced ones, costing £3 for the lot, hence they are small. One of the smallest plants has a spike with twenty flowers; a larger plant has two spikes with thirty-one flowers. Two of the others have two spikes each, the remainder one spike each. The plants are grown at the lightest part of the Cattleya-house, where they get the greatest heat by day, and the coolest temperature at night. They are close to, indeed almost touching, the glass, at the south end, the part that catches most sun; but it is the end furthest from the boiler. "F." has now defined "a handsome flowering specimen" to be a plant 7 inches high, with one raceme having eleven flowers on it. I quite agree with "F." that the flowers are more handsome than those of Vanda cœrulescens, but they are not nearly so pretty. Is it a mere fancy of "F.," or is it a well ascertained fact, that the yellow spot, and the three longitudinal plates on the labellum of V. cœrulea "serve as guides to the fertilizing insects?" If the colours of the flowers were a guide to insects, what a confusion there would be amongst them in a house of Carnations in flower, but there is none.

## Orchids at Silverdale Lodge, Sydenham

The owner of this choice collection of Orchids, Walter Cobb, Esq., is an enthusiastic cultivator, and, with the aid of his gardener has succeeded in producing some wonderful specimens of good cultivation. The plants are kept in capital order, and all the surroundings scrupulously clean. I would like to say here that cleanliness has much to do with the successful culture of orchidaceous plants, and especially so in the neighbourhood of London. The wood and glass work of the houses become ingrained both outside and inside with dirt of a nature that sticks fast, and requires a good deal of rubbing to remove it. The leaves of the plants also become thickly spotted with "blacks," requiring washing with soapy water and a soft sponge several times a year. White scale, thrips, greenfly, and other troublesome pests must all be kept from the plants, else no success will be achieved worthy of the name. There is not much to be seen in flower in any collection at present, although there is always something in flower even in late autumn; but we generally begin the Orchid season with the Indian Crocuses and Pleiones. They are followed, or perhaps coeval with the white Masdevallias, and other choice winter flowering kinds. In Mr. Cobb's collection Vanda Sanderiana is in flower; one fine plant has three spikes with nineteen flowers on them. The longest spike has ten flowers open on it. This splendid acquisition has now proved itself to be winter-flowering, and when established does not seem to be of difficult culture; it requires to be grown, of course, in the warmest house. I had not previously seen the new Angræcum Leonis in flower; two small specimens were in flower, and very beautiful they were. When well established this species will be the most popular in the genus. A. Ellisii was producing a moderate-sized spike. Mr. Cobb is the owner of some very rare forms of Cattleyas and Lælias. There is in flower a species which we thought to be quite new; it may be a form of C. speciosissima, but it has flowers as large as a moderate-sized C. gigas, and not unlike that species in form, although the colours are more of C. speciosissima. The growths are very small and quite distinct. Two flowers have been produced on one spike. The petals are of a clear pale rosy-lilac colour, 2½ inches wide. The fringed lip is prettily marbled with purplish-crimson, the throat whitish. There is a pretty form of Lælia elegans, with white sepals and petals, but the purplish lip is distinct from that of the original L. elegans alba. Zygopetalum Gautieri was exceedingly pretty, the sepals and petals, of a green colour, were nearly covered with brown blotches, the lip rich blue. Lælia Dayana is a bright little species at this season of the year; a few plants suspended from the roof were very attractive. The sepals and petals rich rosy-purple, and the lip rich crimson-purple, are the characteristics of this species. *J. D.*

# ABIES GRANDIS.

The confusion in the nomenclature of our coniferous trees has arisen from imperfect information to begin with, from accidental misplacement of labels, from



Fig. 129.—Bracts of Abies grandis, to show their variability.

the separation in herbaria of branches from the cones, and other causes into which it is not necessary to enter. Suffice it to say, that each year, as the cones ripen and the trees come to maturity, we have the opportunity of clearing up some of the confusion that has arisen. It is for this reason that we now pub'ish

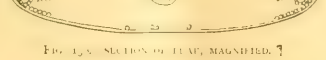


Fig. 130.—Section of leaf, magnified.

an illustration (fig. 128, p. 561) of the cones of A. grandis, produced at Penhryn Castle.

A. grandis forms in our plantations a particularly elegant tree of pyramidal habit with slender branches arranged in tiers, and with a long leading shoot, which gives a particular character to the tree The bark of

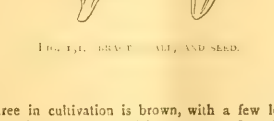


Fig. 131.—Leaf, bud, and seed.

the tree in cultivation is brown, with a few longitudinal sinuous cracks, glabrous, or at first thinly covered with short reddish-brown hairs. The buds are ovoid, but more elongate than those of the nearly allied A. Lowiana, and the bud-scales are pushed off in the form of a small cap. The side buds of the crown of buds at the end of the shoot start into growth earlier than the central bud does. The leaves on the lateral shoots of the year form apparently two ranks, but are probably arranged on the three-eighth plan. They are dark olive-green, the innermost or uppermost being shorter than the lower, and they are so arranged as to leave a bare space or parting in the centre. On the leader shoots there is not so much difference in the relative length of the leaves, and the inner or upper ones are somewhat appressed to the stem. The leaf in all cases is linear ligulate, blunt, notched at the apex, and channelled in the middle of the upper surface. The margins are rolled round on to the under surface, and between them and the mid-rib are two silvery bands marking the position of the stomata or breathing pores. The young shoots with the leaves are upturned, flat beneath and concave on the upper surface. For further details relating to the botany of the species we may refer to our article in these columns, February 5, 1881, where we had occasion to figure a native grown cone, and then added a description of the tree as grown here.

The form known as Gordoniana, from Vancouver's Island, is scarcely worth keeping up as distinct as the tree has an extensive geographical range, and, no doubt, varies considerably. The Gordon variety is perhaps handsomer, denser in habit, and of deeper colour than most of the specimens. We add the following extract from Sargent's *Forest Trees of North America*, and with it close our remarks on this species, the confusion concerning which is now well-nigh dispelled, though as much cannot be said of some of its near allies. Professor Sargent tells us that the tree is known as the White Fir, and that its distribution is from—

"Vancouver's Island, south to Mendocino County, California, near the coast; interior valleys of Western Washington Territory and Oregon, south to the Umpqua River, Cascade Mountains below 4000 feet elevation, through the Blue Mountains of Oregon (Cusick) to the eastern slope of the Cœur d'Alêne Mountains (Cooper), the Bitter Root Mountains, Idaho (Watson), and the western slopes of the Rocky Mountains of Northern Montana (Flathead region, Canby and Sargent).

"A large tree, 61 to 92 metres in height, with a trunk 0.90 to 1.50 metre in diameter, most common and reaching its greatest development in the bottom lands of Western Washington Territory and Oregon, in rich moist soil or moist mountain slopes, then much smaller, rarely exceeding 30 metres in height.

"Wood very light, soft, not strong, coarse-grained, compact; bands of small summer cells broader than in other American species, dark coloured, resinous, conspicuous; medullary rays numerous, obscure, colour light brown, the sapwood rather lighter; specific gravity, 0.3515; ash, 0.49; in Western Oregon manufactured into lumber and used for interior finish, packing-cases, cooperage, &c."

# CHRYSANTHEMUMS AT FINSBURY PARK.

This recently laid out park has since its commencement been very favourably esteemed by the inhabitants of the district during the summer months in consequence of its cleanly aspect and the high-class "bedding-out" with which it has been beautified. But at present there is the usual charm of the Chrysanthemum exhibition. This year we have no hesitation in stating that through the efforts of Mr. Mardlin, the head gardener, the Chrysanthemums are in as fine a state as heretofore. Over 1600 are grown, and it certainly says a great deal, when we state that few plants in the whole collection can be said to be of inferior quality. They are all or nearly so in 8-inch pots, dwarf, compact, and have that peculiar dull green leathery-looking foliage that denotes vigorous health and strong perfect blooms. Some of the blooms are certainly "out of the common," and although many persons may think that the neighbourhood of Finsbury Park is more favoured, on account of its high elevation, than other situations in and around the "smoke," we certainly think that the neighbourhood has its due share of drawbacks in various ways, best known to the dwellers in the district.

The old favourites are nearly all represented, and include good examples of the following:—Lady Selborne, one of the favourites with everybody; Refulgence, some grand examples of Elaine, 9 inches across, with an unusual quantity of petals of fine substance; Mrs. Heale, some splendid blooms of Comte de Germiny, Etoile Toulousaine, the lively coloured Tendresse, some fine showy plants of Flamme de Punch, Tisiphone, striking from its delicately formed petals and pleasing colour; fine examples of Emily Dale; Chang still holds its position as a telling variety, and ought to be in every collection; L'Or du Rhin, very pretty yellow; and Aurea Multiflora, another grand yellow; Monsieur Tarm, a very good pink; Mrs. George Rundle, with good blooms; also Hivre Fleur, Red Dragon, Prince of Wales, George Glenny, Queen of England, Soleil Levant, a grand old yellow or deep canary; King of Crimsons, a good old reflexed; Jane Salter, Margot, La Nymphe, very refreshing in a group; Lord Wolseley, Lord Derby, Criterion, Laciniatum, a very pretty little old variety, little grown now, but well deserving of a place in every collection; Princess of Wales, St. Patrick, Mr. Bunn, very good; Miss

Hope, rather a disappointing variety as a rule, is this year very good here. Amongst the newer varieties which have stood the test the best are Monsieur Boyer, a very lively salmon-pink bloom, though rather small; Monsieur Mousillac, a grand thing, very showy, of a deep rich crimson; Mastic, very choice canary, early; and Monsieur Henri Jacotot, another very brilliant crimson.

Of this year's novelties the finest were L'Or de France, a small showy orange-yellow; Colibri, a dull crimson, reverse of petals lighter; Monsieur Raux, after Colibri, but lighter; Fabian de Mediana, pretty tasselled bloom, light centre, ends of petals pink; M. Cochet, a neat light pink; Fernand Feral, a very good bright pink; Joseph Mahood, a grand yellow; Madame de Sevin, a very pretty bright crimson; Frijon, brilliant yellow; Rose du Matin, a pretty reflexed pink; Sœur Dorothée Saville, a very choice Japanese Anemone, Souvenir du Japon, light crimson, with curiously twisted narrow petals; and Emblem, a very good orange-yellow. The collection, being very tastefully arranged, presents on the whole a charming effect, and will bear comparison with most of the collections round London.

## DISEASE AND DECAY IN FRUIT.—III.*

### ASPERGILLUS GLAUCUS, LINK, AND EUROTIUM HERBARIORUM, LINK.

EQUALLY common with the blue mould fungus, Penicillium crustaceum, Fries, of fruit, preserves, &c., already described, is Aspergillus glaucus, Lk., and its second condition, Eurotium herbariorum, Lk. Like Penicillium crustaceum, Fr., Aspergillus spreads over various decaying substances, it causes one form of "mouldiness," and is extremely common on fruit, preserves, dry bread, cheese, lard, &c.

Aspergillus is the name of the brush used for sprinkling holy water in the Roman Church, and the name has been applied to the fungus before us from a fanciful resemblance between the two. Aspergillus resembles a mop in form rather than a brush; glaucus refers to the greyish-blue or sea-green colour of the spores. The general resemblance, as seen by the unaided eye, of Aspergillus to Mucor—a fungus which causes "mustiness," and to be next described—is shown by its synonyms, viz, Mucor glaucus, L, M. Aspergillus, Bulliardi, and Monilia glauca, Persoon. Its superficial resemblance to Penicillium is shown in the specific name of Penicillium glaucum, Grev.

A peculiar resting condition of Aspergillus glaucus, Lk., was for many years described as a distinct species of fungus, under the name of Eurotium herbariorum, Lk. At the present time Aspergillus and Eurotium are known to be merely different conditions of the same mould. The Eurotium grows on the same substances as the Aspergillus, and the former plant is the resting condition of the latter.

The name Eurotium is derived from a Greek word, and means mouldiness; herbariorum has been given to the perfect condition of the fungus because its perfect state is commonly best seen on damp plants, often in dried plants in herbaria. The resting form is also common on fruits, preserves, and other decaying bodies. The superficial resemblance of this condition of the fungus to Mucor is shown by one of its synonyms, viz, M. herbariorum, Pers.; another synonym is Farinaria sulphurea, Sow.; the specific name bears reference to the mycelium, which is often sulphury-yellow in colour.

Aspergillus bears the same relation to Eurotium as Oidium does to Erysiphe, the Aspergillus being (like Oidium) the conidium-bearing, or imperfect, simple, naked-spore-bearing state.

It is usual in botanical descriptions to give the imperfect or conidioid condition of a fungus first, I will therefore first describe the Aspergillus. Aspergillus chiefly grows on fruits, preserves, and decaying vegetable substances, often in company with Penicillium, already described, and Mucor, to be described next. It is one of the blue moulds of cheese, to which it gives one of the peculiar flavours so agreeable to some, so disagreeable to other persons. The "mouldy" odour from the spores, however, when they are produced in too great an abundance, is generally considered offensive. The mycelium, as seen by the unaided eye, partakes of various shades of white, yellow, verdigris-green, or glaucous blue. The mycelium, when seen on decaying fruits, preserves, &c., may all belong to Aspergillus glaucus, Lk., or possibly to this and some four or five other closely allied species or varieties, and to other fungi, as Penicillium and Mucor.

When a fragment of Aspergillus is placed under the microscope and magnified 200 diameters, it will be seen as at fig. 132. The mycelium is very sparingly and obscurely septate, and distinctly twisted in a screw-like manner, as shown at A, A. From the mycelium numerous slender shafts arise, as at B, B, B, each shaft being more or less twisted like a screw. Nothing is more common than twisting or circumnutation in fungi. Mr. W. B. Grove, B.A., has recently described and illustrated in the *Journal of Botany*, vol. xxiii., p. 165, an Aspergillus, extremely close to the one we are now examining, which he has named, on account of its twisting habit, Aspergillus spiralis, Grove. Each shaft of Aspergillus glaucus, Lk., is surmounted by a globose head, from which spring multitudes of spores or conidia, as shown at C, C, C. The heads which surmount the fertile filaments vary




FIG. 132.—DISEASES OF FRUIT: ASPERGILLUS GLAUCUS AND EUROTIUM REFENS.

in size according to the age of the filaments, as illustrated. These shafts or fertile threads, with their conidia, represent the growth, which is said to resemble the Romish sprinkling brush.

It should here be noticed that Aspergillus grows to about four times the height of Penicillium crustaceum, Fr., which is enlarged in fig. 56 and fig. 59, pp. 268, 269, to twice the scale of Aspergillus, viz., 400 diameters.

In Mucor the spores or conidia are all borne within the head or sporangium; in Aspergillus they are all borne in chains outside. The chains of conidia somewhat resemble those of Penicillium, but in the latter fungus the chains are continuations of branches from the main stem, whilst in Aspergillus the chains all radiate from the outside of the globose head.

In the illustration of the largest fruiting head of this fungus, all the chains of spores from the hemisphere facing the spectator have been removed, to show the form of the globose head with its obscurely reticulated surface, and the numerous little supports or spicules which bear the chains of conidia. The conidia are at first colourless, and as they approach maturity they vary in tint from a milky hue to that of verdigris-green. A fragment of a chain of conidia is shown, enlarged to 1000 diameters, at D, attached to one of the numerous minute supports belonging to the spherical head; part of this head is shown at E, each conidium is attached to its fellow by an extremely narrow septate neck, as at F. The conidia are produced in basipetal order, *i.e.*, new conidia are constantly produced from the globular head, and each new conidium pushes the older conidia further away from the supporting spicule; the consequence is, the conidia furthest away from the globular head are the first produced and the oldest. The conidia, of course, separate from each other at the septa or joints; they, however, do not separate very readily like Penicillium, but remain in the chain condition for a considerable time. The conidia germinate very readily by opening, generally at the side, and producing a germ-tube from which other minute shafts of Aspergillus quickly arise.

In Professor De Bary's often quoted essay on Eurotium, in the *Beitrage zur Morphologie und Physiologie der Pilze*, 1864, he illustrates an example of Aspergillus (as the type) with an unusually small head, about one half the diameter of the one I have given as a type; he also illustrates the conidia as globose or slightly oval in shape, and he omits the narrow septate neck between the conidia, and describes and illustrates the extremely minute supporting spicules as comparatively large and "peg-shaped" bodies, as large, or larger, than the conidia themselves. I have not seen the conidia and spicules as Professor De Bary has illustrated them, and I consider his spicules (sterigmata) to be really the first series of young conidia seated upon the minute true spicules, which he has overlooked.

It is necessary to point out these facts, as Professor De Bary's illustrations have been copied and recopied so many times that they are now to be found in every text-book of Europe. If new illustrations had been prepared from Nature, and new observations made, any possible inaccuracies of the plates I have mentioned would have been noticed and rectified, but, as I shall show further on, not only have inaccuracies been exaggerated by the copyists, but the copies have been published in such a manner that none but misleading representations of the fungus before us have been placed before students.

During the growth of the conidia certain other prolongations of the mycelial threads extend themselves in a screwlike manner, as shown at G. In these latter growths the twist or circumnutation of the threads is more marked than in the mycelium or the conidium bearing threads. As the apex of the club is reached the spiral turns grow closer and closer together, till the extreme end resembles a short hollow screw. The terminal growth of the thread is more clearly shown in fig. 133, A and B, p. 565, enlarged 400 diameters. It must be noted that the spirally twisted thread becomes more jointed or septate as the apex is reached, as shown. From the lower portions of the spiral slender branches now grow upwards, as at C, D, E, and become closely adpressed to the coil. Professor De Bary says the coil is a female organ (ascogonium), embraced by a male organ (pollinodium). Fusion no doubt sometimes takes place. Professor De Bary terms this fusion "conjugation," and says the protoplasmic contents of the spiral and the investing filaments, C, D, E, commingle. Sometimes filaments apparently identical with the investing threads grow low down on the spiral, as at H, J, fig. 132, and never reach the terminal cells. After this "conjugation" new filaments continue to envelope the spiral, till at last the spiral termination is quite covered, and it at length takes a globular form, somewhat similar with the analogous growth belonging to Penicillium crustaceum, Fr., as already described. This globular termination of certain filaments belonging to Aspergillus was at one time considered to be a distinct fungus, and was known as Eurotium herbariorum, Lk. A spiral termination enveloped by lateral threads, and so taking the Eurotium or globular form, is shown, enlarged 200 diameters, at K, fig. 133, p. 565.

When the infant Eurotium ball is once formed it quickly increases in size by the formation of new cells by the cell division of the outer cells inwards. This cell growth goes on until a minute ball the size of F (fig. 134) is formed, here shown in section and enlarged 400 diameters. The original investing cells are shown by somewhat thicker lines in the outer stratum at G, H, the newer cells are within, and the septate spiral coil is seen in the centre. Sprouting from the enmeshed coil at J, K, L, and

* See pages 51 and 268.

M are flask-like outgrowths; these are bags or asci, each containing eight spores or sporidia. As the production of the asci goes on the ball or perithecium increases in size, and the loose inner cells of the perithecium collapse and disappear. The asci within are nourished by and grow at the expense of the inner cells of the perithecium, exactly as in Penicillium and germinating Ergot. The asci also dissolve, till at length, when maturity is reached, the Eurotium ball consists only of its firm outer layer of brownish cells, and the free spores from the asci, exactly as in the sclerotium of Penicillium. This body belonging to Eurotium has as much right to be termed a Truffle as has the sclerotium of Penicillium. There is, however, no real resemblance to a Truffle in either case.

Three asci, each containing eight colourless spores, sporidia, ascospores, or seeds, taken out of the Eurotium growth, are shown, enlarged 400 diameters, at N, fig. 133. The asci in Eurotium are four times the size of the similar bodies in Penicillium, and the spores of the former are from two to three times the size of the spores of the latter. The spores themselves are at first globular, as shown at O, but when ripe they take the form of biconvex lenses, as at P, enlarged 1000 diameters, fig. 133. At germination the spore splits, as shown at Q, and a germinal filament is protruded, as at R, also enlarged 1000 diameters. The ascospores of Eurotium and Penicillium are remarkably alike in form.

Further growth of the ascospore is shown at S, enlarged 200 diameters; the mycelium rapidly spreads over any dry and decaying vegetable substance, soon begins to circumnutate or grow spirally, and throws up Aspergillus shafts as at T, exactly like the growths we commenced with, and so the life cycle is completed. No sooner is the Aspergillus produced, than a tendency to the screw-like growths of the infant Eurotium also begins to show itself, as at U.

Dr. Montagne was possibly the first to detect the asci of Eurotium. Dr. H. Reiss some years afterwards in *Botanische Zeitung*, August, 1853, appears to have (perhaps unwittingly) published Dr. Montagne's discovery as his own.

Dr. Montagne's protest against the requisition made by Dr. H. Reiss is so characteristic, that his words are here reproduced from the *Journal* of the Royal Horticultural Society of London, 1855, p. 121:—

"Eurotium laterium, found in the garrison bread by Dr. Rayer, in the peridia of which I have detected asci containing spores, though this genus was previously considered as producing only naked spores. A German botanist (*Bot. Zeit.*, 1853, p. 134), who has either not read, or forgotten my observation, has, after a lapse of four years, published this fact as new, though professedly passing in review all the writers who have spoken of Eurotium. The *Annales des Sciences Naturelles* is not, however, a publication of such obscurity as may justify a writer who has not consulted it. Some, doubtless, would have taken occasion to propose a new genus. We may, therefore, at least be thankful to him for his reserve."

The Dr. Rayer mentioned by Dr. Montagne is the keen observer who first detected the bodies in Potatos now known to be resting-spores of the fungus of the Potato disease.

Botanists differ considerably in their estimate of Professor De Bary's interpretations of the phenomena connected with the so-called "conjugation" of the spiral "female" thread termination and the "male" embracing filaments. M. Ph. Van Tieghem, in criticising these views in the *Bulletin de la Société Botanique de France*, 1877, vol. xxiv., writes:—

"Things happen as M. De Bary describes, but I have seen nothing at any period to authorise me to admit any fecundation"—*i. e.*, by supposed sexes. Further he writes:—"With regard to the supposed sexuality observed by De Bary between the summit of the carpogone (spiral) and the extremity of one of the branches issuing from the base, one knows that anastomosings, perfectly indifferent elsewhere, and without apparent result, take place frequently between the mycelial filaments of these plants. There is nothing astonishing, therefore, that a like occurrence should take place, and also be of indifferent results between certain branches which compose the young fruit. One would only be compelled to recognise the union as sexual if by the intrinsic characters or by remarkable or constant consequences it differed from ordinary anastomosings of the vegetable apparatus. This demonstration De Bary has not given."

Van Tieghem goes still further, and says that the mere fusion does not always take place, and if by accident the cells of the spiral termination and the cells of the investing threads become by "accident" fused, the fusion "is injurious, and determines the arrest of the development of the fruit." When fusion really takes place, Van Tieghem writes, "from that very moment an arrest of development" occurs.

Mr. W. B. Grove, B.A., in his *Synopsis of the Bacteria and Yeast Funoi*, says in reference to the nature of the so-called sexual growths of Aspergillus and Penicillium (p. 77), "But later investigators, *e.g.*, Van Tieghem, throw grave doubts upon the accuracy of even De Bary's observations, and he himself (*Beiträge*, iv., 1) seems to admit that he was mistaken."

The conidia in Aspergillus also frequently fuse in the style of the fusion of the secondary spores in Protomyces. The simple fusion of Protomyces is termed "conjugation" by Professor De Bary.

Van Tieghem, in short, considers the Eurotium ball to be a mere common Sclerotium, such as I have described under Penicillium; and with Van Tieghem's view I am inclined to agree, for I can see nothing in Eurotium but an ascus-bearing sclerotium, but little differing from the ascus-bearing sclerotium of Ergot, of a large number of Peziza and of Penicillium. An immature Ergot before the asci are protruded is comparable with Eurotium, and if we acknowledge a sexual process in the latter it must be extended to Ergot and many other sclerotia. It may be objected to this view that all sclerotia are (or rather should be) hard growths, as indicated by the name, but some sclerotia are soft and very loosely built up, and do not even require a period of rest, as the sclerotium of Mucor subtilissimus, B.

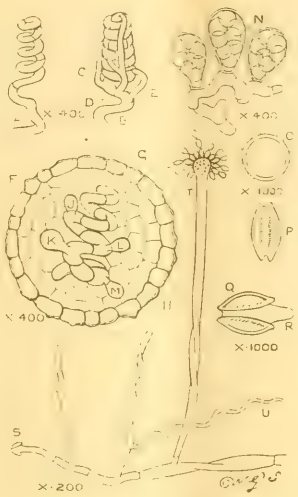



Fig. 133.—Diseases of fruit: Aspergillus glaucus and Eurotium repens.

The statements found in our text-books under Penicillium, Aspergillus, and Eurotium must be received with great reserve; no printed desciptions but the originals are indeed worthy of notice, for they are mere copies to which no verification, criticism, or even thought, has been applied.

In the same way as Penicillium has unwisely been placed with the Tuberaceæ, or Truffles—a set of fungi to which it is entirely foreign—so Eurotium has been as hastily grouped with the Erysipheæ, another group of fungi possessing entirely different characters from Eurotium. Erysiphe, a genus of fungi which causes the mildew of the Vine, the Hop, and other plants, will shortly be described and illustrated in the *Gardeners' Chronicle*.

In reference to the manner in which copies have been made of the original illustrations as published by Professor De Bary, we may instance Sachs' *Handbook* (English edit.), p. 257. Here a number of odds and ends are jumbled together, with no clue to the scales of the different representations. The figures are reversed; that is certainly of no great consequence, but they are taken from different plates, and some of the illustrations are enlarged to more than three times the scale of the others. The conidiophore is shown, according to the letterpress, without conidia, but with spicules only, but this is a mistake: the first, or two first rows of conidia are really illustrated, and the spicules overlooked. An ascus is engraved at the bottom of the plate in such an extremely awkward place—that it looks exactly as if it belonged to the mycelium of another figure closely adjoining which is only engraved as 190 is to 600. Now when other copies have been made from this already bad copy they have, in every instance known to me—and the instances are many—been reversed, as in Sachs', and the same odds and ends have been jumbled together with the conidiophore, said to be without conidia, and the ascus in the same unfortunate position, close to the mycelium, three times less than itself in scale, though drawn of identical diameter. To make confusion worse confounded sometimes Sach's plate has been photographically reduced to suit pages of various sizes, so that the different scales, misleading at first, have become still more confused. Copyism in such a style, although said to be sometimes "good," is by no means creditable to the copyists; it causes general disrespect to be shown towards the work of all English botanists, and it does an obvious and great injustice to Professor De Bary's work. There is no need to copy over and over again plates of such common fungi as Eurotium, Aspergillus, Mucor, and Penicillium, for these plants occur in all places at nearly every season of the year, and can always be easily procured.

As in Penicillium, already described, the conidia and spores of Aspergillus and Eurotium are at nearly all times so extremely abundant in the air that it is most difficult to preserve fruits and provisions from their attacks. The remarks made regarding the spores of Oidium on p. 51, and Penicillium, p. 268, generally apply to Aspergillus and Eurotium. Some further and concluding remarks on the spores of the whole series will be given in the fourth paper descriptive of Mucor. *Worthington G. Smith, Dunstable.*

## Home Correspondence.

**The Gourock Collection of Hybrid Gladioli.**—The collection of Gladioli shown by Mr. A. E. Campbell, of Cove Gardens, Gourock, N.B., at South Kensington, on October 13, was remarkable for the extent of the exhibit, comprising, as it did, 168 spikes, and also from the fact that the spikes had been cut late on the Saturday night previous, and packed in flat wooden boxes, twelve or thirteen spikes in a box, and the stems covered with damp moss. The spikes are cut within about a week of being fully matured, and this allows for travelling and exhibition for a few days. Mr. Campbell stated it was the first time he had sent spikes of Gladioli so far without being placed in water. How beautifully fresh they looked when staged was clearly apparent, and no one scarcely would have imagined they had been brought a distance of over 400 miles. Gourock is about two miles from Greenock, and when east winds prevail the smoke from this busy centre is blown on to the Cove Gardens. The latter are within 200 yards of the sea shore, and the soil is light and sandy on a gravel subsoil. The bulbs are planted out in March, and when the flower-spikes ascend they are tied out to stakes to prevent their being blown about by the wind. Not only were the spikes fine, but the individual flowers were large and handsomely coloured. Some of the varieties shown were raised by Messrs. Kelway & Sons, others by Mr. S. Dobree, another Somersetshire raiser; but the chief of them by M. Souchet. A selection of the best varieties comprises Adolphe Brongniart, Africaine, one of the darkest, Ambrose Verschaffelt, Archduchesse Maria-Christina, Atlas, Bicolore, Bremontier, Cameleon, Caprice, Carnation, Celimene, Colbert, Columbus, Crépuscule, Dalilah, Delicatissima, De Mirbel, Eclair, Felicien David, Flamboyant, Giganteus, Hercules, Hesperide, Horace Vernet, Jeannette, Lacapede, Leander, Leviathan, L'Unique, Violet, Mabel, Marquis of Lothian, Meyerbeer, Mount Etna, Ondine, Orpheus, Psyche, Rosa Bonheur, Rosea Perfecta, Schiller, Shakespeare, Sylvia, and Titania. This makes a very fine collection of just over forty

varieties, and a few of them are in all probability twenty and twenty-five years old, thus showing how some of the old varieties hold their own still. It may be added further, as a cultural suggestion, that Mr. Campbell lifts his bulbs at the beginning of December when there is a probability of severe frost, but when the weather is fine and drying the roots are lifted with a little soil adhering to them; they are put away in a cool and dry place, and when dry the bulbs are cleaned over for storing away for the winter. *R. D.*

A Hint to Gardeners.—Six weeks ago a man giving the name of Chas. Smith called upon me saying that he was destitute, that he had slept under the cover of boats on Brighton beach, and had tasted no food for two days; he had walked miles, but could get no employment. He said that if any one would only find him work, no matter what kind, he would feel thankful during the remainder of his days. Well, here is his idea of gratitude, after obtaining what many worthy men fail to obtain. I advanced him money to meet his pressing wants, gave him food and work, which he might have continued in until the completion of the new grounds here. Instead of which he quietly went away after receiving his week's wages in full, having requested me not to deduct money advanced, as he wanted to buy a coat. Since he left I have received numerous complaints from people who could ill afford to lose a few shillings. A man cannot prevent misfortune, but he might remain honest, and not a disgrace to the profession to which I am sure he belongs. *J. McDonald, Foreman to R. Upher, Esq., Landscape Gardener, Worth Park.*

Gardeners' Education.—As I have frequently seen the necessity of a better professional education for English gardeners urged in your valuable paper I have thought that it possibly might be of interest for some of your readers to see how horticultural knowledge is promoted in other countries. I will, therefore, give a short account of the course of instruction as carried out in the Royal High School of Agriculture in Copenhagen, an institution where I daresay gardening is treated more scientifically than is the case anywhere else. The aforesaid institution is a combined school for veterinary surgery, agriculture, horticulture, forestry, and surveying. Where it is necessary to do as much as possible with limited means this combination has great advantages. Several subjects are naturally common to different classes of students, such as geology and chemistry for agriculturists and horticulturists. In those cases the same teachers will do for the various classes, and yet be able to render the lectures more instructive than the case would be were there small independent professional schools. Attached to the school is a botanical, a fruit, and a vegetable garden, together with a horticultural museum; besides these there are collections illustrating the sciences taught, as a mineralogical collection, &c. It is expected that the student at his entrance has sufficient knowledge to be able to follow the instruction, that is, has frequented or has acquired the same education as if he had frequented a middle-class or grammar school; besides, scarcely any student of horticulture will enter without having had some years of practical experience. It is necessary to prove that degree of education only when he intends to apply for aid to enable him to carry out his studies. The subjects are physics, chemistry, geology, botany, zoology, surveying and levelling, drawing, plant pathology, and horticulture—the course lasting about a year and two-thirds. In the class in physics are taught the general principles of statics and mechanics, the theories of heat, electricity and magnetism, optics and meteorology, frequently illustrated by experiments. Chemistry is treated both theoretically and practically. In the department of inorganic chemistry are taught all the elements of any consequence, their qualities, symbols, equivalents, and their most common compounds, and instruction in the use of the chemical numbers for finding out the proportions of the elements in compounds, and the more prominent theories are also noticed. The lectures on organic chemistry comprehend the organic compounds generally found in plants and animals, and the most common products obtained from organic sources. The analytical chemistry treats of the tests for, and the methods of analysis of the principal substances. All lectures on chemistry are amply illustrated by experiments and specimens of the substances in question. In the practical course the student has to go through the different operations necessary in a laboratory, examine the various tests, and at last practise the analysis of inorganic and organic substances. When the course of instruction is finished, and has been properly attended, the student is able to analyse every substance common in daily life, or necessary to him in his profession, such as artificial manure, &c. In geology a general view is given over the earth-crust structure and genesis with a more special mentioning of the minerals that form the arable soils in Denmark. Special attention is paid to the physical and chemical qualities of the soils and subsoils, and their suitableness for different crops. In botany, anatomy, morphology, physiology, and plant geography are taught. To the explanation of the natural and the Linnean systems are attached exercises in describing and defining of plants. There is given an account of the more prominent plants, which are useful, of service in human economy. In the botany of forestry, a description is given of nearly all the trees and shrubs hardy in Denmark. The instruction is illustrated by living and dried specimens, the instruction being assisted from the beginning of May by weekly excursions into the country. In zoology special attention is paid to animals injurious to plants. The course of surveying and levelling is chiefly practical. Surveying is taught in the field, and the construction of plans from the paper calculations and dividing of areas; levelling is practised so far that the student is enabled to construct profiles and equidistant horizontal curves after his own work in the field. In drawing the pupil practises projectional drawing, drawing of garden tools and implements, and of the signatures necessary for garden plans. In plant pathology instruction is given on the more common plant diseases, especially those caused by parasitical fungi, and such as are caused by external agents, as frost, insects, unfavourable situations, &c., with the rational preventives. The introductory instruction in horticulture comprehends the principal outlines of plant physiology, the qualities of soil and manure, the choice of situations for gardens, and the means to improve unfavourable situations by lee planting, &c., the fencing in, and the propagating and cultivation of plants in general. The history and development of horticulture in Denmark, together with a description of the present state of gardening at home and abroad, are also afforded. In special horticulture the plants of the fruit and vegetable garden are described singly, with respect to their geographical extension, varieties, propagation, cultivation, and application. The instruction is aided by exercises in describing plants and fruits, by excursions, practical demonstrations, and exhibitions in the horticultural museum. At the end of each course an examination, comprehending all the subjects treated, except geology, takes place. This examination is verbal and public, with the exception of horticulture, which is conducted at three times: one examination, and two in writing and chemistry, of which there is one practical test; and drawing and surveying, which are practical. The practical test in chemistry is to analyse a solid or liquid which may contain organic as well as inorganic substances. The result of the analysis is to be accompanied by a written account of the method of proceedure. The practical test of surveying comprehends the levelling of an area of about 5-acres, a construction of a plan over the area with 1 foot equidistant curves, and a profile of the outlines, a calculation over the earth-work by the same areas, levelling and measuring on the paper a plan of a garden, and afterwards dividing it into given proportions. In drawing are required a projectional drawing, a drawing of a tool or implement, and a copy of a garden plan containing all the necessary signatures. *C. V. Larsen.*

The Acacia used at Masonic Funerals.—In reply to your correspondent "A. N.," respecting the Acacia used at masonic funerals, the following information may be of service. The true symbolic Acacia used by the Freemasons in their funeral service is A. nilotica, the Mimosa nilotica of Linnæus, but in place of this generally unprocurable species, Robinia Pseud-Acacia has to do duty in Britain; a very opposite purpose to that for which it is used in America, where the young lover breaks off a branch of the Robinia with its beautiful blossoms and presents it to his sweetheart to declare his first passion. If your correspondent would like to know the origin of the custom, viz., the use of the Acacia at masonic funerals and you would care to print it, I shall be happy to send you the same. [Please do so. Ed.] *W. E. Dixon, P.M.*, 294.

Tritomas.—On p. 534 "A. D. W." writes of Kniphofia Saundersi as having a dwarf habit, which assertion is incorrect, for evidently "A. D. W." writes of a plant not true to name. Kniphofia Saundersi has been distributed from my garden, and is a plant quite as stately as T. nobilis; the flower-spike is more cylindrical, over a foot long, and of a nearly uniform brick-red colour. The beauty of these plants will be appreciated still more when the newer forms which I have raised become better known; among these some have rich yellow flower-spikes, others blood-red protruding anthers; one is very dwarf and floriferous, another is the most giant form ever seen in Europe. *Max Leichtlin, Baden-Baden.*

# Reports of Societies.

## ROYAL HORTICULTURAL:

October 27 and 28.

An excellent show of Potatos, vegetables, and fruit was found at this meeting, and flowers were in sufficient numbers to brighten up the conservatory with their presence. Where we might have reasonably expected only mediocrity general excellence was found, for seldom have finer culinary vegetables been staged at an autumn show, and so extensive was the competition that many were debarred from taking prizes for first-class stuff for lack of prizes in the Royal Horticultural Society's schedule. The warmth of the soil, when aided by the welcome rains of September and this month, have done wonders for Potatos and vegetation generally.

### Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. J. Douglas, W. Bealby, J. Laing, J. Child, H. Herbst, J. James, T. Baines, J. Dominy, H. M. Pollett, E. Hill, H. Cannell, H. Ballantine, H. Turner, J. O'Brien, H. Williams, A. Perry, Shirley Hibberd, and Dr. Masters.

#### Certificated Plants.

Some pretty hybrid Calanthes were brought by N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne, viz., C. Alexandrii × C. Veitchii and C. oculata—the colour was rosy-crimson; the other was C. Cooksonii × C. Veitchii and luteo oculata, a light coloured flower, displaying, as did all of those shown, the conspicuous lip of C. Veitchii. These are useful additions to this late blooming genus. Messrs. J. Veitch & Sons, Chelsea, showed Cattleya autumnalis, with a tall spike of five dark purple blossoms. Mr. B. S. Williams, Paradise Nurseries, Upper Holloway, exhibited Sarracenia Buchanani, having a dwarf habit and dark rich crimson pitchers veined with lines of a deeper colour; Nepenthes Excelsior, a robust growing variety, bearing dark chocolate-brown and green pitchers, equal to holding half-a-pint of liquid; and the charming lemon-coloured Cymbidium elegans—the flower-stalks in this species are partially pendulous and the blooms tubular; the plant bore three spikes, which spring from the root-stock. Mr. Wright, gr. in the Middle Temple, Gardens, showed Chrysanthemum Val d'Andorre, a Japanese variety, with red and gold thread-like petals.

A Botanical Certificate was granted to Mr. Ballantine, The Dell, Egham, for Peristeria elegans, an ivory-white bloom, covered with minute reddish spots, the flower, Acineta-like, pushes out through the material surrounding the roots, and is found in numbers, from three, as in this specimen, to nine on a flower-spike.

#### General Floral Exhibits.

Messrs. J. Veitch & Sons showed the following novelties in Chrysanthemums:—Lakme, Melanie Fabre, as plants in bloom; and of C. Lady Rosebery three cut blooms, a good-looking lilac-coloured Japanese variety raised by Mr. Salter. Amasonia punicea was again shown by them, and likewise some pans full of small plants of the best varieties of Bouvardias, as General Garfield, Maiden's Blush, Alfred Neuner, Leiantha, Vreelandii, Priory Beauty, Umbellata Alba, some specimens of the now but little seen Eugenia Ugni, covered with its purple berries.

Mr. B. S. Williams showed the fine Bromeliad Æchmea imperialis, a strong-growing species, with much mealiness on the stout, channelled leaves; the flower-stalk and bracts are vivid rosy-crimson, and the inflorescence green; Sarracenia Fimbeaux S. psittacina and S. variolaris, the pitchers crimson and green, and quite dwarf.

J. Bateman, Esq., Worthing, showed Acacia retinodes, from the open air, as a proof that, at least amongst Australian species, there are some which can stand our climate in the south of the country. The shoots were still bearing a few flowers.

The New Plant and Bulb Company, Colchester, showed Nerine venusta in bloom, the orange-scarlet flowers making it a valuable autumn plant.

Mr. W. E. Boyce, Yerbury Road, Upper Holloway,

showed the rich orange-brown pompon Chrysanthemum Pomponius, very free, one of the best of its class.

Mr. R. Owen, nurseryman, Boyne Hill, Maidenhead, showed cut blooms of Japanese Chrysanthemums, mostly novelties, viz.:—Margot, Japanese, rose-pink; Harman Payne, Gloire Rayonante, Souvenir de Carre, rich brown, the reverse of the petals golden; Empress of China, pale rose, with broad florets; La Sureté, Seedling Begonias and Dahlias came also from this exhibitor, but judging from these late specimens, there was nothing of particular merit. A Vote of Thanks was accorded.

Messrs. H. Cannell showed Chrysanthemums and zonal Pelargoniums.

Mr. Forbes, gr., Dover House, Roehampton, had four new Japanese varieties of Chrysanthemums, good things mostly:—M. Leon Brunel, dead gold, tipped crimson; Mr. John Laing, red-brown, with a gold coloured centre, and the Violet-scented Beauté des Jardins, were handsome flowers, but the last named boasted of but little Violet scent, as was stated. Besides the Calanthes certificated Mr. Cookson sent C. Normani × C. rubro oculata and C. Veitchii, with a broad lip of white, and rosy-pink spot in the throat. Most of his Calanthe flowers were injured by frost, on the journey from Newcastle, consequently were not seen at their best.

Messrs. E. G. Henderson & Co., Pine-apple Nursery, Maida Vale, showed a collection of Nerines, the best being N. carminata and N. elegans cœrulea, the remainder having slaty tints, not altogether pleasing. Gesnera Hendersoni, with vivid scarlet tubular flowers, came from the same nursery.

A boxful of Tea Roses in excellent condition was sent by Mr. J. Ridout, gr. to T. B. Haywood, Esq., Woodhatch Lodge, Reigate.

Messrs. Hooper & Co., Covent Garden, were awarded a Bronze Medal for a collections of perpetual flowering Carnations, stocky plants, fairly furnished with blooms; nice scarlets were F. Raspail, Alegatière, Zouave, White Madame Carle, Chevalier, yellow, striped rose; Crimson Dr. Raymond, Gourdault, a slaty-red. Some of the seldom seen Nægelias and Tydæas were shown by the same firm, in good bloom for the season.

### Competing Groups.

There were but three of Japanese Chrysanthemums, the one by Mr. Stevens, nurseryman, Ravenna Road, Putney, being 1st. The group was composed of a few well chosen colours, and was placed on the landing at the foot of the stairs in the conservatory, occupying, therefore, a capital position for displaying it. 2d, Mr. A. Luff, gr. to R. R. Hyatt, Esq., Hetherset, Streatham, whose group contained more variety, but fewer specimens; 3d, Mr. Quartermain, gr. to C. E. Smith, Esq., Silvermere, Cobham.

### Cut Blooms.

For the best twenty-four cut blooms, single specimens, twelve Japanese and twelve incurved, the 1st prize fell to Mr. Ridout, whose stand contained fairly good blooms of rubro-striatum, Madame Rendatler, Augustine Gautier, Dr. Macary, Margot, L'Incomparable, Madame Sevin, Chang, Madame C. Andiguier, Nil Desperandum, White Venus, Lady Hardinge, Prince of Wales, Jeanne d'Arc, and Nil Desperandum; 2d, Mr. J. Lowry, gr. to J. McAndrew, Esq., Belmont, Mill Hill, whose Hy. Jacotot, Madame Rendatler, Monsieur Mousillac, L'Africaine, Monsieur Desbrieux, and Daimio were fine blooms: 3d, Mr. C. Goodge, gr. to G. G. Stone, Esq., Eastcote, Redhill, Surrey, all of whose flowers were of the Japanese section. The other exhibitors of cut blooms were Messrs. Owen, Skerrat, G. Stevens, and Davis.

### List of Certificates.

To N. C. Cookson, Esq, for Calanthe Alexandrii ×.
To N. C. Cookson, Esq, for Calanthe Cooksoni ×.
To Messrs. J. Veitch & Sons, for Cattleya autumnalis.
To Mr. B. S. Williams, for Cymbidium elegans.
To Mr. B. S. Williams, for Nepenthes Excelsior.
To Mr. B. S. Williams, for Sarracenia Buchanani ×.
To Mr. Wright, for Chrysanthemum Val d'Andorre.

## Fruit Committee.

Present: H. Veitch, Esq., in the chair; and Messrs. W. Paul, S. Ford, C. Ross, T. B. Hayward, J. Roberts, G. Bunyard, R. Hogg, J. Burnett.

Several seedling Apples were shown, but nothing was deemed to be of sufficient merit to obtain a Certificate. An Apple named St. Christopher, shown by Mr. Pritchard, Queen Street, Sittingbourne, a very long keeper, conical in form, of medium size, was thought so well of that the committee expressed a wish to see it again later. A small dessert kind, with the marks of good parentage, came from Mr. Cummings, The Grange, Wallington. Mr. C. Townsend, Fordham, Soham, sent six varieties of seedling Apples, which exhibited considerable similarity to each other. Seedlings came from Mr. Lancaster, gr., Holkham, Norfolk, five dishes of very high coloured fruits. Mr. W. Earley showed seedling Apple, very late keeper, coming in clusters, but varying greatly in size and colour. The fruits are commonly destitute of seeds, and it is a sort which will keep from August to June.

Messrs. Peed & Son, nurserymen, Roupell Park, Norwood, showed a red Plum, keeping in good order till late in the autumn; it is small, prolific, and fairly good in flavour.

Mr. W. Dance, gr. to Colonel Lowe, Halstead Place, Essex, showed a collection of fifty kinds of Apples and thirty of Pears, well grown and well coloured fruits. A Silver Banksian Medal was awarded.

## The Vegetables.

Not only was the average quality of those shown high, but in most cases the competitions were remarkably keen. Thus in the class for eight kinds of vegetables there were not less than sixteen lots staged—an unwonted number, and leaving far too many disappointed competitors, most of whose exhibits would at any ordinary show have obtained prizes. Here one of the leading exhibitors of vegetables, Mr. Miles, of Wycombe Abbey Gardens, was a good 1st, his entire collection being admirably arranged and faultless in quality. He had superb Autumn Giant Cauliflowers, Sutton's New Intermediate Carrots, Veitch's Exhibition Brussels Sprouts, Walker's Exhibition Onions, Dean's Chancellor Potatos, Syon Leeks, Stamfordian Tomatos, and good red Celery. Mr. Phillips, The Gardens, Cedars, Meopham, came 2d, having Incomparable White Celery, Syon Leeks, Maltese Parsnips, Aigburth Brussels Sprouts, Perfection Tomatos, Reading Onions, &c. Mr. Haines, Coleshill Castle Gardens, Wilts, was 3d. Several first-class cultivators had collections unplaced.

Turning to the single dish classes we found no less than twenty lots of Celery, in sixes, generally very fine and clean. Here Mr. Richards, of Somerley Park Gardens, Ringwood, was 1st, with a superb clean solid sample of Wright's White, as good as could be desired. Mr. G. Neal, gr. to P. Southby, Esq., Bampton, came 2d, with excellent sticks of Sulham Prize; and Mr. W. Smith, gr. to Lady Fletcher, Yalding, Kent, came 3d, with a solid, though less handsome, sample of Luckhurst Giant White. Sutton's Dwarf White Gem, neat but small, and Major Clarke's Red, were well shown by other exhibitors.

Parsnips were a remarkable show, not less than twenty-two half-dozens being set up. These varied considerably, from stout, handsome, fleshy samples, which the judges favoured, to long, tapering roots, some 3 to 4 feet in length, and nearly all tail. Here Mr. Richards was again 1st, with superb samples of Elcombe's Selected, whilst Mr. Haines had, apparently, in the 2d prize lot the same kind under the name of Improved Student, the same kind coming 3d.

Very handsome in form, and clean and pleasing in colour, were the eighteen half-dozens of Carrots, amongst which the Messrs. Sutton's fine new Intermediate figured prominently. Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Newbury, was 1st, with very handsome samples of that kind; Mr. W. Pope, Highclere Castle Gardens, coming 2d with the same kind; and Mr. W. Starke, gr. to the Earl of Ellesmere, Brockley, followed with even prettier, if not quite so fine, samples.

Turnips made the smallest show, having suffered from drought far more than other garden products. Mr. Richards had pretty white Snowball; Mr. Solas, gr. to H. C. T. Bell, Esq., Derby, had the same kind; and Mr. Wills, Edgcote Park, Banbury, was 3d with neat Sisweck's.

No less than twenty-five lots of Onions, in sixes, greeted the judges, and gave them a very difficult class to selet the best from. Eventually the honours fell to Mr. Neal, who had fine Anglo White Spanish, about 1 lb. each in weight, and very handsome; Mr. Wills came 2d with the same kind; and Mr. Aggis, gr. to the Earl of Effingham, Oxford, was 3d. Many of the bulbs shown, though fine, lacked that perfect *contour* found in the best lots. Rousham Park Hero, Pinesfield, and White Spanish were well represented.

A curious though very useful class was that for Brussels Sprouts, in plants, four of each, of which nine lots were shown; the best, a very erect, well furnished, and medium-sized sprouted sample, being simply a selected strain, from Mr. May, gr. to Captain Le Blanc, Barnet. This was a capital strain, and far before the huge sprouted forms commonly grown. Mr. Miles had the 2d best lot in the Edgcote, rather squat in height; and Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Trowbridge, was 3d, with taller plants of the Aigburth strain. Then there were twenty-two dishes of Brussels Sprouts, Mr. Lye having the best in solid clean moderate-sized samples of the Reading Exhibition; Mr. Lye having 2d place with Aigburth, also good; and Mr. R. Smith came 3d, with the same kind.

Endive in six heads, three each of curled and broad-leaved, did not make a striking show, as much better have been seen. The best came from Mr. Neighbour, Bickley Park Gardens.

On the other hand the show of Beet was excellent, no less than twenty-one lots being set up. Here Reynell's Exhibition, shown in perfect form by Mr. May, was 1st; Mr. Lye coming 2d, with good Dark Red, and Mr. Pope was 3d, with Dell's Crimson, very handsome and rich in colour.

There were twenty lots of three heads of Cauliflowers, many very large, but the 1st prize three, from Mr. Haines, were medium-sized, solid, and white; Mr. Miller following with rather larger samples, though first-rate; and Mr. Ellington, Mildenhall, Suffolk, 3d, with still bigger heads. Nearly all those exhibited were of the well known Autumn Giant variety.

Then came nineteen lots of Leeks, mostly huge white stems, the best being the Lyon, from Mr. Haines, Mr. Miles coming 2d, and Mr. Richards 3d, with wonderful samples.

Then there ten lots of Cabbages, the best coming from Mr. Osman of the District Schools, Sutton, with fine heads of Sutton's Allheart. Mr. Osman was also 1st, with a huge Drumhead Cabbage, capital cattle diet, and a monster example of vegetation.

Red Cabbages were capital samples, not too large, and very solid and highly coloured. Of these there were ten lots, the best again coming from Mr. Osman, whose samples were richly coloured, whilst Mr. Ellington and Mr. R. Smith were 2d and 3d.

Then came fifteen dishes of Tomatos, the best being Trophy, which took for Mr. Phillips 1st place. These were fine, handsome, and rich in colour. Hackwood Park and Excelsior were also well shown.

Some little interest attached to the show of Gourds, because of their curious forms. Mr. Osman had the best collection of twenty-five kinds, including the Pear-shaped, bottle-shaped, warted, Giant, and other forms; Mr. Glen, gr. to the Hon. Mrs. Montefiore, Crawley, Sussex, was 2d, and Mr. J. Sharpe, gr. to F. Hatchett, Esq., Grove Park, Kent, came 3d, with a smaller lot. From the Chiswick Gardens came a very five collection of many interesting varieties, including the Giant Gourd, White Italian, Red Etampes, and many other large forms.

### Potatos.

South Kensington had an unwonted feature in the competition in the various classes being close, and the samples large and excellent. There were fine collections of thirty dishes. Mr. Hughes, gr. to Colonel Cartwright, Byfield, Notts, was 1st with a superb collection, and included such popular kinds as The Dean, Vicar of Laleham, Edgcote Purple, Cardinal, Reading Russet, Rufus, Purple Perfection, of coloured kinds; and Chancellor, Captain, Colonel, Snowdrop, Fiddler's Prolific, Cosmopolitan, London Hero, Schoolmaster, and M. P., whites. Mr. Wills was 2d, with a fine lot, and Mr. W. Kerr, of Dargavel, Dumfries, 3d, with smaller, but very clean, fresh samples.

Then there were ten collections of twelve kinds, in which class Mr. Ellington, Mildenhall, was 1st, with good samples of Lee's Defiance, Grampian, Edgcote Purple, Lifeguard, coloured; and Snowdrop, Magnum Bonum, The Doctor, Chancellor, &c., white kinds. Mr. Wills was again 2d, and Mr. Hughes 3d.

In the class for six kinds there were fourteen lots, the best coming from Mr. Robins, gr. to E. D. Lee, Esq., Aylesbury, who had Schoolmaster, International, Reading Hero, Kidstock Beauty, Magnum Bonum, and Vicar of Laleham. Here Mr. Wills was again 2d, and Mr. Ellington 3d.

Messrs. Sutton & Sons, of Reading, offered special prizes for their Reading Ruby and Early Eclipse, but only four lots competed, the samples, with the exception of those from Mr. Donaldson, Keith Hall, Inverary, being small. This same exhibitor was 1st in the class for nine named kinds, prizes being offered by the same eminent firm. There were twelve collections. Mr. Donaldson had capital Lady Truscott, Favourite, Woodstock Kidney, Reading Hero, First and Best, Byfiyfold, &c. Mr. Haines came 2d, Mr. Howard, Canterbury, 3d, and Mr. C. Osman, 4th. Two good collections were disqualified because in each case one dish was not according to name.

Mr. C. Fidler, of Reading, gave prizes for four named kinds—Success, Prolific, Enterprise, and Reading Russet, eight lots competing, Mr. Hughes having the best samples, with Mr. Wills, Mr. Osman, and Mr. Ellington following.

The only foreign representative collection of Potatos came from the well-known Paris firm of Vilmorin & Co., who had a hundred dishes, inclusive of the curious and ungainly French varieties, and many popular English sorts; the samples generally were poor and show that English grown tubers are a long way ahead of Continental samples.

Of trade collections Messrs. Sutton & Sons had a fine one, including heaps of Magnum Bonum, Reading Russet, Reading Hero, &c., with a large number of selected seedlings, many of very promising appearance; also good dishes of standard kinds and seventeen of their own sending out.

Some very fine new Intermediate Carrots, Leeks, &c., were also shown. Mr. Fidler, of Reading, put up some 100 kinds of Potatos, mostly very fine samples, including White Elephant, Beauty of Hebron, Reading Giant, General Gordon, Vicar of Laleham, &c., and Mr. W. Kerr put up a very clean neat lot of 100 dishes that were highly meritorious.

The special prizes for Onions of four kinds, viz., Main-crop, Rousham Park Hero, Anglo White Spanish, and the Wroxton, offered by Mr. Deverill, of Banbury, brought some thirty lots. The three first-named kinds bear close family resemblance to the White Spanish, but the best examples were remarkably fine. The Wroxton is an oval shaped Onion, not unlike Bedfordshire Champion, but very fine and handsome as shown. The best came from Banbury district in all cases. It would be interesting to learn what very special culture, as differing from ordinary culture, is applied to the production of these fine prize samples.

## EXETER APPLE AND PEAR EXHIBITION.

The second Apple and Pear Exhibition at Exeter was held on Thursday and Friday, the 22d and 23d inst., in the Large Market, Fore Street. It was formally opened at noon by the Mayor of Exeter (W. Brown, Esq), attended by the Sheriff and Town Council. The exhibition itself was a perfect success. The quality of the Apples was remarkably good, considerrng the unfavourable season for the production of fine fruit. There were ninety-five exhibitors as against eighty last year. On the occasion of the first show the number of classes was fifty-three as against thirty-eight, and the entries 734 as against 532. The number of dishes of Apples staged for competition was 1708, representing 10,248 fruits. Pears were not so well shown as last year, only in few places in Devonshire are Pear crops reported good. The number of dishes shown was 328, or 1640 fruits. Besides the home county fruit was exhibited from Hereford, Kent, Somerset, and Oxford; and, as shown by the prize lists, the home county headed the prize list in every class, with the exception of a few single dishes where Messrs. G. Bunyard & Co. showed fruit grown

under glass. The trade-growers' as well as the amateur classes were strongly contested, and in every case capital collections were put up—Mr. C. Sclater, Devon Nurseries, Heavitree Bridge, Exeter; and Mr. H. Berwick, Sidmouth Nursery, sharing the 1st prizes in the classes allotted to them; also figuring largely in the open classes. The show of Apples, taken as a whole, was far superior to the one held in London by the Royal Horticultural Society, October 13 and 14; but the Pears fell much short. The arrangements for the exhibition were perfect in every way. The only drawback was the inclement weather prevailing on Friday, the day on which the committee expected their largest number of visitors; it poured with rain the whole day through.

Messrs. Veitch & Sons, nurserymen, Exeter, exhibited about 120 dishes of fruit, grown in their nurseries, true to name, and included all the best varieties in cultivation. They also contributed largely by loans of plants for decorating the tables—their Acers with their coloured foliage so suitable for intermixing with Apples.

Messrs. Lucombe, Pince & Co., staged some 300 dishes of Apples and Pears. This firm also contributed largely Ferns, Palms, &c., for the decoration of the tables.

### Apples.—Classes for Trade Growers.

Twenty-four dishes, distinct varieties (eight competitors).—1st, Mr. H. Berwick, whose collection was fine in every dish, but included Nelson's Glory and Warner's King, which are synonymous, was decidedly the best, but on account of the two varieties named being synonymous should have been disqualified; his other varieties were Buff Coat, Green Tiffing, Caroline, Dredge's Fame, New Hawthornden, very fine fruit; Dutch Codlin, Mère de Ménage, Lord Suffield, Cellini, Alexandra Russet, very fine and handsome; Emperor Alexander, good; Glory of the West, Hoary Morning, Brabant Bellefleur, good; Beauty of Kent, Hambledon Deux Ans, Blenheim Orange, very fine and well coloured; Reinette du Canada, Royal Russet, good; Waltham Abbey Seedling, good; Lane's Prince Albert, very fine; and Dumelow's Seedling, also fine samples. Mr. C. Sclater, Devon Nurseries, Heavitree Bridge, Exeter, was a good 2d. Included in his collection were very fine fruit of Beauty of Wilts, Stirling Castle, Alfriston, Tower of Glamis, Dr. Harvey, Cox's Pomona, beautiful colour; Annie Elizabeth, Cat's-head, Warner's King, Lady Henniker, Lady Waldron, Yorkshire Beauty, Red Ribbed Greening, very deep crimson, streaked, &c. 3d, Messrs. G. Bunyard & Co., Maidstone, Kent; extra, Messrs. J. Scott & Co., Merriott, Somerset.

Twelve dishes, dessert.—1st, Mr. Sclater, with a fine lot of fruit, all of good size and well coloured. His collection comprised Apricot, Red Ribbed Greening, a fine coloured Apple; Winter Warden (Aromatic Russet), Cornish Gillyflower, Devonshire Queen, beautiful deep crimson; Ribston Pippin, Blenheim Orange, well coloured; Court Pendu-plat, very fine dish; Ross' Nonpareil, Cox's Orange Pippin, King of the Pippins. 2d, Messrs. Bunyard & Co.; 3d, J. Scott & Co.

Twelve dishes, culinary (six competitors).—Again Mr. Sclater led the way with a very capital lot, including Annie Elizabeth, fine, and well coloured; Alfriston, Cat's-head, Pondsford (or Flanders Pippin), Gravenstein, Lady Waldron, Warner's King, Lady Henniker, very good; Emperor Alexander, Dumelow, very fine; Cox's Pomona, splendid colour; and Old Hawthornden. 2d, Mr. Berwick, who followed very closely: his Stirling Castle and New Hawthornden were remarkably fine; 3d, Messrs. Bunyard & Co.

### Tenant Farmers.

Nine dishes (ten competitors).—1st, Mr. A. S. Loram, Alphington, whose collection was almost equal to any in the show. He had Dumelow's Seedling, Lord Warden, Dredge's Fame, Brabant Bellefleur, Blenheim Orange, Royal Russet, best dish in the show; Royal Somerset, and a very large conical Apple called Loram's Seedling, of very fine size, and the colour of a perfect Mère de Ménage, quite distinct to anything seen at any of the fruit shows this season; 2d, Mr. Sclater, who followed very closely; 3d, Mr. J. Ham, Broadclyst.

Six dishes, Cider Apples (ten competitors).—A fine lot of clean and handsome fruit. 1st, Mr. B. Griffin, Broadclyst; 2d, Mr. W. Palmer; 3d, Mr. J. Ham.

### Private Growers with Gardener.

Eighteen dishes, distinct (twelve competitors).—1st, Mr. Garland, gr. to Sir T. D. Acland, Killerton, who staged a very fine lot of fruit, his principal dishes being Mère de Ménage, splendid fruit and well coloured, and Alexandra Russet, a fine handsome conical fruit; 2d, Mr. D. C. Powell, gr. to the Earl of Devon, Powderham Castle; 3d, Mr. Pinder.

Nine dishes, dessert (twelve competitors).—1st, Mr. H. Dowell, gr. to G. Carver, Esq., Bridgewater; 2d, Mr. A. C. Williams, gr. to W. C. Sim, Esq., Clyst St. George; 3d, Mr. Garland.

Nine dishes, culinary (eight competitors).—1st, Mr. Williams; 2d, Mr. Rowe; 3d, Mr. Garland.

### Private Growers without Gardener.

Three dishes, dessert (fourteen competitors).—1st, Mr. A. Truman, Countess Weir, who had fine fruit of Blenheim Orange, Cornish Gillyflower, and Cox's Orange Pippin; 2d, Mr. H. L. Brewster, Wrentham, Exeter; 3d, Mrs. Manley.

Three dishes, culinary (twelve competitors).—1st, Mr. G. Ward, Wroxton, Banbury, with Peasgood's Nonsuch, Warner's King, and Lady Henniker, all very fine; 2d, Mr. A. Truman; 3d, Mr. J. Blythe.

One dish, by Devonshire cottagers.—1st, J. Hitchcot; 2d, W. J. Gibbings; 3d, C. Dipilate.

### Open Competition.

Eighteen dishes, distinct (ten competitors).—1st, Mr. Powell, with a clean lot of fruit, including a fine dish of Peasgood's Nonsuch, well coloured; Lord Derby, Loddington, Warner's King, Ecklinville, Annie Elizabeth, Mère de Ménage, Reinette du Canada, Blenheim Orange, Lady Henniker, Royal Russet, Cox's Pomona, Galloway Pippin, Dumelow's Seedling, beautiful colour; Dredge's Fame, Old Hawthornden, Alfriston, Bedfordshire Foundling. 2d, Mr. C. Sclater, also with a capital collection; 3d, Mr. H. Berwick.

Twelve dishes, six culinary and six dessert (fourteen competitors).—1st, Mr. H. Berwick; 2d, Mr. Garland, 3, Mr. W. Scott.

Best flavour, single dish.—1st, Mr. Bunyard, with Cox's Orange Pippin; 2d, Mr. H. Berwick, with Ribston.

Heaviest six fruits (twenty-three competitors).—1st, Mr. W. Blackmore; 2d, Mr. R. Dennis, both with Warner's King, 6 lb. being the heaviest.

Single dish.—Alfriston (10 competitors), 1st, Mr. A. C. Williams, very fine; Blenheim (37), 1st, Mr. W. Blackmore, very fine, and well coloured; Golden Noble (13), 1st, Mr. A. C. Williams; Lord Suffield (17), 1st, Messrs. Bunyard & Co.; Norfolk Beefing (6), 1st, Messrs. Bunyard & Co.; Warner's King (16), 1st, Mr. H. Dowell; Dumelow's Seedling (22), 1st, Mr. J. Mingo, gr. to C. E. Ware, Esq., Cobham; any other sort, cooking (38), 1st, Mr. W. Mortimore, gr. to Colonel White Thompson, Broomford Manor, with very fine New Hawthornden; Cornish Gillyflower (20), 1st, Mr. C. Sclater, very fine; Court Pendu-plat (14), 1st, Mr. C. Sclater, extra fine; Cox's Orange Pippin (23), 1st, Messrs. Bunyard & Co., very fine and handsome, grown under glass; Gravenstein (10), 1st, Mr. C. Sclater; King of the Pippins (22), 1st, Messrs. Bunyard & Co.; Margil (8), 1st, Mr. Powell; Ribston Pippin (36), 1st, Mr. W. C. Lewin; Winter Warden (7), 1st, Mr. J. Stevens; any other sort dessert (46), 1st, Mr. J. Stenner, with Adams' Pearmain, good.

### Pears.—Trade Growers.

Six dishes, distinct (eight competitors).—1st, Messrs. Bunyard & Co., who had fine Beurré Clairgeau, Beurré Diel, Doyenné du Comice, Calebasse, Emile d'Heyst, and Uvedale's St. Germain; 2d, Mr. H. Berwick; 3d, Messrs. J. Scott & Co.

### Private Growers.

Six dishes, distinct (nine competitors).—1st, Mr. Garand, who did not show in his usual style, but had some very fine fruit of Pitmaston Duchess. He also had Beurré Diel, Van Mons' Léon le Clerc, Doyenné du Comice, Winter Nelis, and Marie Louise. 2d, Mr. Powell; 3d, Mr. H. Dowell.

Three dishes, dessert (twenty-two competitors).—1st, Mr. Powell, with fine Marie Louise and Louise Bonne of Jersey, and handsome coloured Beurré Clairgeau; 2d, Mr. Garland; 3d, Mr. James, gr. to Sir J. Walrond.

Three dishes, culinary (ten competitors).—1st, Mr. Gibson, gr. to Sir B. Samuelson, Brixham, who had splendid fruit of Catillac, Black Worcester, and Bellissime d'Hiver.

### Open Classes.

Single dish.—Catillac (11 competitors), 1st, Mr. Gibson, very fine; Uvedale's St. Germain (4), 1st, Mr. E. Prothero, Exeter; any other sort, culinary (11), 1st, Mr. E. Gibson, Black Worcester; Beurré Diel (14), 1st, Messrs. G. Bunyard and Co.; Chaumontel (8), 1st, Mr. J. Ham, fine color; Doyenné du Comice (5), 1st, Mr. W. J. Batteshill; Easter Beurré (9), 1st, Messrs. G. Bunyard & Co.; Glou Morçeau (7), 1st, Mr. W. J. Sweetland; Josephine de Malines (5), 1st, Mr. W. C. Lewin; Louise Bonne of Jersey (12), 1st, Mr. W. Sanders; Marie Louise (12), 1st, Mr. D. C. Powell, very fine dish; Pitmaston Duchess (5), 1st, Mr. W. J. Batteshill; Winter Nelis (7), 1st, Rev. J. T. Lewis; any other sort, dessert, (20), 1st, Mr. W. J. Batteshill, with a fine dish of Marie Benoist.

Six Quinces.—1st, Mr. C. Sclater.

Twelve Tomatos.—1st, Mr. D. C. Powell, with a fine and good coloured dish of Hathaway's Excelsior, grown in the open air.

Twelve Medlars.—1st, Rev. W. B. Wrey (Dutch variety).

## NATIONAL CHRYSANTHEMUM SOCIETY.

At a meeting of the Floral Committee, held at the Royal Aquarium, Westminster, on Wednesday, October 28, Mr. E. Sanderson, President, in the chair, and the following members being present:—Messrs. Ballantine, R. Dean, G. Gordon, G. Stevens, R. Davis, Lowry, Gibson, H. Cannell, Bevan, Butcher, Springbett, Mardlin, Barry, and W. Holmes, secretary, the following awards were made:—To W. Child, Esher, for large-flowered Anemone Chrysanthemum, Nouvelle Alvéole, a finely-formed and distinct pale purple variety, of a very promising character; to Mr. Wright, Temple Gardens, for Japanese Monsieur Freeman, and to Japanese Val d'Andorre, gold and orange-brown; to Mr. Forbes, Roehampton, for Monsieur Mousillac. The following were commended:—Madame Melanie de Favre, lively pale pink, very much reflexed, fine and distinct, from Mr. Wright, of the Temple Gardens; an unnamed seedling reflexed Chrysanthemum, of a pale purple colour and distinct character, from Mr. Springbett, of Cheshunt; and Japanese Fleur des Bois, deep bright red, small, but very fine in colour, from Mr. Forbes, Roehampton. The committee requested to see the following again:—Large flowering Anemone Grande Alvéole, blush or delicate pink, from Mr. Child; Japanese Monsieur Garnier, deep orange-cinnamon, the reverse golden-buff, very pretty indeed, from Mr. W. Holmes, Frampton Park Nursery, Hackney; Japanese Madame J. Laing, delicate flesh, with golden centre, large and full, quite distinct, the petals reflexed, the centre slightly incurved, from Mr. Wright, Temple Gardens; Anemone-flowered Japanese Bacchus, dark magenta, grand petals, the centre buff and crimson; and Japanese Monsieur Harman Payne, deep reddish cinnamon, the centre pale gold, very promising, from Mr. N. Davis, nurseryman, Camberwell.

Votes of Thanks were passed to Messrs. H. Cannell & Sons, nurserymen, Swanley, for cut blooms of Dahlias, Begonias, and very fine zonal Pelargoniums; to Mr. W. Boyes, nurseryman, Islington, for cut flowers of Chrysanthemums; and to Mr. R. Owen, nurseryman, Maidenhead, for the same. This was a very interesting meeting, and the appointment of a Floral Committee appears to be highly esteemed by the Chrysanthemum growers.

## The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, OCTOBER 28, 1885

| Month and Day | Barometer: Mean Reading Reduced to Sea-level | Barometer: Departure from Average of 18 years | Temperature of the Air: Highest | Temperature of the Air: Lowest | Temperature of the Air: Range | Temperature of the Air: Mean for Day | Temperature of the Air: Departure of Mean from Average of 30 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity, Sat = 1000 | Wind: Average Direction | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct | In | In | ° | ° | ° | ° | ° | | | | In |
| 22 | 29.43 | —0.29 | 59.3 | 39.0 | 11.3 | 44.2 | —4.5 | 40.9 | 82 | E.; E.S.E. | 0.02 |
| 23 | 29.76 | —0.45 | 48.0 | 40.4 | 7.6 | 44.6 | —3.7 | 42.9 | 94 | E.S.E. | 0.37 |
| 24 | 29.09 | —0.66 | 46.5 | 40.0 | 6.5 | 43.3 | —4.6 | 40.8 | 91 | W.; S.W. | 0.50 |
| 25 | 29.47 | —0.25 | 45.0 | 36.0 | 10.0 | 40.0 | —7.5 | 37.0 | 78 | W.; S.W. | 0.00 |
| 26 | 28.98 | —0.74 | 50.5 | 36.0 | 22.5 | 47.4 | +0.2 | 44.0 | 90 | S.W. | 0.18 |
| 27 | 29.21 | —0.52 | 48.5 | 43.5 | 5.0 | 45.0 | —1.9 | 36.2 | 71 | N.W. | 0.00 |
| 28 | 29.33 | —0.40 | 47.0 | 36.5 | 10.5 | 41.3 | —5.4 | 35.1 | 77 | N.W | 0.00 |
| Mean | 29.25 | —0.47 | 49.0 | 38.8 | 10.2 | 43.7 | —3.0 | 39.6 | 86 | Variable. | 1.05 |

Oct. 22.—Fine bright day, very fine night.
— 23.—Rain all day.
— 24.—Heavy rain in early morning, dull day, very fine night.
— 25.—Fine day, very fine night; lunar halo.
— 26.—Rain in early morning, short intervals of sunshine during the day, very fine night.
— 27.—Fine day; very fine night.
— 28.—Fine day, overcast at times.

London: *Atmospheric Pressure.*—During the week ending October 24, the reading of the barometer at the level of the sea increased from 30.12 inches at the beginning of the week to 30.17 inches by 9 A.M. on the 18th, decreased to 29.75 inches by 1 P.M. on the 21st, increased to 29.77 inches by 5 P.M. on the same day, decreased to 29.21 inches by 9 A.M. on the 24th, and was 29.31 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.75 inches, being 0.06 inch lower than last week, and 0.14 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 52°, on the 21st, on the 24th the highest was 46°.5. The mean of the seven high day temperatures was 49°.2.

The lowest temperature was 39°.0, on the 20th and 22d, on the 18th the lowest temperature was 42°. The mean of the seven low night temperatures was 40°.1.

The greatest range of temperature in one day was 12°.4, on the 21st; the smallest, on the 24th, was 6°.5. The mean of the seven daily ranges was 9°.1.

The mean temperatures were—on the 18th, 45°.4; on the 19th, 44°.7; on the 20th, 43°.7; on the 21st, 44°.8; on the 22d, 44°.2; on the 23d, 44°.6, and on the 24th, 43°.3; and these were all below their averages by 4°.3, 4°.8, 5°.6, 4°.2, 4°.5, 3°.7, and 4°.6 respectively.

The mean temperature of the week was 44°.4, being 0°.4 lower than last week, and 4°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 79°, on the 19th. The mean of the seven readings was 64°.4.

The lowest reading of a minimum thermometer

placed on grass was 32°, on the 23d. The mean of the seven readings was 35°.

*Rain.*—Rain fell on four days, to the amount of 0.92 inch.

ENGLAND: *Temperature.*—During the week ending October 24 the highest temperatures were 59°.5 at Wolverhampton 59° at Truro, 58° at Plymouth and Brighton; the highest at Bolton was 48°, at Sheffield 49°, and at Liverpool, 49°.2. The general mean was 53°.4.

The lowest temperatures were 33°.9 at Wolverhampton, 35° at Truro, 35°.2 at Bristol; the lowest at Nottingham and Leeds was 40°, and at Blackheath, Sheffield, Bradford and Preston 39°. The general mean was 37°.4.

The greatest ranges were 25°.6 at Wolverhampton, 24° at Truro 21° at Plymouth; the least ranges were 10° at Sheffield 11° at Leeds, 11°.1 at Liverpool. The general mean was 16°.

The mean of the seven high day temperatures was highest at Truro and Plymouth, 54°.3, at Brighton, 51°.5; and was lowest at Bolton, 45°.1, at Liverpool and Sunderland 46°.4. The general mean was 48°.9.

The mean of the seven low night temperatures was highest at Brighton, 42°.3, at Leeds 41°.4, at Truro, 41°.; and was lowest at Wolverhampton, 37°.8, at Bolton 38° 5, at Sunderland 58°.8 The general mean was 40°.1.

The mean daily range was greatest at Plymouth, 13°.4, at Truro 13°.3, at Wolverhampton 11°.; and was least at Liverpool, 5°.9, at Bolton 6°.6, at Leeds 6°.8. The general mean was 8°.8.

The mean temperature was highest at Truro, 46°.9, at Plymouth 46°.7, at Brighton 46°; and was lowest at Bolton, 40°.9, at Sunderland, 41°.7, at Wolverhampton, 42°.5. The general mean was 43°.7.

*Rain.*—The largest falls were 2.57 inches at Hull, 2.52 inches at Sheffield 2.08 inch at Nottingham; the smallest falls were 0.66 inch at Preston, 0.75 inch at Bristol, 0.79 inch at Bolton. The general mean fall was 1.46 inch.

SCOTLAND: *Temperature.*—During the week ending October 24, the highest temperature was 50°.5, at Paisley; at Edinburgh the highest temperature was 48°. The general mean was 48°.9.

The lowest temperature in the week was 21°, at Perth; at Leith the lowest temperature was 37°. The general mean was 31°.3.

The mean temperature was highest at Leith 42°.5; and lowest at Perth, 38°.6. The general mean was 41°.

*Rain.*—The largest fall was 0.48 inch, at Edinburgh; the smallest fall was 0.02 inch, at Geeenock. The general mean fall was 0.20 inch. No rain fell at Glasgow.

JAMES GLAISHER, F.R.S.

## Enquiries.

"*He that questioneth much shall learn much*"—BACON.

LIST OF EVERGREEN OR DECIDUOUS TREES AND SHRUBS.—Can any of your readers give a short list of evergreen or deciduous trees and shrubs suitable for New South Wales, in the district between the Murray and Lachland rivers, and in the vicinity of the townships of Oxley and Blanranald? *W. S.*

## Answers to Correspondents.

*** OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARDCHRON, LONDON." GARDCHRON *being written as one word. Telegrams thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

BEES: *J. R.* Get *Bee-keeping*, by Alfred Rusbridge. E. W. Allen, 4, Ave Maria Lane, London, E.C., 1*s*, 6*d*.

ERRATUM.—Messrs. J. R. Pearson & Sons have entirely given up Pear culture in pots, finding it very unprofitable. All their exhibits at the Pear Conference were gathered from open air trees, and not from pot-trees, as was stated in our report.

FILBERT BUSHES — IS IT NECESSARY TO GRAFT THEM, AND WHEN DO THEY BEAR? *W. W.* It is not necessary to graft Filberts or Cob Nuts, as they are raised on their own roots. When planted early, they carry a few small Nuts the first year, but must be cut back hard the next season, when they commence bearing again in the third year, if grown on the Kent system as basin-shaped bushes.

GOOSEBERRIES FOR MARKET: *Alpha.* For picking green the best sorts are Early White, Snowball, and Whitesmith. The number required per acre, at 8 feet apart, is 681.

INSECTS: *C. S. & Co.* We can find neither insects nor any traces or burrows of insects on the Larch shoots sent, which are much cankered, and we fear are not planted in a congenial soil. *J. O. W.*

LARGE AMERICAN BLACKBERRIES: *J. L.* Messrs. Cheal & Sons, Crawley, Sussex, are growers of these fruits.

LOBELIAS: *C. Gilbert.* See article on the Flower Garden this week.

MARK ON APPLE: *S. A. S.* Probably from some injury in the young state.

MR. WARNER: *A. W.* Broomfield, Chelmsford.

NAMES OF FRUITS: *Old Subscriber. Apple:* Old Nonpareil. *Pears:* 1, General Todtleben; 2, Huyshe's Victoria; 3, not recognised; 4, Passe-Colmar; 5, Chaumontelle.—*F. T.* 1, Flower of Kent; 2, Dutch Fullwood; 3, Hambledon Deux-ans; 4, Vicar of Winkfield; 5, Doyenné Gris; 6, Winter Windsor.—*L. P. J.* 3, Catillac; 7, Paradis d'Automne; 10, Forelle; 11, Vicar of Winkfield; 14, Beurré Chaneuses.—*W. F.* 1, Carlisle Codlin; 2, Cellini; 5, Emperor Alexander; 6, Devonshire Quarrenden; others not recognised.—*W. Cuthush & Son. Apple:* not recognised. *Pears:* 1, Knight's Monarch; 2, Chaumontelle. — *T. G.* 1, King Edward; 2, Beurré Diel; 3, Knight's Monarch; 4, Josephine de Malines; 5, Beurré Rance; 6, Brown Beurré.—*H. Kelsall.* 1, Uvedale's St. Germain; 2, 6, Beurré Diel; 3, Louise Bonne of Jersey; 4, Marie Louise; 5, Napoleon; 7, Round Winter Nonsuch; 8, Gloria Mundi; 9, Cellini; 10, Golden Knob; 12, Grange's Pearmain.—*G. G.* 1, King of the Pippins; 2, Dutch Mignonne; 3, Lord Derby; 4, 7, Dumelow's Seedling; 5, Royal Somerset; 6, Claygate Pearmain. *Pear:* 9, Beurré d'Amanlis. — *R. S.* 1, Duck's-bill; 2, King of the Pippins; 5, Blenheim Orange. *Pear:* Uvedale's St. Germain; others not recognised. — *C. & T. T.* 1, Sops-in-Wine; 2, Kerry Pippin; 3, not known—worthless; 4, Beurré Bachelier; 5, Bergamotte d'Esperen; 6, Grenadier.—*Dalson.* 1, Van Mons' Léon le Clerc; 2, Jersey Gratioli; 3, Beurré Diel; 4, Beurré Capiaumont.—*M. J. P.* 1, Adams' Pearmain; 2, King of the Pippins; 3, Pearson's Plate; 5, Northern Greening; 6, Beurré Hardy. — *G. Gascoigne.* 1, Louise Bonne of Jersey; 2, Beurré Rance; 3, Manx Codlin; others not recognised.—*F. & A. Dickson.* Your Apple is not Fearn's Pippin—may probably be Kirke's Schöne Rambour.—*G. J.* 1, Cider Apple, not known; 2, Verte Longue Panachée; 3, not known. — *F. M.* You have sent us over thirty sorts of fruit to name, although we repeatedly state in our columns that we will not undertake to name more than six at a time. We oblige you so far as we can this time; but by careless packing several of the numbers had become detached, so that we cannot identify them. 1, 13, Beurré Diel; 5, Vicar of Winkfield; 6, Duchesse d'Angoulême; 7, Marie Louise; 8, Louise Bonne of Jersey; 11, Beurré d'Anjou; 14, Van Mons' Léon le Clerc; 15, Pitmaston Duchess; 18, 27, Maréchal de la Cour; 23, Bergamotte d'Esperen; 24, Napoleon; 25, Beurré d'Aremberg; 29, Cox's Orange Pippin; 30, Dutch Mignonne; 33, 34, King of the Pippins.—*Sutton & Sons. Pear:* Emile d'Heyst.

NAMES OF PLANTS: *Alex. Cocker.* Nos. 1 and 3 appear to be starved growths of Asplenium Adiantum-nigrum Serpentini; 2, 4, are the ordinary form of Asplenium Adiantum-nigrum; 5, Asplenium marinum. —*R. V.* Maxillaria elongata.—*G. W.* 1, Cratægus cordata (Washington Thorn); 2, C. nigra; 3, C. aronia; 4, C. Celsiana; 5, C. punctata; 6, C. oxyacantha var. eriocarpa? 7, C. Layii; 8, C. pyrifolia.—*L. Maserul.* Cypripedium Fraserii and C. Arthurianum are unknown to us; Odontoglossum Alexandræ are known locally as "Blanco's."—*H. S. Ross.* Calanthe vestita ignea oculata.— *C. H.* Maxillaria picta.—*J. E. W.* Cymbidium giganteum.—*J. Bayne.* 1, Maranta Makoyana; 2, M. picta; Rhus Cotinus. We do not name Crotons.—*A. D. W.* Lonicera Xylosteum. The Fungi next week.—*A. Henderson.* Zygopetalum crinitum, Cymbidium giganteum, Cypripedium insignis, var perhaps Maulei.—*Old Subscriber.* Cupressus nutkaensis.— *Crookham.* 1, Libocedrus decurrens; 2, Cupressus Lawsoniana; 3, Retinospora squarrosa; 4, Chamæcyparis sphæroidea aurea; 5, Cotoneaster sp.; 6, Retinospora plumosa aurea; 7, Cryptomeria elegans.

NEW BOUVARDIA SPORT FROM DAZZLE: *R. B.* A nice variety, but not so good nor so floriferous as Flower of Beauty, which is the best pink Bouvardia grown.

SEEDLING APPLE AND PEAR: *T. D.* Both of very inferior quality for this season of the year.

TRANSPLANTING EUCALYPTI: *A. N.* It is too late by two months to transplant these to other spots out-of-doors. If you wish to take them up to keep in pots during the winter, to be finally set out in April or May, you may do so, keeping them in a temperate-house till somewhat rooted. Take them up with as much earth as will cling to the roots, a large ball of earth not being necessary to their well-being.

WALNUTS: *T. F.* The varieties will come up fairly true, but with a little variation. Grafting or budding is not at all successful. The Nuts should be planted where you intend them to remain, as they do not bear transplanting very well.

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## CATALOGUES RECEIVED.

ROBERT MACK & SON, Catterick Bridge and Scorton, Yorkshire—Catalogue of Roses.

KEYNES, WILLIAMS & CO., Salisbury—Roses.

LIVERPOOL HORTICULTURAL COMPANY, Carston, near Liverpool—Roses.

L. SPATH, Rixdorf, Berlin—General Price List.

F. & A. DICKSON & SON, Upton Nurseries, Chester—Select Roses.

PAUL & SONS, The "Old" Nurseries, Cheshunt, Herts—Roses.

W. SMITH & SON, Kintore and Aberdeen—Roses, Trees and Shrubs.

W. PAUL & SON, Paul's Nurseries, Waltham Cross, Herts—Roses.

ANDERSON, LANGBEHN & CO., 22, Rue de Dunkerque, Paris—Wholesale List of Cut Flowers.

M. TRUANT, Boulevard St. Cyprien, Poitiers, Vienne, France—Fruit and Forest Trees.

MM. DESFOSSE-THULLIERS ET FILS, Orleans (Loiret), France—Fruit Trees, Conifers, and General List.

H. CANNELL & SONS, Swanley, Kent—Roses.

RICHARD GILBERT, Burghley, Stamford—Fruit, Vegetables, Flowers.

FRANK CANT, Mile End Nurseries, Colchester—Roses.

R. TUCKER, Faringdon, Berks — Fruit and Forest Trees, &c.

J. WRIGHT, Gardener, Middle Temple, E.C.—Chrysanthemums.

FRED. BURVENCH, père, Gentbrugge, Ghent, Belgium—Fruit and other Trees, Shrubs, &c.

W. IRELAND, Barnstaple—Roses and Fruit, Forest and Ornamental Trees.

ED. P. DIXON, Hull—Roses, Fruit, Forest, and Ornamental Trees.

LENNOX T. DAVIS, Hillsborough, Co. Down—Hardy Trees and Shrubs, Fruit Trees, &c.

B. FIELD, Swan Place, Old Kent Road—Horticultural Soils, Manures, and Sundries.

T. WARE, Hale Farm, Tottenham—Roses, Evergreen and Flowering Shrubs, Trees, &c.

COMMUNICATIONS RECEIVED.—Sandy.—H. R.—A. N.—G. C.—Constant Reader.—Pomologist.—Greenwood Pine.—J. B.—C. A. M. C.—A. H.—W. J. (thanks).—W. E.—T. W.—J. J. W. 1 B. J. F. W. S. J. W. H. J. H. Krelage, Haarlem.—Messrs. Frœbel, Zurich.—F. Lehmann, Popayan.—J. S.—Sir J. W.—W. E. G.—Canon E.

DIED, at Darlaston Hall, Stone, Staffordshire, on October 25, JOSEPH DEVILLE, for many years Gardener to Lady Edwards, Wootton Hall, and also at Wyaston Leys, Monmouth; and the last three years at the above place. Mr. Deville was one of the old school of thorough practical gardeners; a most successful Pine grower, having taken many prizes at local and Regent's Park shows. He was very highly respected for his kind and genial manner by a large number of Staffordshire gardeners, who mourn his loss.

—— We also regret to hear of the death of Mr. W. H. LASCELLES, at his residence at Croydon, on Sunday last. He was a very successful horticultural builder, and an enthusiastic horticulturist. For many years he was the proprietor of the well-known business at 121, Bunhill Row, but retired from it several years ago to obtain much-needed rest.

## Markets.

*COVENT GARDEN, October 29.*

MARKET very quiet, with heavy supplies, and no alteration. Canadian Apples reaching us in fair supply, at low rates. Kent Cobs brisk at former quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0- | 3 0 | Melons, each | 0 6- | 1 6 |
| Damsons, ½ sieve | 3 0- | 3 6 | Peaches, per doz. | 3 0- | 8 0 |
| Figs, per dozen | 0 6- | 0 9 | Pine-apples, Eng., lb. | 2 0- | 4 0 |
| Grapes, per lb. | 0 6- | 3 0 | — St. Michael, each | 2 6- | 5 0 |
| Kent Cobs, 100 lb | 24 0- | 25 0 | Pears, per dozen | 0 9- | 1 3 |
| Kent Filberts, 100 lb. | 25 0- | | — per ½-sieve | 1 6- | 3 0 |
| Lemons, per case | 15 0- | 30 0 | Plums, ½ sieve | 1 6- | 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, Globe, per dozen | | 5 0- | Herbs, per bunch | 0 2- | 0 4 |
| Aubergines, each | 0 4- | | Horse Radish, bun. | 3 0- | 4 0 |
| Beans, Eng., per lb. | 0 4- | | Lettuces, Cab., doz. | 2 0- | |
| — French, per lb. | 0 9- | | Mint, green, bunch | 0 4- | |
| Beet, per dozen | 1 0- | | Mushrooms, basket | 1 6- | 2 0 |
| Brussel Sprouts, lb. | 0 4- | | Onions, per bushel | 3 6- | |
| Cabbages, per dozen | 1 6- | 2 0 | — Spring, per bun. | 0 6- | |
| Carrots, per bunch | 0 6- | | Parsley, per bunch | 0 4- | |
| Cauliflowers, English, per dozen | 1 6- | 3 0 | Radishes, per dozen | 1 0- | 2 0 |
| Celery, per bundle | 1 6- | 2 6 | Small salading, per punnet | 0 4- | |
| Cucumbers, each | 0 4- | 0 8 | Spinach, per bushel | 4 0- | |
| Endive, per dozen | 2 0- | | Tomatos, per lb. | 0 6- | 0 9 |
| Garlic, per lb. | 0 6- | | Turnips, bunch | 0 6- | |
| | | | Veget. Marrs., each | 0 3- | |

POTATOS.—Magnum Bonums, bad trade, 50*s*. to 80*s*.; Regents 60*s*. to 80*s*. per ton; German Reds, 2*s*. to 3*s*. 6*d*. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Aralia Sieboldi, doz. | 6 0 | 12 0 |
| Arbor vitæ (golden), per dozen | | 6 0 |
| — (common), dozen | 6 0 | 12 0 |
| Arum Lilies, dozen | 9 0 | 18 0 |
| Begonias, per dozen | 4 0 | 12 0 |
| Bouvardia, dozen | 12 0 | 18 0 |
| Chrysanth., per doz | 9 0 | 18 0 |
| Cyperus, per dozen | 4 0 | 12 0 |
| Dracæna terminalis, per dozen | 30 0 | 60 0 |
| — viridis, per doz. | 12 0 | 24 0 |
| Erica, various, doz. | 9 0 | 12 0 |
| Euonymus, in var., per dozen | 6 0 | 18 0 |
| Evergreens, in var., per dozen | 6 0 | 24 0 |
| Ficus elastica, each | 1 6 | 7 6 |
| Ferns, in var., dozen | 4 0 | 18 0 |
| Foliage Plants, various, each | 2 0 | 10 0 |
| Fuchsias, per dozen | 6 0 | 9 0 |
| Hyacinths, Rom., pot | 1 0 | 1 6 |
| Marguerite Daisy, per dozen | 8 0 | 12 0 |
| Myrtles, per dozen | 6 0 | 12 0 |
| Palms in variety, each | 2 6 | 21 0 |
| Pelargoniums, scarlet, per dozen | 2 6 | 9 0 |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. |
|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 |
| Arum Lilies, 12 blms. | 6 0 | 8 0 |
| Asters, 12 bunches | 4 0 | 8 0 |
| Azalea, 12 sprays | 2 0 | ... |
| Bouvardias, per bun. | 0 6 | 1 0 |
| Camellias, 12 blms. | 3 0 | 6 0 |
| Carnations, 12 blms. | 1 0 | 3 0 |
| Chrysanth., 12 blms. | 1 0 | 6 0 |
| — 12 bunches | 4 0 | 12 0 |
| Eucharis, per dozen | 4 0 | 6 0 |
| Gardenias, 12 blooms | 3 0 | 6 0 |
| Hyacinths, Rom., 12 sprays | 1 6 | 2 0 |
| Lapageria, white, 12 blooms | 2 0 | 3 0 |
| — red, 12 blooms | 1 0 | 2 0 |
| Lil. longifl., 12 blms. | 0 6 | 1 0 |
| Marguerites, 12 bun. | 3 0 | 6 0 |
| Mignonette, 12 bun. | 1 0 | 3 0 |
| Pelargoniums, per 12 trusses | 1 0 | 1 6 |
| — scarlet, 12 trusses | 0 9 | 1 0 |
| Roses (indoor), per dozen | 1 0 | 3 0 |
| — 12 bunches | 6 0 | 12 0 |
| Stephanotis, 12 sprs. | 5 0 | 9 0 |
| Tropæolum, 12 bun. | 1 0 | 1 6 |
| Tuberose, 12 blms. | 0 4 | 1 0 |
| Violets, 12 bunches | 1 0 | 1 3 |
| — Czar, Fr., bunch | 1 0 | 1 3 |
| — Parme, Fr., bun. | 4 0 | 5 0 |

## SEEDS.

LONDON: *Oct.* 28.—There was a meagre attendance of buyers on the market to-day, and the business doing was in very narrow compass. For red Clover seed a somewhat firmer feeling showed itself. The United States and Canada will apparently have no spare seed for export this next season. A fair quantity of yearling American red has been reshipped from European ports to New York. For bird seeds the sale is slow. There is no change in blue Peas or Haricot Beans. Winter Tares are neglected. Feeding Linseed keeps steady. *John Shaw & Sons, Seed Merchants 37, Mark Lane, London, E.C.*

## FRUIT, ROOTS, AND VEGETABLES.

COLUMBIA (East London): *Oct.* 27. — Moderate supplies, with fair demand for vegetables. Prices:—Apples, 2*s.* to 5*s.*, and Pears, 3*s.* to 6*s.* per bushel; Onions, 4*s.* to 4*s.* 3*d.* per cwt.; Parsnips, 9*d.* to 1*s.* 2*d.* per sieve; bunch Beetroot, 2*s.* 6*d.* to 3*s.* per dozen bunches; Brussels Sprouts, 1*s.* 9*d.* to 2*s.* per half sieve, 3*s.* to 3*s.* 6*d.* per sieve; bunch Celery, 7*s.* to 8*s.* per dozen; bunch Parsley, 1*s.* to 1*s.* 6*d.* per dozen; bunch Carrots, 2*s.* to 2*s.* 6*d.* per dozen; bunch greens, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Savoys, 2*s.* 9*d.* to 3*s.* 6*d.* per tally; Cabbages, 2*s.* 6*d.* to 4*s.* per tally; bunch Turnips, 2*s.* to 3*s.* per dozen; Carrots in sacks, 30*s.* to 50*s.* per ton; white Turnips, 50*s.* to 60*s.* per ton; Mangels, 22*s.* 6*d.* to 25*s.* per ton.

STRATFORD: *Oct.* 27. — Supplies have been good during the past week, as also the attendance of buyers, consequently a fair trade has been done at the following quotations:—Cabbages, 5*s.* to 7*s.*, Savoys, 4*s.* 6*d.* to 8*s.*, cut Collards, 3*s.* 6*d.* to 5*s.* 6*d.*, and Cauliflowers, 5*s.* 6*d.* to 9*s.* per tally; greens, bunch, 1*s.* 6*d.* to 4*s.* 6*d.* per dozen; Mangels, 18*s.* to 21*s.*, Turnips, 55*s.* to 70*s.*, and Swedes, 25*s.* to 35*s.* per ton; Carrots for cattle, 30*s.* to 32*s.* 6*d.* per ton; ditto, household, 35*s.* to 48*s.* per ton; Onions, 70*s.* to 100*s.* per ton.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Oct.* 27.—The trade continues dull, and only best samples are in demand. Even for these the demand was not large. Regents, 60*s.* to 80*s.*; Magnum Bonums, 60*s.* to 80*s.*; Early Roses, 70*s.* to 80*s.*; German Snowflakes, 45*s.* per ton.

COLUMBIA (East London: *Oct.* 27. — Beauty of Hebrons, 65*s.* to 70*s.*; Reading Heros, 60*s.* to 70*s.*; Early Roses, 60*s.*; Champions, 45*s.* to 52*s.* 6*d.*; Victorias, 55*s.* to 70*s.*; Regents, 50*s.* to 60*s.*; and Magnums, 50*s.* to 70*s.* per ton.

STRATFORD: *Oct.* 28.—Magnums, 47*s.* 6*d.* to 75*s.*; Regents, 50*s.* to 65*s.*; and Champions, 55*s.* per ton.

*Imports.*—The imports into London last week consisted of 2885 bags from Hamburg, 34 from Bremen, 31 from Rotterdam, 1 from Ostend, 2400 from Stettin, 5 from Amsterdam, 7 from Jamaica, and 703 packages from Ghent.

## HAY.

WHITECHAPEL: *Oct.* 27.—Trade exceedingly dull, especially for Clover, at a further reduction of 2*s.* in the top price. Clover, prime, 80*s.* to 105*s.*; inferior, 60*s.* to 80*s.* Hay, prime, 65*s.* to 92*s.*; inferior straw, 28*s.* to 38*s.* per load.

*Oct.* 29.—There was a large supply on sale. The trade was dull, at Monday's rates.

STRATFORD: *Oct.* 28.—Clover, 75*s.* to 110*s.*; meadow hay, 60*s.* to 90*s.*; and straw 29*s.* to 36*s.* per load.

## COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.* 6*d.*; Hetton Lyons, 16*s.* 6*d.*; Lambton, 18*s.*; Wear, 16*s.* 6*d.*; Tees, 16*s.* 6*d.*


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OF

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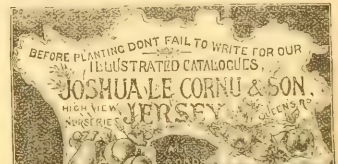
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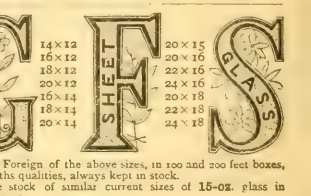
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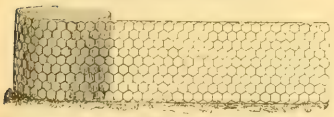



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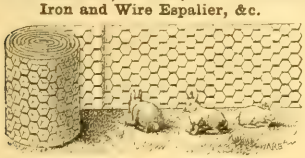
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| | No. 2 Medium | 18 | 0 6 | 0 9 | 0 12 | 0 15 | 0 18 | 0 27 | 0 |
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STEEL BARB WIRE.
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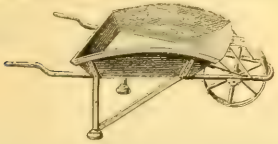
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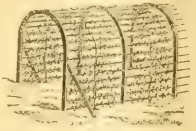
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GARDEN ESPALIERS—WALLS WIRED—IRON and GLASS WALL COVERS, or COPING—PEACH and VINE TRELLISES—FERN WALL TRELLIS—WIRE TRELLISES for CREEPERS—TRELLISED ARCADES—ROSERIES—SCREENS and DIVISION FENCES—RABBIT-PROOF FENCING—STRAINED WIRE FENCING, &c.

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GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest prices of WATSON AND SCULL, 90, Lower Thames St., London, E.C.

# Fawkes' Slow Combustion HEATING APPARATUS.

*Most efficient and cheapest in existence.*

Requires no sunk stokehole; will last all night without attention; will burn house cinders; costs nothing for fuel; is a tenant's fixture; any one can fix it; a domestic servant can stoke it. Price of Boiler to heat:—

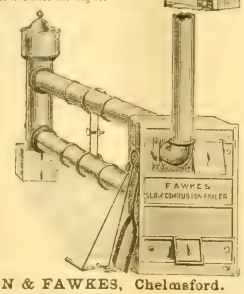
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Complete Apparatus, with 2 rows of 4-inch Pipe, from £4 12s. 6d.

The most complete apparatus manufactured. Numbers in use all over the country. Full particulars and prices of every sized Apparatus post-free The only slow combustion apparatus of the kind.

*Beware of incomplete inefficient apparatus, which will not last all night.*






*Specimen Testimonial.*

"I have given your Slow Combustion Boiler a good trial during last winter, and it has done its work in a most satisfactory manner. Your Boilers want but little attention, and consume almost anything."—D. Munro, *Gardener, The Chestnuts, Egham Hill, Surrey.*

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The Best Hot-water Apparatus.

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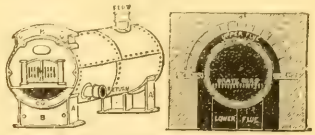
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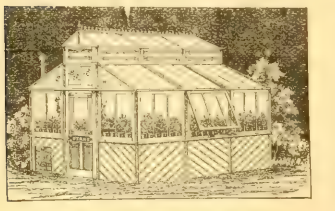
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PUBLISHING OFFICE and OFFICE for ADVERTISEMENTS, 41, Wellington Street, Strand, London, W.C.



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(*Design Registered, No.* 14,865.)



10 ft. long, 8 ft. wide, 10 ft. 6 in. high.

Price complete, with staging, coloured glass, gutter, and Loughborough Hot-water Apparatus. Erected complete within 15 miles of London Bridge, or delivered carriage free to any station in England.

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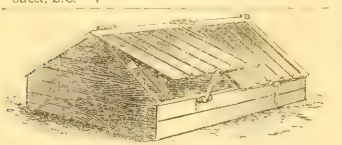
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**£28. £36 10s. £44 10s. £66.**

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Hothouse Builders and Engineers,
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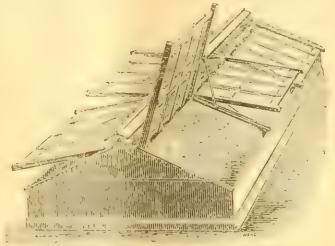


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Lights can be instantly removed or fixed open at any angle without interfering with the plants.

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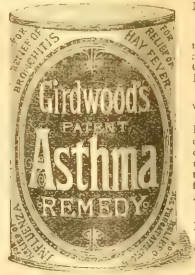
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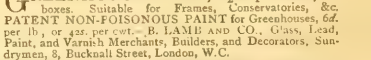
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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





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Sold in Casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s 8d. per gallon carriage paid to any Station in the Kingdom.

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ZADKIEL'S ALMANAC for 1886, the Year of Change.—Circulation over 140,000. Contains Voice of the Stars, Weather Predictions, Hieroglyphic. Zadkiel foretold the Russian Advance in Afghanistan, the Soudan Expedition, &c.
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WANTED, a good SINGLE-HANDED GARDENER. Wages 27*s.* per week.—C. J. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a thoroughly trained, SINGLE-HANDED GARDENER. Will have to look after one Horse and Carriage, and Drive occasionally. Must be very quick, active and industrious. Wages for the first year £30, with board and lodging in House.—Mrs. Y., Westfield, Little Shelford, Cambridge.

WANTED, a steady young Man, about 18 years of age, as IMPROVER. State wages and previous experience to GARDENER, Sugnall Hall, Eccleshall, Staffordshire.

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WANTED, an intelligent YOUTH, who has had some experience in a Florist's and Seedsman's. Must be active and willing to make himself generally useful. A good opportunity for improvement.—Address, with full particulars, age, &c., to Messrs. MORLE AND CO., 1 and 2, Penchurch Street, E.C.

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TO LANDED PROPRIETORS, &c.—A. MCINTYRE (late of Victoria Park) is now at liberty to undertake Formation and Planting of New Garden and Park Grounds, and Remodelling existing Gardens. Plans prepared. 115, Listria Park, Stamford Hill, N.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

GARDENER (HEAD), where three or more are kept.—A GENTLEMAN desires to recommend a Head Gardener to any one requiring a practical and reliable man.—A. A. D., 41, Wellington Street, Strand, W.C.

GARDENER (HEAD).—Thoroughly practical; good experience in all branches, including Orchids. Excellent testimonials. For further particulars apply to Mr. MCKAY, Maristow Gardens, Roborough, South Devon.

GARDENER (HEAD).—The Viscountess DOWNE, Dingley Park, Market Harborough, wishes strongly to recommend her late Head Gardener to any Lady or Gentleman requiring the service of a thorough practical, trustworthy, and energetic man, in all branches of the profession.

GARDENER (HEAD).—Mr. BENNETT, Vineyard, Potters Bar, can with confidence recommend a thorough practical man of twenty years' experience in first-class places, to any Nobleman or Gentleman requiring the services of a Gardener fully competent to take the Management of a good establishment.

GARDENER (HEAD WORKING).—Age 27, married when suited; total abstainer. Thirteen years' good practical experience in all branches. First-class references.—W. L. H., Redleaf Gardens, Penshurst, Kent.

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GARDENER (HEAD WORKING), or GARDENER and BAILIFF.—Age 46, married, no encumbrance; successful Grower of Grapes, Peaches, Melons, and Mushrooms; all kinds of Early and Late Forcing; a good Kitchen and Flower Gardener. Good character from last employer, and excellent testimonials.—E. W., 22, Gloucester Place, Cheltenham.

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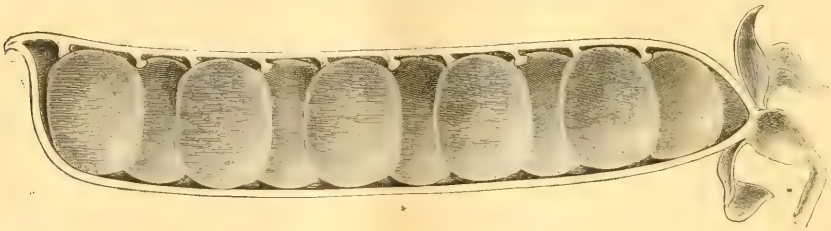
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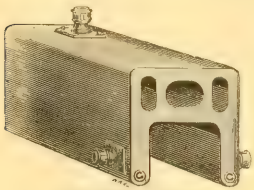


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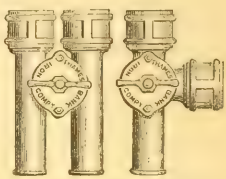
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THE

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## APPEAL TO THE BENEVOLENT

On behalf of Two Sisters, aged respectively 70 and 72 (the younger has been an invalid for many years), who have lived together all their lives. The leases of their property having fallen into the hands of the Ecclesiastical Commissioners some six years ago, they have vainly struggled since then to obtain a living by letting apartments, but the little money they had saved being now quite exhausted, and owing over a year's rent, make this Appeal, hoping to save their home from being broken up, and parting with everything they possess. Will any kind Friends help them in their deepest distress? The following Gentlemen have kindly allowed a reference to be made to them, and will give every information respecting the genuineness of this Appeal :—

Dr. MAXWELL T. MASTERS, F.R.S., 41, Wellington Street, Strand, W.C.
Mr. THOS. VERNON, *Weekly Dispatch* Office.
Mr. J. P. FULLER, 6, Weymouth Street, Portland Place W.
Mr. W. H. PERCY, *Weekly Dispatch* Office.
Mr. J. KEASLEY, 62, Saltoun Road, Brixton, S.W.
Mr. W. RICHARDS, 41, Wellington Street, Strand, W.C.

*Contributions will be gratefully received and thankfully acknowledged by* Mr. W. RICHARDS, "Gardeners' Chronicle" Office, 41, Wellington Street, Strand, W.C.

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**Sutton, Surrey.**

TWO DAYS' SALE of VALUABLE NURSERY STOCK and PLANTS, the Lease of the Old Nursery in Benhill Street expiring at Lady Day next

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. Potter to SELL by AUCTION, on the Premises, the Mid-Surrey Nurseries, Sutton, Surrey (adjoining the Railway Station, and partly also in Benhill Street), on WEDNESDAY and THURSDAY, November 11 and 12, at 12 o'Clock precisely each day, a large assortment of well grown NURSERY STOCK in capital condition for removal, consisting of 3000 Roses of sorts, specimen Tea Roses in pots, large quantities of fine Conifers and Evergreens in great variety; 2000 Laurels of sorts; Gooseberries, Currants, Poplars, Limes, Thorns, Chestnuts; other Standard Ornamental Trees in quantity, hardy Climbers in pots; 150 Camellias and Azaleas, including several good specimens; Euchsias, Hydrangeas; large Chrysanthemums in bloom; and a quantity of Stove and Greenhouse Plants and Ferns in variety.

May be viewed one week prior to the Sale. Catalogues may be had at either of the Nurseries, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

**Friday Next.**

UNRESERVED SALE of a CHOICE COLLECTION of ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from F. Sewell, Esq (of Flower House, Southend, Catford, about 4 miles from Sydenham Station, on THURSDAY, November 19, at 12 o'Clock precisely, the whole of the choice collection of STOVE and GREENHOUSE PLANTS, handsome Palms, Tree, Filmy and other Exotic Ferns, fine Crotons and Dracænas, Camellias, Azaleas, Stephanotis, a few Orchids, nearly new span-roof GREENHOUSE, capital Gold Medal BOILER, Hot-water PIPING, several FRAMES, 2 LAWN MOWERS, 80 Iron HURDLES, FENCING and GATES, Oil-cake CRUSHER, PLOUGH, iron Field ROLLER, nearly new Stack CLOTH, Park PHAETON by Hooper, Tumbril CART, Eight pure-bred Alderney COWS, and a valuable Pedigree Alderney BULL, from Fowler, Southampton; and numerous other items.

On view the day prior to Sale. Catalogues may be had on the Premises (of the HEAD GARDENER), or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

**Leytonstone, Essex, E.**

Two days' UNRESERVED SALE of beautifully grown NURSERY STOCK in great variety.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, on the Premises, The American and Fillebrook Nurseries, adjoining the Railway Station, on THURSDAY and FRIDAY, November 12 and 13, at 12 o'Clock precisely each day.

Full particulars in Catalogues, which may be had of the Auctioneers, 67 and 68, Cheapside, E.C, and Leytonstone, E.

**King's Acre Nurseries, Hereford.**

MESSRS. PROTHEROE AND MORRIS are instructed by The Cranston Nursery and Seed Company (Limited) (in consequence of the Land being required to extend the cultivation of Roses, as specialty of their establishment), to SELL by AUCTION, at their extensive Nurseries, King's Acre, near Hereford, on TUESDAY and WEDNESDAY, December 1 and 2, several Acres of first-class NURSERY STOCK, all in splendid condition for removal.

Further particulars will appear.

**Dutch Flower Roots.**

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

**Monday Next.**—(Sale No. 7011)

2500 HELLEBORUS NIGER.
3500 LILY OF THE VALLEY CROWNS.
600 LILIUM CANDIDUM, and other Plants and Bulbs from Germany.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on MONDAY NEXT, November 9.

On view morning of Sale, and Catalogues had.

**Wednesday Next.**—(Sale No. 7013)

CONSIGNMENT of CONIFERS from Germany.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 11, a consignment of 1100 RETINOSPORAS, THUIAS, CUPRESSUS, and other CONIFERS from Germany.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7014.)

CATTLEYA LABIATA, AUTUMN FLOWERING VAR.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, November 12, by order of Messrs. W. Thomson & Son, of Clowenford's, a nice plant of the true autumn-flowering CATTLEYA LABIATA, with flowers in sheath.

On view morning of Sale and Catalogues had.

**Thursday Next.**—(Sale No. 7014.)

VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, November 12, at half-past 12 o'Clock precisely, an importation of CATTLEYA AMETHYSTOGLOSSA and C. ACKLANDIÆ, in the finest possible condition; also a splendid lot of O. MOSSIÆ and C. SPECIOSISSIMA ERNESTI, ODONTOGLOSSUM ROEZLII and O. VEXILLARIUM, autumn-flowering varieties, &c.

On view morning of Sale, and Catalogues had.

**Cypripedium Sedeni.—Grand Specimen.**

MR. J. C. STEVENS will include in his SALE by AUCTION, on THURSDAY, November 19, the finest specimen in the country of CYPRIPEDIUM SEDENI, in pot 2 feet across, with 32 spikes (some branched), in splendid health.

On view morning of Sale, and Catalogues had.

**Orchids in Flower.**

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in FLOWER will take place on his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 19, and he will be glad if Gentlemen desirous of entering Plants for this Sale will please send particulars for Catalogue not later than Thursday next

**Streatham Park Nursery, Mitcham Road, Streatham, SURREY, S.W.**

SALE of SURPLUS STOCK.

MESSRS. PEED AND GREAVES are favoured with instructions from the well-known firm of Messrs. J. Peed & Sons to SELL by AUCTION, on the Premises, on TUESDAY, November 10, at 11 o'Clock precisely, the above well-grown surplus NURSERY STOCK, consisting of 500 Fruit Trees, 500 Standard and Dwarf Roses, 600 Forest Trees and Shrubs (several being fine specimens), comprising Planes Limes, Elms, Birch, Chestnut, and Poplars; 500 very choice Flowering Shrubs, 500 Laurels, &c.

May be viewed fourteen days prior to Sale, and Catalogues had at the Roupell Park Nurseries, Norwood Road, S.W.; on the Premises, and of the Auctioneers, Loughborough Road, Brixton, S.W.

WANTED, to RENT or BUY, in the North of England, or South of Scotland, a SMALL NURSERY and FLORIST'S BUSINESS.—C. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE DISPOSED OF, with Immediate Possession, a genuine SEED, FLORIST, and JOBBING BUSINESS. Nine Plant-houses, a moderate quantity of Land, and an Eight-roomed Dwelling-house, which may be had furnished.

Situate in the main thoroughfare of an important town, 20 miles from London (population 20,000).

J. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

NURSERY, 8 miles from London, Lease nineteen years, Rent £20 for the lot, about 1 Acre of Ground, nice double-fronted Cottage, recently built; price for lease, and three splendidly-built Glass Houses, one 120 feet long, one 110 feet, and one 100 feet, with six rows of Pipe, all nearly new, and well heated, only £500, part of which can remain at 5 per cent.

Apply, C. H. COWLES Woodford, Essex.

**Thornton Heath.**

In a prominent position, good locality, capital opening for a beginner.

WELL ESTABLISHED NURSERY, acre of Ground, five Greenhouses. Lease forty-two years. Rent only £12. No Stock.

Terms and particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

**West of England**

OLD ESTABLISHED SEED BUSINESS for DISPOSAL.—Central situation in an important city with extensive connection in several counties, principally Flower and Agricultural. Excellent opening.

Full particulars and terms of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

**Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.**

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

**WILLIAM CLAPHAM,**
SHAW HEATH, STOCKPORT,
*LANDSCAPE GARDENER and ROCK ARTIST.*

Has carried out many extensive works recently for Noblemen and Gentlemen. Can refer to Messrs. Sander & Co., St. Alban's, where work can be seen. Tufa formation, Sandstone, Natural Rockwork to suit any locality.

**To Nurserymen.**

THE WESTON-SUPER-MARE LOCAL BOARD are prepared to RECEIVE TENDERS for SUPPLYING the FOLLOWING SHRUBS, &c., required for the Planting and Laying-out of Clarence Park, and other Pleasure Grounds, on the sea front at Weston-super-Mare, Somerset, viz., SHRUBS:—Euonymus, Double Gorse, Ligustrum, Evergreen Oak, Tamarisk, Escallonia, Laurustinus, Weigelas, Ribes, Syinga, Veronica. FOREST TREES:—Larch, Scotch Firs, English Elm, Wych Elm, Oak, Beech, Copper Beech, Birch, Acacia, Laburnum, Chestnut, Spanish Chestnut.

Further particulars may be obtained from Mr. WILLACY, the Town Surveyor. Tenders, endorsed "Clarence Park, &c.," to be sent to me on or before November 10 inst.

WILLIAM SMITH, Clerk,

Town Hall, Weston-super-Mare, November, 1885.

**Beccles Burial Board.**

TO LANDSCAPE GARDENERS.

THE BURIAL BOARD for the Parish of Beccles, in Suffolk, invite PLANS and ESTIMATES of the COST of LAYING-OUT, FENCING, and PLANTING 5a. 2r. 20p. of LAND, adjoining the present Parish Cemetery, and intended to be added thereto. The Plan must be on a scale not less than the largest scale of the Ordnance Survey, and must be sent, together with the Estimate, to the Clerk of the Board, at his Office at Beccles, not later than December 25 next.

The Board will pay for the Plan which in their opinion is the best, and is proper and suitable to be adopted the sum of £10 10s., and for the next best Plan the sum of £5 5s, both Plans being the property of the Board.

The new ground is to be divided, as nearly as practicable into two equal portions—of which one is intended to be consecrated according to the rites of the Church of England, and the division between the consecrated and unconsecrated portions is to run from north to south. Further information may be obtained on application to the Clerk of the Board.

By order,
F. S. RIX, Clerk.

Beccles, October 29, 1885.

SEAKALE, for Forcing, superior selected Crowns. Price on application, and samples forwarded if required.

ALFRED ATWOOD, Market Gardener, 51, Shillington Street, Battersea, S.W.

WHINHAM'S INDUSTRY GOOSEBERRY, from the original Stock, held by the Subscriber. Quantity very limited. Price on application to THOMAS MATHESON, Nurseryman, Morpeth.

FOR SALE, Two Large SHADDOCKS, suitable for Conservatory, in Slate Tubs. No reasonable offer refused. J. G., Bayfordbury, Hertford.

GOOD BRIER STOCKS for Sale. App'y THOMAS RISPIN, Whitwell, Catterick, Yorkshire.

ISAAC DAVIES AND SON are still offering Surplus Stock at the Reduced Prices, as advertised October 1 and 24, viz., AZALEA MOLLIS Seedlings, and AZALEA PONTICA for Forcing; RHODODENDRONS of all descriptions, ANDROMEDA FLORIBUNDA, HOLLIES, SKIMMIAS, LILIUM AURATUM, &c.

Descriptive PRICED LIST on application.
Ormskirk, Lancashire.

J. VANDER SWAELMEN, begs to offer, per 100:—DRACÆNA TERMINALIS, nice and clean, 90s.; 100s.; AZALEA INDICA, fine budded variety, 100s.; FICUS ELASTICA, fine, 60s.; ASPIDISTRA, Green, 100s., clean store pots, 14s.; ARECA CRINITA (ACANTHOPHŒNIX), clean store pots, 50s.; PHŒNIX RECLINATA, store pots, 42s.; MARAGAGIPA COFFEE PLANTS, in single pots, 120s.

The Lily Nursery, Ghent, Belgium.

MR. DODWELL'S GRAND CARNATIONS, the finest grown. 2000 Plants, including Seedlings of this autumn, to be Sold for the benefit of the Prize Fund of the UNION CARNATION and PICOTEE SOCIETY.

Special terms to the Trade. Particulars on application.

Address—HEAD GARDENER, The Cottage, Stanley Road, Oxford.

# TURNER MEMORIAL PRIZES

AT A MEETING held in the Conservatory of the ROYAL HORTICULTURAL SOCIETY, South Kensington, August 11, 1885, SHIRLEY HIBBERD, Esq., in the Chair, a resolution, moved by the Chairman and seconded by Dr. MASTERS, F.R.S., was unanimously adopted to the following effect :—

"This Meeting is of opinion that the eminent services to Floriculture of the late Mr. CHARLES TURNER, of Slough, should be commemorated by means of Special Prizes for Florists' Flowers, Fruits, &c. ; and hereby resolves to promote the raising of a Fund, the interest of which shall be applied to carry into effect the said prizes, which shall be entitled TURNER MEMORIAL PRIZES ; the Fund, and all its incomings and outgoings, to be administered by a body of trustees or governors to be hereafter appointed."

It was further resolved that H. M. POLLETT, Esq., of Fernside, Bickley, Kent, be the Honorary Treasurer, and Mr. JAMES DOUGLAS, The Gardens, Great Gearies, Ilford, Honorary Secretary.

The importance of the present movement will be fully felt and understood by Horticulturists of all grades and tastes, for in every department and by men of all parties the name of CHARLES TURNER has been held in honour, both because of the high character and gentle manners of the man, and his earnest work as a practical and ever advancing Florist during a successful career of over fifty years. It is no part of the business now in hand to pronounce any eulogy, the object of this circular is to make a direct appeal to the horticultural public for the means of establishing the proposed TURNER FUND. The promoters feel that the cause carries with it all the persuasions needful to success, and they urge upon all sympathisers with its objects, the need of prompt attention in collecting subscriptions and forwarding them to the Honorary Treasurer without delay. Copies of this circular will be supplied wherever needed, and Gardeners are requested to bring it under the notice of their employers, the object being to make a formal and impressive public record of appreciative and affectionate regard for the memory of the most distioguished Horticulturist and Florist of the nineteenth century.

The SUBSCRIPTION LIST will CLOSE at the END OF DECEMBER, any person wishing to contribute will kindly forward the amount to the Treasurer as soon as convenient ; Head and Under Gardeners are earnestly solicited to subscribe.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE ! — COMMITTEE MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory : SCIENTIFIC, at 1 P.M., in the Lindley Library, on TUESDAY NEXT, November 10.

N.B.—Exhibitors' Entrance, east side of Royal Albert Hall.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

The President and Council of the Royal Horticultural Society invite all who are interested in the advancement of Horticulture and allied subjects, to meet them in the Music Room of the Inventions Exhibition on NOVEMBER 10, at 12.30 P.M., to confer with them on the subject of holding an INTERNATIONAL HORTICULTURAL EXHIBITION in London in 1887.

Admission by Principal Entrance, Exhibition Road.

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KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.

The NINTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 10 and 11, when, in addition to valuable Money Prizes, the CHAMPION CHALLENGE VASE, value TWENTY-FIVE GUINEAS, will be offered. Schedules and further information of

T. JACKSON, Hon. Sec.

Fife Road, Kingston-on-Thames.

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NATIONAL CHRYSANTHEMUM SOCIETY.

Royal Aquarium, Westminster, S.W.

GRAND EXHIBITION, NOVEMBER 11 and 12.

Schedule Gratis on application.

NOTICE.—Floral Committee Meetings at the Royal Aquarium, on November 11, 25; December 9; at 2.30 P.M., precisely. (Regulations see Schedule.)

WILLIAM HOLMES.

Frampton Park Nurseries, Hackney, London, E.

National Chrysanthemum Catalogue, *6d.* each.

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ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

The GRAND EXHIBITION of CHRYSANTHEMUMS, APPLES, PEARS, and other FRUITS, will open in St. James's Hall, Manchester, on TUESDAY, November 17. For Schedules, apply to the undersigned.

BRUCE FINDLAY.

Royal Botanic Gardens, Manchester.

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YEOVIL CHRYSANTHEMUM SHOW will be held in the Town Hall and Corn Exchange, Yeovil, on TUESDAY, November 17. The Prizes include a SILVER CUP value £5 (or preferred) for Twenty-four Blooms, Twelve Incurved and Twelve Japanese, distinct varieties; Two SILVER MEDALS, and Two Certificates of the National Chrysanthemum Society ; and more than Fifty other Prizes. Numerous Prizes are also offered for Table Plants, Grapes, Pears, Apples, Tomatos, Mushrooms, &c.

Schedules and Entry Forms can be obtained on application to C. TITE, Hon. Sec , Fairview, Yeovil.

IMPORTANT TO EXHIBITORS.—As the Bristol Show is to be held on Wednesday, November 18, and the Taunton Show on Thursday, 19th, Exhibitors will be able to attend all three.

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LINCOLN CHRYSANTHEMUM SOCIETY.

The THIRD EXHIBITION will take place in the Corn Exchange, Lincoln, on NOVEMBER 17 and 18. Entries Close on November 10. All-comers Prizes for Cut Blooms, &c., of £10, £5, &c. For Schedules and extra Prize Lists apply to

Dr. G. M. LOWE,
Mr. C. W. PENNELL, } Hon. Secs.

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TWICKENHAM HORTICULTURAL and COTTAGE GARDEN SOCIETY.

The AUTUMN EXHIBITION of CHRYSANTHEMUMS, &c., will be held in the Town Hall, Twickenham, on TUESDAY and WEDNESDAY, November 17 and 18. Schedules and all particulars of

Mr. A. AUFREY, Hon. Sec.

Cedar Villa, St. Margaret's, Twickenham.

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HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.

The SECOND ANNUAL GRAND EXHIBITION will be held in the Artillery Barracks, Hull, on THURSDAY and FRIDAY, November 19 and 20, when PRIZES to the value of ONE HUNDRED and THIRTY POUNDS will be offered for CHRYSANTHEMUMS alone, including a 1st prize of £10 for Forty-eight Blooms, coupled with the Challenge Vase, value £15 15s. : 2d prize, £8 : 3d prize, £5 : 4th prize, £2.

Entries Close November 12. Schedules may be obtained from the Hon. Secs.,

R. FALCONER JAMESON,
WM. HAWKSWORTH, } Queen's Dock, Hull.

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DERBY CHRYSANTHEMUM SHOW.

SATURDAY and MONDAY, November 21 and 23.

Entries Close, November 16.

Schedules and Entry Forms from

R. SLEIGH, Secretary.

63, Alexandra Street, Derby.

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THE CHORLEY CHRYSANTHEMUM SOCIETY will hold their SECOND ANNUAL EXHIBITION of CHRYSANTHEMUMS, PLANTS, CUT BLOOMS, FRUITS, &c., November 20 and 21. FIFTEEN POUNDS offered in Open Class. Prizes of £4, £2, and £1 for Cut Blooms, and other equally valuable prizes. Schedules from

THOS. S. KITSON, Hon. Sec.

5, Fellery Street, Chorley.

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LIVERPOOL HORTICULTURAL ASSOCIATION.

The SIXTH GRAND EXHIBITION of CHRYSANTHEMUMS, FRUIT, &c., will be held in St. George's Hall, Liverpool, on TUESDAY and WEDNESDAY, November 24 and 25. TWO HUNDRED POUNDS in PRIZES. ATEN GUINEA SILVER VASE, given by J. Williams & Co., Manure Manufacturers, 62, Mount Pleasant, Liverpool, for Thirty-six Blooms of Chrysanthemums. Entries Close Tuesday, November 17. For Schedules apply to

Huyton, Liverpool. EDWARD BRIDGE, Secre'ary.

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ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

APPLE and PEAR CONGRESS, to be held in the Waverley Market, Edinburgh, on NOVEMBER 25 and 26, 1885, and following days.

The Council of the Royal Caledonian Horticultural Society intend to hold a SPECIAL EXHIBITION and CONFERENCE on APPLES and PEARS, in connection with the SOCIETY'S NEW WINTER or CHRYSANTHEMUM SHOW, on November 25 and 26, 1885

To assist them in making the Exhibition and Conference a complete success, the Council respectfully solicits the hearty co-operation of all Fruit Growers.

Those who desire to contribute Fruit for Examination and Information, or otherwise to help the objects in view, will receive gratis on application to the Assistant Secretary, Mr. WILLIAM YOUNG, 18, Waverley Market, Edinburgh, the Official Circulars and Forms, and all other particulars.

JOHN STEWART, Hon Sec.

Edinburgh, October 1, 1885.

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**To Nurserymen.**

WANTED, LOWEST PRICE for Fifty good Norway SPRUCE, and Fifty Evergreen OAKS, grown on heavy soil, all 5 to 6 feet high. Must be delivered free to Muswell Hill Station, G.N.R.

Address F. M., 36, New Broad Street, City. E.C.

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FOR SALE, Nine large Specimens of STEPHANOTIS, true Elvaston variety ; also grand Specimen ALLAMANDA, CYPRIPEDIUMS, DENDROBIUMS, BOUGAINVILLEAS, &c., cheap. For size and price apply,

W. JACKSON, Blakedown, near Kidderminster.

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HYBRID RHODODENDRONS. — Fine Plants, 1½ to 2½ feet, all colours, mixed, some in bud, 40*s.* per 100.—W. JACKSON, Blakedown, near Kidderminster.

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FOR SALE, Two very handsome ARAUCARIA EXCELSA : height 15 feet, well proportioned, and handsomely furnished with foliage. Suitable for Conservatory or decorative purposes. Price and further particulars apply to HENRY BROWNE, Supt., Dartmouth Park, West Bromwich.

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NEW APPLES.

TYLER'S KERNEL.—First-class Certificate at the Apple Congress, Chiswick, 1883. Large, conical, greenish-yellow, flushed with red, firm, and mid-season, first quality ; one of the most handsome Apples yet introduced. Dwarf Maiden trees, 5*s.* each ; a few 2-year-old, 7*s.* 6*d.* each.

HEREFORDSHIRE BEEFING.—A valuable late keeping Apple, very handsome ; colour, deep red all over ; flesh, white, very firm, crisp and juicy ; will keep good until June ; excellent for dessert or culinary purposes. Dwarf Maiden trees, 2*s.* 6*d.* each ; dwarf 2-year-old trees, 6*d.* each ; a few Standards, 5*s.* each. Usual allowance to Trade.

CRANSTON'S NURSERY AND SEED CO. (Limited), King's Acre, Hereford.

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CHRISTMAS ROSES.

CHRISTMAS ROSES.

HELLEBORUS NIGER ANGUSTIFOLIUS, "Brockhurst" variety, pure white, very free, good grower, grand for Forcing and the best of the Christmas Roses. Strong clumps, 1*s.* 6*d.*, 2*s.*, and 2*s.* 6*d.* each ; 18*s.*, 24*s.*, and 30*s.* per dozen.

WM. CLIBRAN AND SON, Oldfield Nurseries, Altrincham ; 12 Market Street, Manchester.

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TO be SOLD, cheap, several thousand strong clumps of PRINCE ALBERT RHUBARB (true) Apply, stating price given, to

Mr. C. WOODHAMS, The Cottage, Earlsfield, Wandsworth.

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**Giants, Kings, Queens, and Emperors.**

THE MONSTERS among DAFFODILS.

"Extraordinary fine specimens from Ireland. Veritable Giants."—Vide *Gardeners' Chronicle*, April 25, 1885.

Six big weighty Bulbs for present planting, post-free, 9*s.* Two of each, 17*s.* 6*d.*—viz., Horsfield's King, Backhouse's Emperor and Empress, Pickstone's Big Welshman Trumpet Maximus, and Hartland's Golden Dragon. The above, with a copy of "Hartland's Original Little Book for 1885," post-free, with orders above 10*s.* 6*d.*—W. BAYLOR HARTLAND, Special Daffodil Grower, Seed Warehouse, 24, Patrick Street, Cork.

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# THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

*THE COMMITTEE beg to GIVE NOTICE that they have secured permanent Offices at*

**No. 50, PARLIAMENT STREET, WESTMINSTER, S.W.,**

*and it is respectfully requested that on and after the 14th inst. all communications may be addressed there.—By Order,*

EDWD. R. CUTLER, Sec.

*November* 3, 1885.

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NEW EUCHARIS.—A First-class Certificate was awarded on Tuesday the 13th Oct., to the new EUCHARIS MASTERSII, by the Floral Committee of the Royal Horticultural Society. Price 5*s.* each, 2 guineas per doz.

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

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EXTRAORDINARY BARGAIN. — 150 HERBACEOUS and BORDER PLANTS for 15*s.* 6*d.*, package free and carriage paid, including finest Pentstemons, Phloxes, Campanulas, Pyrethrums, Veronicas, Saxifraga, Delphiniums, Achillea, Matricaria, perennial Sunflowers, Carnations, Delsenes, &c. ; half 8*s.* 6*d.*, carriage paid. Cheapest lot ever offered.

HARKNESS AND SONS, Nurserymen, Bedale, Yorkshire.

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PINUS ARISTATA.—"A correspondent who has tried the nursery trade in vain" for the above Pine, may surely find it in many nurseries, but nowhere so cheap and so good as with

MORRISON BROTHERS, Aberdeen, who can give fine healthy plants, 6 to 9 inches, at 1*s.* ; 9 to 12 inches, at 2*s.* 6*d.* ; and 3 to 4 feet at 7*s.* 6*d.* each.

A LIST of all hardy Pines sent free on application.

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J. VANDER SWAELMEN begs to offer, per 100 :—HELLEBORUS, eight sorts, 40*s.* ; HEPATICA ANGULOSA, clumps, 40*s.* ; TROPÆOLUM PENTAPHYLLUM, strong tubers, 60*s.* ; SPIRÆA JAPONICA, strong, 10*s.*, 12*s.* ; S. PALMATA, strong, 20*s.* ; DEUTZIA GRACILIS, bushy, 12*s.*, 14*s.* ; ANEMONE NEM. BRACTEATA ALBA-PLENA, 8*s.* ; CARNATION, SOUVENIR DE LA MALMAISON, 32*s.* per 100 ; do., red-flaked variety, 12*s.* 6*d.* ; AZALEA, hardy Ghent, finest budded, mixture, 40*s.* ; MAGNOLIA SOULANGEANA, strong, 120*s.* ; Purple HAZEL, strong, 24*s.* ; Tree PÆONIES, four to six of the grandest varieties, 3*s.* each ; LILY OF THE VALLEY, strong flowering Crowns, 20*s.* per 1000 ; do., Pips for planting, 5*s.* per 1000.

The Lily Nursery, Ghent, Belgium.

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**Vines—Vines—Vines.**

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES ; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5*s.* and 7*s.* 6*d.* each ; Fruiting Canes, 10*s.* 6*d.* each.

The Vineyard and Nurseries, Garston, near Liverpool.

Telegraphic Address—"COWAN, LIVERPOOL."

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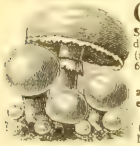
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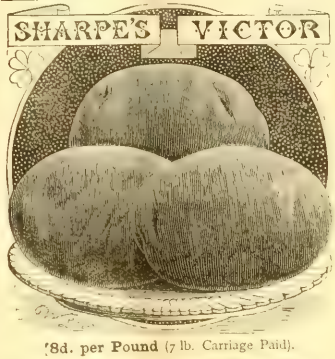
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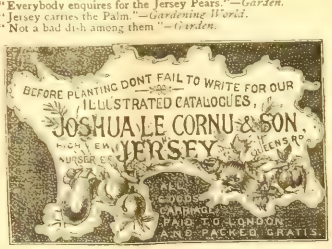
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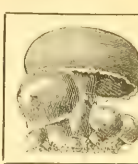
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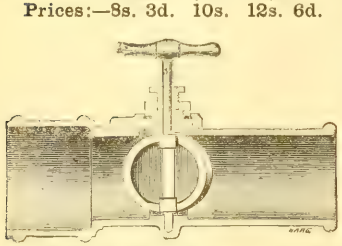


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## National Pear Conference,

*Royal Horticultural Society's Garden, Chiswick, Oct. 20 to Nov. 4.*

**NOTICE.**

## THE GARDENERS' CHRONICLE

FOR

*OCTOBER 17 and FOLLOWING WEEKS*

CONTAINS SPECIAL ARTICLES ON

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Contributed by the Leading Growers of the day, and Illustrated with numerous

ORIGINAL ILLUSTRATIONS.

*The issue for October 24 contains a*

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*Now Ready,*

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Almanac and Address Book for 1886.

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It contains, among many other matters, the following, viz.:—

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**FLOWERS, FRUITS** and **VEGETABLES** procurable each Month.

A carefully compiled **ALPHABETICAL LIST** of **NURSERYMEN** and **SEEDSMEN, FLORISTS, HORTICULTURAL BUILDERS, ENGINEERS,** and of the **HORTICULTURAL TRADE** generally.

**THE PRINCIPAL GARDENS, COUNTRY SEATS** and **HORTICULTURAL TRADE** in Great Britain and Ireland, arranged in the order of the Counties, extended and corrected to end of **OCTOBER.**

**ALPHABETICAL LIST** of **COUNTRY SEATS** and **GARDENS** in the United Kingdom, with Names of their **OWNERS** very much extended and corrected to date.

**ALPHABETICAL LIST** of **HEAD GARDENERS** in the Principal Gardens of the United Kingdom, with nearest Post Towns added.

**This LIST has been greatly AUGMENTED.**

**Lists** of **New Plants, Fruits,** and **Vegetables** Certificated during the Year.

37, SOUTHAMPTON STREET,
COVENT GARDEN, LONDON, W.C.

# ANTHONY WATERER

Invites attention to the following List of well-grown and properly rooted

## NURSERY STOCK:—

ABIES CANADENSIS, 4 to 8 feet, hundreds.
,, DOUGLASII, 3 to 6 feet, thousands.
,, DOUGLASII GLAUCA, 3 to 5 feet, hundreds.
,, HOOKERIANA or PATTONIANA, 3 to 5 feet.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
,, PARRYANA GLAUCA, 1½ to 3 feet, hundreds All from seed.
CEDRUS ATLANTICA GLAUCA, 3 to 6 feet.
,, DEODARA, 6 to 9 feet, hundreds.
,, LIBANI (Cedar of Lebanon), 4 to 5 feet, hundreds.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5 to 8 feet, thousands.
,, LUTEA, 3, 4 and 5 feet, hundreds.
JUNIPER, Chinese, 5, 8 to 12 feet.
PICEA CONCOLOR, 2 to 5 feet, hundreds.
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet, hundreds.
,, NORDMANNIANA, 4, 6, 7 to 10 feet, hundreds.
,, PINSAPO, 7 to 10 feet, hundreds.
PINUS AUSTRIACA, 3 to 3½ and 4 feet, well furnished and transplanted October, 1884, thousands.
,, CEMBRA, 3, 6 to 8 feet, hundreds.
RETINOSPORA OBTUSA AUREA, 3 to 6 feet.
,, PISIFERA AUREA (true), 3 to 6 feet.
,, PLUMOSA AUREA, 2 to 5 feet.
THUIOPSIS BOREALIS, 4 to 6 feet, hundreds.
,, DOLOBRATA, 3, 4, and 6 feet, hundreds.
THUIA LOBBII, 4 to 5 feet, hundreds.
,, OCCIDENTALIS LUTEA, 5 to 6 feet
,, SEMPER AUREA, 2½ to 3 feet, hundreds.
YEWS, Common, 3, 4, and 5 feet, thousands.
,, Common, 6 to 10 feet, hundreds.
,, Golden, of all sizes up to 10 feet.
We have many thousands as Pyramids, Globes, and Standards, in point of variety and size unequalled.
,, Golden, Seedlings, 3, 4, 5, to 8 feet.
,, Irish, 5 to 10 feet, hundreds.
,, Irish, Golden, Seedling, 3, 4, and 5 feet.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet, thousands.
RHODODENDRONS, 3, 4, 5, 6, 8 to 10 feet, thousands of finer plants than can be found in any other Nursery.
☞ The fine Standard and other Rhododendrons annually planted in Rotten Row, Hyde Park, are supplied by ANTHONY WATERER.
KALMIA LATIFOLIA, healthy and well furnished plants, 18 to 24 inches, showing from twelve to thirty trusses of bloom.
AUCUBA JAPONICA, 2½ to 3 feet, hundreds.
BAMBUSA METAKE, fine clumps, 5 to 8 feet high, transplanted spring, 1885, hundreds.
BOX, Green and Variegated, 4, 5, 6 to 7 feet, thousands.
HOLLIES, Common Green, 3, 4, 5 up to 10 feet, thousands.
,, ALTACLARENSE,
,, HODGINS,
,, LAURIFOLIA,
,, MYRTIFOLIA,
,, SCOTTICA,
} 3, 4, 5 up to 10 feet, many thousands.
,, Yellow-berried and other sorts.
,, Variegated, of sorts, 3, 4, 5 up to 10 feet, thousands.
,, Golden Queen, 3, 4, 5, 6, 7 to 10 feet, hundreds of beautiful specimens.
,, Silver Queen, 4 to 10 feet, splendid specimens.
,, Weeping, Perry's, on straight stems, with heads of ten to fifteen years' growth, hundreds.
,, Weeping, New Golden, a large quantity of beautiful plants.

The following trees have stout, straight stems, fine heads, and splendid roots, and have all been transplanted within two years:—
ACACIA BESSONIANA, 6 to 10 feet.
ACER DASYCARPUM, 13 to 15 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet
,, RETICULATUM, 8 to 10 feet.
,, SCHWEDLERI, 12 to 14, and 14 to 16 feet.
,, WORLEYII, Standards, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, 9 to 12, and 12 to 14 feet.
BIRCH, Silver, 12 to 14 feet.
,, Purple, 14 feet.
CHESTNUT, Horse, 14 to 16 feet.
,, Horse, Scarlet, 12 to 14 feet.
,, ,, Double, 10 to 12 feet
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 10 to 12 feet, 12 to 14 feet, and 14 to 16 feet.
,, Silver-leaved, 12 to 14 feet.
LIQUIDAMBAR, 6 to 8 feet.
ASH, Mountain, 10 to 12 feet.
MAPLE, Norway, 14 to 16 feet.
OAKS, American, 12 to 14 feet.
,, English, 10 to 12 feet.
PLANES, 14 feet and upwards.
POPLAR CANADENSIS NOVA, 12 to 15 feet.
,, BOLLEANA, 8 to 10 feet
SYCAMORE, Common, 14 to 15 feet.
,, Purple, 15 to 16 feet.
,, Variegated, Standards, 10 to 12 feet.

**Weeping Trees.**

BEECH, Weeping, Pyramids and Standards, 10 to 12 feet.
,, Weeping, Purple (true), Standards, 8 to 10 feet.
BIRCH, Young's Weeping, Pyramids, 10 to 12 feet.
,, Young's Weeping, Standards, 14 feet.
ELMS, Weeping, Standards, 10 feet stems.
HAZEL, Weeping, Standards, 8 to 10 feet.
LARCH, Weeping, 6 to 10 feet.
POPLAR, Weeping, Standards.
SOPHORA JAPONICA PENDULA, Standards, 8 to 10 feet.

Intending planters are invited to inspect the Plants growing; no one interested in such matters will regret the trouble. Catalogues convey but a very inadequate idea of such a Stock.

KNAP HILL NURSERY,
WOKING, SURREY.

THE

# Gardeners' Chronicle.

*SATURDAY, NOVEMBER 7, 1885.*

## THE "HEREFORDSHIRE POMONA,"

"PART VII., completing the work." The significance of such words as these creates always, and under any circumstances, a mixed impression. Whatever the work be, and however satisfactory, there is a tinge of melancholy about them. They represent the cessation of effort, and when, as in this case, the effort has been worthy, and the result such as to win the admiration of all concerned, still the feeling of regret intermingles with the gratifying sense of something attempted, something—in this case much—done.

We cannot tell, we can but hope, that the last hours of Dr. Henry Bull, of Hereford, were solaced by this sense of having accomplished good work—something that should, apart from higher considerations, into which it would be presumptuous here to enter, prove to have promoted the welfare of his fellows. Be this as it may, it is something startling to have laid on our table at one and the same time, the last part of the *Herefordshire Pomona* and the announcement of the death of its author. In that part we find the following recognition of the services of Dr. Bull, signed by the successive annual Presidents of the Woolhope Naturalists' Field Club during the preparation and completion of the *Herefordshire Pomona*, and which was ordered to be inserted in the work immediately after the general introduction:—

"The members of the Woolhope Club desire to offer their special and grateful thanks to Dr. Bull for the ability and perseverance with which he has carried out the publication of the *Herefordshire Pomona*. In addition to his own valuable papers, he has edited and superintended the work from beginning to end. He originated it, and without the untiring diligence and zeal he has displayed for so many years it could not have been so successfully completed.

| | |
|---|---|
| "J. Griffith Morris, 1877 | Thomas Blashill, 1882 |
| A. D. Phillot, 1878 | George H. Piper, 1883 |
| Arthur Armitage, 1879 | Charles Burrough, 1884 |
| J. H. Knight, 1880 | C. G. Martin, 1885 |
| Augustin Ley, 1881 | Theophilus Lane, Sec." |

This is no more than a just recognition of the untiring labours of Dr. Bull. In carrying out the work Dr. Bull received the cordial assistance and co-operation of Dr. Hogg, but that gentleman will be the first to acknowledge that, alike in its inception and its conduct from beginning to end, the greater share of the work connected with the *Herefordshire Pomona* has fallen to Dr. Bull. Dr. Bull, moreover, raised the standard of the Woolhope Club at Rouen. What other local field club, we wonder, has essayed so daring a feat? And it was successful. Our courteous neighbours at once recognised the value of the effort, and honoured the Club, as well as Dr. Bull and Dr. Hogg, with substantial marks of their appreciation. Nor was this all a matter of friendly recognition, compliment and hospitality. The Woolhope Club—that is to say, principally, Dr. Bull—not only made a display of Hereford products, which won the sufferages of the Norman pomologists,

but succeeded in introducing into Herefordshire, after careful scrutiny, no fewer than eight varieties of Apples of Norman growth, which met the requirements of Hereford growers, as to quality of juice, vigour, hardihood, and fertility, varying period of blooming, late maturity, and general good reputation. This is a good example of what a local field club may do, under proper guidance, for the general welfare. The fungus forays, the mycophagous festivals, these are familiar to our readers: the genial fun, the animal spirits, the solid benefit to science—these have found record in our pages from year to year, and here again the presiding spirit was Dr. Bull. It seems so strange to have to write that word —was—when we have before us, not only the last part of the *Pomona*, but when it is but a few days since that we had a communication from him relating to the Pear Conference only just concluded at Chiswick. Pomology and Mycology were two of the recreations of this energetic man. He was a Justice of the Peace, and a physician in large practice. No longer ago than the 4th of last month he wrote to one of our correspondents—"I am particularly busy just now, three long journeys a-day [referring to one of his patients], but perhaps a death will set me free"—and it has set him free. Before the month was over all that was mortal of Henry Bull had ceased to be. In the agony of grief that this comparatively sudden termination of a happy and useful career must have occasioned may the feeling that the expression "ceased to be" has only a limited signification afford true consolation to those that are left to mourn—and to hope.

Of the *Herefordshire Pomona* itself the concluding part of which lies open before us, we must speak on another occasion. Enough for the present to record the death of one of the brightest, most energetic, most sympathetic of men. Dr. Bull died of cancer, after a short illness, on October 31, in his sixty-eighth year.

# New Garden Plants.

## MASDEVALLIA HIEROGLYPHICA, *Rchb. f.*

AT last I have fresh flowers at hand, kindly sent by Mr. W. Lee, who had the plant from Mr. F. Sander, who alone would appear to have imported it. It is lovely, much like Masdevallia Arminii, but quite distinct in its long tails and in the shape of its sepals, which are much less rounded, and more triangular. The tails are mauve on the upper half, the lower part being orange-coloured. Bodies of sepals light mauve, purple outside, white at the base. The dorsal sepal has three Indian-purple lines, and four manifold rows of small spots of same colour. All the remainder of the inside of the sepals is purple; there is, however, an Indian-purple line on the mid-nerves of the lateral sepals. Petals whitish-sulphur. Lip with innumerable small purple spots on the disc, purple at the base, darker purple in front. The column is white, with numerous small Indian-purple spots under the fovea. Excepting that place it is dark Indian-purple. It is a delightful gem. *H. G. Rchb. f.*

## DICKSONIA LATHAMII, *n. hyb.*

Arborescent evergreen; fronds tripinnate, coriaceous, narrow oblong, 14—15 feet long, including stipes; dark green on the upper surface, paler beneath; pinnæ alternate, often unequally distant, sometimes nearly opposite, sessile, oblong-lanceolate, broadish at the base, acuminate, the middle ones 1½—2 feet long, 6—8 inches broad, divided into rather close-set pinnules, which are also sessile; pinnules linear-oblong, narrowed to a point at the apex, about ¾ inch, or in the basal ones 1 inch, broad, the upper portion decrescent and confluent; pinnulets distinct, roundish or oblong-obtuse, the lowest with a narrow attachment, the rest more or less adnate, the margin in the fertile contracted portions distinctly crenato-lobate, each crenature or lobe bearing a sorus; the sterile parts pinnatifid, with falcate oblong-acute lobes, indistinctly toothed at the apex; sori six to eight on each pinnulet, globose, the green outer valve (tip of lobe) somewhat larger than the brown inner one, both entire; veins in the fertile parts simple, one to each lobe, from a stout costa, which is prominent on the lower surface, in the sterile parts more or less forked; stipes 4 or 5 feet in length, clothed abundantly in the younger stages with bright rufous hair-scales, and as well as the rachis very stout, pale brown, with a central furrow above, deeper umber-brown, and bluntly rounded behind, the surface minutely asperous, the main and secondary rachides tomentose, with fine crispy deciduous hair-scales, the secondary and tertiary ones comparatively thin, also asperous, with a few scattered hair-scales along the base of the pinnulets.

This very noble Fern, which appears to be of hybrid origin, was raised by Mr. W. B. Latham, Curator of the Birmingham Botanic Garden, after whom we have named it. The plant has a very stout trunk, and a most distinct character of growth. At the present time the stem is 4 feet 4 inches in circumference at a foot from the ground surface, and a height of 3 feet clear of fronds, the crown of fronds rising above this 2 feet 6 inches, reaching the total height of 5 feet 6 inches. There are about sixty fronds on the plant, the largest of which, including the stipes, measures between 14 and 15 feet, the stipes being 5 feet 6 inches long, and the lamina of the frond from the lower pinnæ to the apex 9 feet 4 inches; the lowest pinna is 19 inches long, and the largest, about the centre of the frond, 23 inches in the specimen before us. There is, moreover, this peculiarity in its habit of growth, that though the stems resemble those of Dicksonia antarctica, the fronds forming the head or crown of the plant are produced successionally, and not simultaneously, as they are in that species.

Mr. Latham sends the following particulars of its history:—"Some years ago I had under my care a plant of the very rare Dicksonia arborescens, an imported plant, with a clear stem of from 3½ to 4 feet in height, and having so completely the character of that figured in Hooker's *Species Filicum* (i., t. 22) that I have no doubt it was the true plant. I collected spores from this plant and sowed them in a 5-inch pot, at the same time sowing in another pot of similar size some spores of D. antarctica. These pots were placed side by side. In due time the prothallia came up very freely in the pot of D. antarctica, but not so in the case of D. arborescens. Amongst those in the pot of D. antarctica I noticed two very distinct from the rest, and these I carefully watched from day to day, and when at length the first little frond made its appearance I was delighted to see something different from D. antarctica, and what then appeared to me to be D. arborescens.

"For some years after, while the plant was in a young state, it was supposed to be the latter plant, but when it began to develope its stem and the fronds grew to their full size, I saw it was distinct, and had combined the characters of D. antarctica and D. arborescens, which I now believe to be its parents, the spores having in some way got mingled in the seed pot. In the texture of its fronds it is very much like D. arborescens, but the general character of the plant, taken as a whole, comes nearest to D. antarctica, the stem quite resembling that of the latter, only being stouter, while D. arborescens on the other hand has a thinner, more slender stem in the way of that of D. squarrosa. The habit of throwing up the young fronds one after the other and not all at one time to form at once a new crown of foliage, is also foreign to D. antarctica, and more nearly resembles the mode of development in D. arborescens."

We have examined fragments of this plant at different times during the last few years, and had been inclined to refer it to D. chrysotricha, a species of the Eastern Archipelago, not having been till recently aware that it originated from spores, under Mr. Latham's own care and observation. The account of its origin above given, however, leaves little room, if any, for doubt that it is one of the "hybrid" forms which under cultivation now and then intrude themselves on our notice, and, as in this case, furnish us with new objects of admiration—for the plant, we remember, was some years since a specimen of unique and stately character, unlike any others then known to cultivators, and it must have been a noble and majestic ornament to the greenhouse conservatory in which it is growing.

It is a remarkable fact that this hybrid is a most vigorous grower. Of D. arborescens, which it resembles in many ways, Mr. J. Smith, in his *Ferns, British and Foreign* (1866), remarks:—"The most fastidious Tree Fern to cultivate is Dicksonia arborescens, a native of St. Helena. It was first introduced to this country in 1786, and many times since, but refuses to become established either in a tropical or temperate house." The same may be said of it today. Where are any established plants of it to be found in our gardens?

This novelty is of so interesting a character that we hope shortly to be able to add a figure of it prepared by Mr. W. G. Smith, showing its chief peculiarities. *T. Moore, Chelsea.*

# ATHROTAXIS LAXIFOLIA.*

A FEW weeks since (see p. 270) we had occasion to figure the cones of A. cupressoides as produced on a plant in Mr. Noble's nursery at Sunningdale. Up to that time the plant had been called A. selaginoides, not only in the Sunningdale nursery, but also in other establishments. The finest specimen of A. cupressoides at Sunningdale is about 8 feet high, columnar in outline, like some of the Junipers, with rather loose short divaricate branches and foliage, as represented at fig. 60, p. 273. Since that notice was published specimens have reached us from Mr. Rashleigh's at Menabilly, which we refer to one of the other species mentioned in that article, viz., A. laxifolia. If we are right in our determination the specimen is the more interesting because up to this time the cone of this species has not been known either in a wild or cultivated state. Its appearance, moreover, lessens if it does not quite remove a doubt that was felt whether A. laxifolia was really a distinct species. The only material hitherto available, whether in herbaria or in books, was hardly sufficient to establish a species upon. The notes of the collectors and of those who had seen this tree in a wild state in the mountains of Tasmania, however, are in favour of the distinctness of A. laxfolia from the others, and their view will, we think, be confirmed by the specimen now figured (fig. 134). It is not necessary with the figure and with what has been published at p. 270, to give further botanical details, but we may appropriately add the following particulars, kindly communicated by Mr. Bennett, the gardener to Mr. Rashleigh, at Menabilly:—"Athrotaxis laxifolia is 10 feet high and 5 feet in diameter; it is a perfect pyramid, feathered from the ground. All the fruit on this plant is on the part facing the east from the twigs touching the ground to about 4 feet above it. It is growing about 100 feet above the sea-level in a rather exposed situation on a slight mound composed of the following:—Peat, loam, leaf-mould, and sand." The Athrotaxis are not likely to take high rank in this country as ornamental trees, being rather singular than beautiful, nor are they likely to be valuable as timber trees, from their slow growth and moderate height, 25—30 feet. They are propagated with difficulty, and no suitable stock has yet been found for them.

* *Athrotaxis laxifolia*, Hook. fil., *Icones Plant.*, t. 563; *Flora Tasmaniæ*, p. 354; Parlatore in De Candolle, *Prodromus*, xvi., pars 2A (1868), p. 434, "Species in plantis vivis melius illustranda"; Veitch, *Manual of the Coniferæ* (1881) p. 223.

# Orchid Notes and Gleanings.

## CALANTHES AT OLDFIELD HALL, ALTRINCHAM.

THE praises of this interesting genus of Orchids have so often been sung, their acceptability during the winter months for the brightening up of our Orchid-houses, and the use they may be put to when cut for indoor decoration is so well understood, that there is now little need of again enforcing the desirability of their culture. Little that now can be said respecting them at this time of the year can affect their number or the quality of their blossoms; they should now be in a thriving condition, pushing spikes and flowers. It may be wise even now, however, to advise those who have an inferior variety to resolve upon procuring the better forms whilst they may be seen in flower; a little more, perhaps, may have to be paid for them, but that is not much to those who are determined to get only the best. There are at least three distinct forms, differing in regard to the form of the bulbs as well as in the colour of

the flowers, and the density of them on the spike.

These distinctions may be, and often are, of a more or less marked character, according to the conditions under which they are grown. The long bulb variety, sharply pinched in at about half its length, is not by any means so good as the form which has bulbs of a lesser length, and that tapers from the base without any, or a very slight, contraction at about a third of its length from the apex. At Oldfield Hall, the seat of J. Allen, Esq., there is at the present time a magnificent lot. Mr. G. Kirton has fifty plants of C. Veitchii bearing six to eight flowering bulbs each, some plants having eight to ten spikes. These are now commencing to open their blooms, and Mr. Kirton anticipates that he will have plenty of bloom from now till the middle of March. The plants have been grown during the summer months on a shelf at the back of a Melon and Cucumber-house here, with a liberal treatment as regards heat, light, and moisture. They come on well, so that many of the bulbs are 1 foot in length, and the spikes pushing strongly, so that it is certain that many will reach from 3 to 5 feet in length. Such a display as these will make during the winter months will be most welcome. *W. Swan, Fallowfield, Oct.* 27.




Fig. 134.—Athrotaxis laxifolia. (see p. 584.)

### Schomburgkia tibicinis.

A species with long grooved pseudobulbs, and short, oblong, notched leaves. The numerous flowers are borne in a loose panicle on the end of a long flower-stalk. The individual flowers measure about 3 inches in diameter, the five segments are spreading, oblong obtuse, reddish-carmine in colour, paler at the base, marked with a green spot near the apex. Lip projecting, three-lobed, the lateral lobes incurved reddish-purple, the anterior lobe flattish rounded, notched, and marked with a yellow blotch. The flowers are produced in May. They are best grown in the warm end of the Cattleya-house, in baskets or rafts, near the glass, and freely supplied with water in the growing season. At no time should the bulbs be allowed to shrivel. *Orchid Album*, t. 205.

### Odontoglossum vexillarium var. purpureum.

This fine variety was introduced to the Linden establishment by Benedict Roezl, whose death we have lately had to record. The flowers are of a remarkably deep rose-pink colour. O. vexillarium, according to Roezl, requires a treatment intermediate between that suitable for O. crispum and for O. Roezlii. The plant grows on the trunk of trees, and requires, says Count du Buysson, ample exposure to light, but not to the direct sunlight, a cool and moist atmosphere in winter of about 50°, and in summer between 60° and 70°, with abundant ventilation, when the plant is not exposed to degrees of temperature above or below those cited. The variety is figured at t. xiii. (1885) of the *Lindenia*.

### Oncidium Brunleesianum.

This is a new and pretty species, introduced from La Plata, and has the advantage of taking up little space. The bulbs are somewhat conical, compressed, the leaves oblong acute. The numerous flowers are borne in loose branching panicles. The segments are pale yellow, barred with brown, and the lip orange-yellow with a conspicuous blotch of deep sepia-brown in front. It flowers in April. It thrives best in a small basket or pan in the Cattleya-house, near the glass. The figure in the *Orchid Album*, t. 206, gives a very good idea of the plant, but it does not supply a view of one flower separately.

### Oncidium Lanceanum var. superbum.

This variety, which differs from the type principally in the richer colour of the flowers, is figured in a recent number of the *Lindenia*, t. xvi. It is a native of Dutch Guiana, and requires a hot temperature, with full exposure to light, and an ample supply of moisture during the growing period.

### Trichoglottis fasciata.

An Orchid with the habit of a Renanthera, bearing the flowers in racemes from the sides of the elongated stems opposite to the leaves. The flowers are about 2 inches across, with segments pale yellow barred with brown. The lip is shorter than the segments, 3-lobed, the two lateral lobes broad, erect, with acute angles, the front lobe flat, oblong-ovoid, with two hastiforme projections, one on each side in front of the lateral lobes. The specimen figured in the *Orchid Album*, t. 208, was flowered in the garden of G. Heriot, Esq., of Highgate. It requires abundant moisture and considerable heat.

### Aërides odoratum var. Demidovi.

This differs from the type in the more numerous spots and deeper colouring of the lip. It is well figured in the *Lindenia*, t. xiv.

### Lælia Measuresiana.

This is "a compact growing evergreen plant, with clavate stems, 15 inches high, and dark green bluntly oblong leaves, about 6 inches long and 2 inches broad. The racemes of flowers proceed from a sheath after he growth is completed. The sepals and petals are white, the lip of a bright rosy-purple beautifully fringed round the margin, the throat yellow with the upper portion bordered with pale rose." It flowers in May. The plant flowers in the Cattleya-house near the glass exposed to plenty of light, but protected by a blind from the burning sun, when necessary. *Orchid Album*, t. 207.

### Orchids at Hawthorndean, Didsbury.

Some fine specimens of Dendrobium are to be seen at this place; during the past summer they have done well, and now that the greater part have finished their growth and the bulbs are assuming that stout, plump, and shiny appearance all are glad to observe, each one indicates the full complement of bud and blossom stored therein, which by skill and care will be developed. Some nice pieces of D. chysotoxum were on blocks and in pots, the last bulbs being superior to any previously formed, and though flower cannot be expected from the later bulbs, the older ones, being stout and plump, will certainly bring good spikes. D. albo-sanguineum also does very

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well—in fact, much better than it is usually seen. Another fine plant growing in a basket is D. Parishii; this is a mass imported some few years since, and which flowered this spring very freely, having over 260 blooms of good quality. This summer it has made fourteen leading shoots, measuring from 15 to 18 inches in length. Another good plant in a basket is D. fimbriatum oculatum, with growth 4 to 5 feet long; D. Pierardi var. latifolia has new bulbs 3 feet in length. Some nice plump pieces of D. formosum giganteum were in flower. In this house Lælia autumnalis was doing well on a block, and showing strong spikes of flower. Calanthe Veitchii were also numerous and well grown. In a vinery a number of D. Wardianum were placed. These were just commencing to show bud, and in a short time will be put in the warmer house so as to bring them into flower. A nice piece of O. Forbesii was in flower. This is on a block, and has made good bulbs. Now it is flowering with two spikes, having forty-one and forty-three flowers open altogether. O. crispum was also in flower, beside several plants of O. Barkeria (tigrinum). Several nice pieces of the sweetly scented O. ornithorhynchum were just opening their flowers. In another division were some nice plants of Cœlogyne cristata, beside some Cattleyas and Cypripediums. Among the latter was a capital plant of the dark-foliaged form of C. Swanianum. This Mr. Ward stated to be very fine in form and dark in colour of the flowers. I noticed the open pots as now supplied by the Liverpool Nursery Company were used for some of the Orchids, and others that need potting are being placed in them. Mr. Ward is disposed to think them very useful for this class of plants. *W. Swan, Fallowfield, Oct.* 20.

MASDEVALLIA ROEZLII, *Lindenia*, t. xv.

One of the Chimæra type, differing from the species so named in the smooth sepals and in the lip. The prevailing colour is whitish, or cream colour, thickly beset with reddish spots and with three long purplish tails. As in the case of most Masdevallias M. du Buysson recommends it to be grown in a cool house with abundant water during the period of growth, exposure to diffused light, and with free ventilation. Hot dry air is very prejudicial to them. In the resting state the quantity of water given should be less, but the plant should not be suffered to become dry.

## THE DIRECT CAUSE OF PEAR BLIGHT.

THE following communication was read before the American Association for the Advancement of Science, in August last:—

It has now been five years since Professor Burrill brought the subject of Pear blight before this Association and announced that it was due to Bacteria. Previous to that time no instance of Bacteria acting the rôle of vegetable parasites had been known, and the discovery was therefore a very important one, opening the way to a new and promising field of research.

The experiments of Professor Burrill showed that the disease alluded to was invariably accompanied by a specific form of Bacteria (since named Micrococcus amylovorus, Burrill), and that as the disease progressed a colourless or yellowish viscid substance was formed, apparently by the action of the Bacteria upon the starch and other substances of the plant. The disease results in the complete death of all those parts of the tree that are attacked.

Although from these and subsequent investigations the theory has been quite generally accepted, that the Bacteria are the cause of the disease, no rigid proof of it has yet been brought forward. It was with a view to either absolutely prove or disprove the theory that a course of experiments was begun last March, and continued to the present time.

It has been incontestibly shown that the disease may be readily transmitted to healthy tissues by introducing a drop of an infusion made by putting some thin slices of the diseased tissues in water,* or by simply transferring a minute portion of the exudation from the diseased to the healthy shoot.† The problem was consequently narrowed down to one of two alternatives, either the Bacteria were the cause of the disease, or the juices which accompanied them were the cause of it.

The first attempt was to secure some inoculating material in which the Bacteria were entirely freed from the juices of the disease. This was done by means of a succession of artificial cultures in a sterilized infusion of corn (Maize) meal.

Two series were successfully carried through, extending over about four months, and an inoculation from the sixth culture of each introduced into the green fruit of a Bartlett Pear.

The accompanying tables will show the kind of culture vessels used, the amount of culture fluid they contained, and the date at which each one was started. The first culture of the series was infected with a very

| No. of Culture. | Date of Infection. | Kind of Culture Vessel. | Amount of Fluid. |
|---|---|---|---|
| | | | cc. |
| 301 | March 27 .. | Salmon culture tube .. | 20 |
| 302 | April 1 .. | Salmon culture tube .. | 20 |
| 307 | April 21 .. | Sternberg culture flask .. | ½ |
| 309 | April 24 .. | Sternberg culture flask . | ½ |
| 314 | May 22 .. | Sternberg culture flask .. | ½ |
| 322 | June 5 .. | Test tube with Fol-stopper | 5 |
| 364 | July 13 .. | Bartlett Pear on tree .. | .. |

small fragment of wood taken from the inner portion of a diseased limb of Flemish Beauty Pear, in which the disease had been slowly advancing during the winter, from an inoculation made July 26, 1884, with an infusion of blighted twig from an Apple tree. The infection of each of the

| No. of Culture. | Date of Infection. | Kind of Culture Vessel. | Amount of Fluid. |
|---|---|---|---|
| | | | cc. |
| 301 | March 27 .. | Salmon culture tube .. | 20 |
| 302 | April 1 .. | Salmon culture tube . | 20 |
| 307 | April 21 .. | Sternberg culture flask .. | ½ |
| 309 | April 24 .. | Sternberg culture flask .. | ½ |
| 310 | April 27 .. | Sternberg culture flask .. | ½ |
| 322 | June 5 .. | Test tube with Fol-stopper | 5 |
| 362 | July 13 .. | Bartlett Pear on tree .. | .. |

other cultures of the series was successively made with a small drop of the one preceding. From the last culture a drop was transferred to a puncture in an unripe Bartlett Pear. In both cases the Pears were soon filled with the disease. They did not turn brown about the wound, as is the more usual way, but first indicated the presence of the disease by beginning to shrivel, which occurred in one case in nine days after inoculation, and in the other in ten days. Upon cutting the Pears open the softer tissues were found broken down and liquefied, and a milky viscid juice ran out, showing that the disease had taken thorough possession.

By this means of fractional culture the juices accompanying the Bacteria first introduced were so much diluted in the transfers to succeeding cultures that the final drop used to inoculate the Pear was practically free of them, and to the Bacteria only, supplied by continued growth and multiplication, can be ascribed the last result.

Having shown that the Bacteria when isolated from their juices are able to cause the disease, it still remains to show what action the juices would have when separated from the Bacteria. On July 18 a strong infusion of blighted Pear was filtered through a porous earthenware vessel, such as used for small electric batteries, and an unripe Bartlett Pear inoculated with the filtrate, and another Pear with the infusion used for filtering. In a week the latter was thoroughly blighted, while the former showed no signs of injury except the slight wound, which finally healed. On July 24 another strong infusion of Pear blight was filtered through a second battery cell. Both of these cells were new and had never before been used for any purpose. In this case two unripe Bartlett Pears were inoculated with the unfiltered infusion and two others on the same tree with the resulting filtrate. Both the former showed strong evidences of the disease within three days, while the latter soon healed up the small wounds made by the inoculation, and have continued their normal growth.

The evidence is thoroughly satisfactory and conclusive. The Bacteria accompanying the disease of trees known as Pear blight when fully isolated will produce the disease, while the juices in which they live will not. They are therefore the direct cause of the disease. *J. C. Arthur.*

* Arthur, *Bull. N. Y. Agric. Exper. Station*, xcii.; 3d *Ann. Rep. N. Y. Agric. Exper. Station*, p. 328.

† Burrill, *Amer. Ass. Adv. Sci.*, xxxiv., p. 582); *Amer. Naturalist*, xv., 525. Arthur, *l.c.*

## GARDEN PALMS.

(*Continued from p.* 394.)

EUTERPE, *Gærtn.*—Two of the eight species in this genus are well known in gardens as decorative Palms, though, propably owing to their requirements in regard to moisture being imperfectly understood, they do not always give satisfaction, turning brown and losing their foliage, even when grown along with other tropical Palms. The two species here referred to are E. edulis and E. oleracea, and these when wild are found only in moist wooded swamps, and along river banks, always where there is an abundant supply of moisture in the earth and in the atmosphere, and never on dry land. For their cultivation, therefore, it will be seen from this that they require more water at the root than the majority of Palms. When properly treated they assume a graceful feathery appearance, their bright green, arching pinnate leaves, borne on the summit of what looks like a stem but is really the folding bases of the leaf-stalks, being very ornamental and well adapted for table decoration. They do not stand rough usage as well as many other table Palms, and they should be kept wet at the root at all times. Wallace, writing of their appearance when large, says:—"These are very elegant Palms; their stems are lofty, smooth and faintly ringed. The leaves are terminal, pinnate, regular, and form a graceful feathery plume. The bases of the petioles are sheathing for a long distance down the stem, forming a thick column 3 or 4 feet long, of a green or reddish colour. The fruit is small, globose (like the fruit of the Sloe), at first green, then violet or black, and consists of a thin edible pulp covering the hard seed." A favourite drink, known among the natives as Assai, is made from this pulp, and the undeveloped leaves in the centre of the stem are cut out and boiled as a vegetable, which resembles Artichoke or Parsnip, and is said to be very good and wholesome, whence the name Cabbage Palm, applied to several species of Euterpe. Quantities of good seed are imported from South America into this country, and these, if sown in a hot stove and kept moist, ought to yield handsome little plants in about two years. Seedling leaves bipartite.

The Palm figured in *Bot. Mag.*, t. 3874, under the name of E. montana, is now placed in the new genus, Prestœa.

*E. acuminata*, Wendl. (Oenocarpus utilis, Kl.; Oreodoxa acuminata, Willd.).—Venezuela.

*E. edulis*, "Assai Palm."—Tropical America.

*E. oleracea*, Mart., "Mountain Cabbage Palm" (Areca oleracea, Jacq.).—Tropical America. This species, according to Aiton's *Hortus Kewensis*, was cultivated in England by Mr. J. Tradescant in 1656.

GAUSSIA, *Wendl.*

There is only one species of this as yet imperfectly known genus, which is a native of Cuba, where it forms a stout upright stem of medium height, and thickened out at the base as in the Hyophorbes, to which Gaussia is closely related, and which it resembles in all its parts, at least as far as can be made out from a comparison of the plants at Kew. In the thick, rather fleshy petioles of the Gaussia there is, however, a character by means of which it can be distinguished from Hyophorbe amaricaulis, the stoutest of the Hyophorbes. The Kew plant is about 6 feet high, and has a stem 9 inches in diameter, formed by the sheathing bases of the leaves, and of a pale brown colour. The petiole is 18 inches long and 1½ inch in diameter, smooth, round, pale green, the pinnæ from 1½ to 2 feet long, by 1½ inch broad, with a long pointed tip and a curious warty mass at the base, as if affixed to the rachis by means of a lump of white wax. The frond is 5 feet long. The whole plant has a soft succulent appearance, unlike most Palms. Seeds like black Currants, the pulpy covering brown, the seed itself smooth and horny. Seedling leaves not seen.

*G. princeps*, Wendl., Cuba.—Under this, we suppose, must be placed G. Ghiesbreghtii, Wendl., known in gardens (Rollison) as Oreodoxa and Chamædorea ventricosa.

GEONOMA, *Willd.*

No fewer than a hundred species are described under this genus, all natives of Tropical America. Fifteen of them are cultivated at Kew, and are exceedingly ornamental, several belonging to the few Palms which find favour in almost every garden. The cultivated kinds require a tropical temperature, a moist atmosphere, and shade from bright sunshine; they are,

therefore, suitable for planting in shady places in large stoves, as, for instance, at Kew, in the Palm-house, where they appear to enjoy the shade of the taller Palms, which to the majority of the plants of this order is often hurtful. The Geonomas delight in plenty of root-room and a liberal supply of water, The species may be divided into several groups, according to the form of their leaves and the height of their stems; in some, such as G. macrostachys and G. Pohliana, the leaves are a broad blade divided only at the apex, or sometimes split up into several broad segments; in others, of which G. Seemanni, G. princeps, and G. gracilis, are examples, the foliage is gracefully pinnate and even plumose. There is also considerable variety in habit exhibited in the plants of this genus, some forming a tuft of short stems, as in G. macrostachys, others bearing leaves a long way down the stem, which again is short in some kinds and tall in others. It will be seen that, as garden plants, the Geonomas possess many points of interest and beauty, their dwarf, graceful, Bamboo-like stems, and feather-like, or large entire leaves, which when young are in some species of a rich red-brown colour, being useful characters for garden purposes. In G. gracilis we have a Palm which in grace and elegance rivals the popular Cocos Weddelliana, and is quite as useful for decorative work. G. Seemanni is another strikingly handsome Palm with leaves entire when young, pinnate on older plants, the petiole and rachis covered with a dark brown scale-like rust, and the blade a deep olive-green. There is another Palm known in gardens under this name, with pinnate leaves, the pinnæ being long, narrow and bright green. A beautiful pinnate-leaved Palm, with dwarf stems springing up in tufts, and forming a mass of dark green graceful foliage, is known in gardens as G. Martiana, but according to the *Genera Plantarum* it belongs to the genus Asterogyne. G. baculifera, a native of British Guiana, is remarkable owing to the aërial roots sent out from the joints of the stem, even from the highest joints, and to the development of young shoots which occasionally start from the sides of the stem, but which, however, do not grow to any size.

The stems of some of the Geonomas are imported into Europe to be made into walking-sticks. All the species inhabit moist forests. Their seeds are small, varying from the size of Peppercorns (G. vaga) to that of a Hazel-nut (G. Spixiana), the pericarp is leathery when dry, and the seed horny. Seedling leaves split at the apex.

*G. baculifera*, Kunth?—British Guiana.
*G. Carderi*, Hort. Bull.—Hab. ?
*G. chiriguensis*, Hort. Lind.—Hab. ?
*G. cuneata*, Wendl.—Costa Rica.
*G. gracilis*, Wendl.—Costa Rica.
*G. macrospatha*, Spruce.—Amazons.
*G. macrostachys*, Mart.—Amazons, British Guiana.
*G. obovata*, Wendl.—Costa Rica.
*G. Pohliana*, Mart.—Brazil.
*G. princeps*, Hort. Bull.—Hab. ?
*G. pumila*, Wendl.—New Granada.
*G. Schottiana*, Mart.—Brazil, Guiana.
*G. Seemanni*, Wendl.—Nicaragua.
*G. Spixiana*, Mart.—Rio Negro, Amazons.
*G. vaga*, Griseb. and Wendl.—Brazil and West Indies.

Glasiova elegantissima is now placed in the genus Cocos.

Guilielma speciosa, the well-known Peach Palm, is now known as Bactris major.

### HEDYSCEPE, *Wendl.*

An old garden plant, known as Veitchia or Kentia canterburyana, forms the only species of Hedyscepe. It is a stout Palm, even when very small, and is well known for its usefulness as a decorative plant, its robustness, the elegance of its pinnate leaves, and the amount of rough usage it will stand, being favourable to its employment in this way. It grows very rapidly, forming handsome plants, 2 feet high, in about two years from seed. There is a very fine specimen of it in the Palm-house at Kew, with a stem about 25 feet high, 1 foot in diameter, bright green, with light brown rings, and bearing a large spreading crown of noble leaves, the petioles of which are covered with a brown mealiness. The fruit is ellipsoid, 1½ inch long, the pericarp hard when dry; seed with a linear hilum extending far up on one side. Seedling leaves two-lobed.

*H. canterburyana*, W. and D., "Umbrella Palm;" Kentia canterburyana, F. Muell.; Veitchia canterburyana, Hort.).—Lord Howe's Island.

### HETEROSPATHA, *Scheff.*

This is another monotypic genus, closely related to Nephrosperma. It was introduced into Europe from the Java Botanic Garden in 1879, since which time it has become well known in gardens, owing to the elegance of its pinnate foliage, its compact habit, and its assuming at an early age a graceful habit. The leaves on young plants have short thin petioles, and segments about 9 inches long by half an inch wide, bright green, and narrowed upwards into a long slender tapering point. It grows very tall, the stem smooth and unarmed, and the leaves very long and arching. The fruits are small, Pea-shaped, the pericarp rather soft and fleshy when fresh. Seedling leaves not seen. Being a native of the island of Amboyna it thrives only when grown in a moist stove and kept well supplied with water at the root.

*H. elata*, Scheff. (Metroxylon elatum, Hort.).—Amboyna. *W.*

(*To be continued.*)

## FORESTRY.

### ORNAMENTAL AND SHELTER FENCES.

WE have within the last twenty years planted upon this district of the Seafield estates over 100 small plantations, groups, and belts, with the twofold object of affording shelter and imparting beauty to the landscape. Now that many of them are grown up, and fulfilling the purposes intended, it may be interesting and instructive to some to know the leading particulars relating to this department of forestry. The construction of ornamental and shelter plantations differs materially in several respects from that of ordinary planting for profit. Groups, belts, and strips of plantation generally varying from half an acre to 1½ acre, less or more, are scattered over the whole estate, mostly in close proximity to farmsteadhouses and cottages. It is really wonderful the difference between a district thus studded with groups of trees and shelter belts in contrast with one bare and destitute of them. On this part of the property there have been planted within the last thirty years besides the above number of groups, nearly 3000 acres of common plantation, and as many of these, as well as the groups, are now grown up, they impart a beauty to the landscape such as would be difficult to find in any other country. The charms of the surroundings led a person in my hearing, whose opinion on such subjects is of value, to say that these are not farmhouses merely but homes in the true sense of the word. The Romans had no word by which to express home, for the simple reason that they knew nothing of what we understand by home comfort. To those who may be about to undertake such delightful and beneficent work the following directions and suggestions the writer trusts may be found useful. In the first place plant as far as practicable on the north side of the house or steading, or on that side opposite to the sun at noon, for although the prevailing winds in this country are from the south and west, yet it is not from these points we need shelter so much as from the north and east. Plant therefore on the opposite side from the sun, and let it be observed that no trees are planted so as to shut out the rays of the sun from the windows of the dwelling-house. Another thing to be observed is to plant sufficiently far from the house that no tree if blown down will reach it. It is a very uncomfortable feeling to live in a house during a gale when at any moment a tree might be blown down and crush you to death. When at any time it is found that trees are too close to human dwellings the top should either be sufficiently lightened as to obviate danger, or if that is impracticable, the tree should be cut down, thereby of the two evils making choice of the least.

Our practice is to plant most extensively near the dwellings such trees as bear free lopping or pruning with impunity and do not so much attain height, as spread and grow bushy. For this purpose the Mountain Ash is an old and deserving favourite, as all know and can testify who have have ever seen it grown to perfection. The Pear is also well adapted for such planting and so also are the Crab, Apple, Hawthorn, Willow, Bird Cherry, and Elder. Such groups we have endeavoured to plant extensively with all species known to be truly hardy, long-lived, and adapted to the soil, climate, and situation in which they are permanently to grow. We have, therefore, made use of one or other of almost all the hardiest trees and shrubs in cultivation for the varied situations, conditions, and circumstances for which they are required. Common Beech has been freely used, and few groups planted without some Sycamore trees being in them. The trembling Poplar is deservedly a great favourite in the small group, and well deserves more attention than it has hitherto received. A few Maples interspersed are also of great advantage for the landscape effect. The display of flowers in early spring, and the golden, scarlet, crimson, and orange tints of autumn speak eloquently in its praise. The Elder, especially some of the bright coloured new varieties, is also deserving of a place in the foreground of groups. The groups in general have been planted near new houses, and the cry invariably is, Plant large trees and fast growers, so that we may have immediate shelter and comfort afforded by them in our own day. It is here the home nursery is of immense advantage, and for that purpose more than anything else ours has been valuable. The size of trees to be recommended for this purpose is from 10 to 12 feet high, well branched and well rooted, and, in addition to those above-named, Lime, Horse Chestnut, Spanish Chestnut, Sycamore, Poplars, Elm, Birch, Silver Firs, Abies pectinata, A. nobilis, and A. Nordmanniana have been freely planted. Of shrubs the Sea Buckthorn and Elder stand first in order of hardiness, and next to these as evergreens the Rhododendron, Laurel, Bay, and Box, and the Ivy, Honeysuckle, and Sweet Brier also find a subordinate place. In very exposed places and in bad soils the very hardiest plants had to be chosen, while in sheltered places with genial soil more choice could be made and favourite plants selected. It has to be observed that fine and choice plants have not been thought of for such planting, because they are not usually fitted to bear the exposure, &c., and because they are too expensive.

The next thing to attend to after planting, and making good blanks where they occur, is to thin them out in the manner best suited to the circumstances. Every species and individual tree requires to be grown under such conditions as favour it for all the purposes for which it was originally planted. Park trees, or such as are grown singly and with full freedom for their development, attain to the greatest age and remain sound for the longest period. Thinning, then, is a work of vital importance, and which, if properly done, yields splendid results, but if neglected defeats in a great measure the whole undertaking. The primary object in view is shelter, and not timber of a remunerative character, therefore thinning should be so managed as to induce low bushy trees, with short stems and spreading roots, which point out in the first place the necessity of early thinning, in the second place the need for prolonging it beyond the period when it should cease in purely profitable tree culture. It should be borne in mind that drawn-up, slender trees afford but little shelter and are not what is required, but, on the contrary, low bushy spreading ones. Trees thus planted where a dwelling-house is built should survive at least as long as the original structure lasts, when both it and they have fulfilled their allotted purposes. *C. Y. Michie, Cullen House, Oct.* 12.

### FELLING.

As the present month is a good time to fell timber, and also the most convenient and suitable one for the farmers to have them removed from their fields, all hedgerows and park trees may now be taken down and disposed of. Where single or scattered trees are to be removed grubbing had better be resorted to; but in the case of hedgerow trees this cannot well be done without, to some extent at least, damaging the existing fences, both by injury to the intruding roots, and the forming of unsightly gaps in the hedges. The most judicious mode of felling isolated park trees is by grubbing up, or taking the solid part of the root with the bole, for the expense of taking up the roots afterwards, when either planting or tillage demands it, will be found to far exceed that of taking up the root with the stem in the first instance. As the felling of timber is an operation which calls for the greatest care, skill, and judgment in the workmen, the following remarks upon it will at the present time not be out of place. The tools commonly in use for felling are the cross-cut saw, hand-pruning saw, axe, and hand-bill.

Having first fixed upon the position in which the tree is to be laid or felled, one of the workmen, who has been told off for the operation, should next compare the size of head with the space available for its fall, and lop off any branches likely to interfere with, or cause damage to the neighbouring trees. After this, or previous to it, as found convenient, the tree should be "laid in," that is, dressed round with an axe as near the surface of the ground as possible, all inequalities of the stem likely to impede the progress of the saw being removed. A triangular notch should then be cut out exactly at right angles with the line of fall, the saw being inserted on the opposite side and worked parallel with the notch until the tree is felled. Wedges to save the saw may be inserted and driven home as the work proceeds, but this is seldom necessary unless in the case of weighty timber. An expert hand at felling will usually lay a tree within a few feet of the line selected, more particularly during calm weather, but on a windy day, or when working in a very close plantation, the use of a guide rope is to be recommended. During dry or frosty weather have all timber dragged or otherwise conveyed from fields and parks, firewood and branches disposed of or made into faggots, and such ruts or surface inequalities as may have been occasioned by removal filled up and levelled over, so that a neat tidy appearance may at all times be maintained.

PLANTING.

The exessive wet of the past month has, in most districts, but more particularly on stiff retentive soils, considerably retarded the progress of planting. As soon, however, as a favourable change sets in all the available force should be concentrated on this important operation, and the work assiduously prosecuted until it is considered well in hand. The planting of wet plastic soils should be carefully guarded against, as it is productive of anything but good. Peat bog or cold stiff clays should in all cases be planted in spring—these being the only exceptions to our oft-recommended policy of autumn planting—but it is well to have the pits opened for some time previous, as the ameliorating influence of the winter frosts on the soil is of paramount importance. *A. D. Webster, Penrhyn Castle.*

## THE GENUS ODONTOGLOSSUM.

(*Continued from p. 239.*)

ODONTOGLOSSUM CRISPUM (ALEXANDRÆ). — Although described years before from Hartweg's specimens, and the memory of it frequently refreshed from various sources, but little was known of the beauty of this lovely Orchid before the specimens sent by Weir and Blunt bloomed in this country. In 1865 Messrs. Hugh Low & Co. obtained a First-class Certificate for it under the name of O. Alexandræ, and from that time it has steadily increased in public favour until now it is of all Orchids the greatest favourite. [Despite the right of priority for the name crispum, that given to it in honour of our charming Princess has steadily gained ground, and bids fair to take the place of the other, in gardens at least; here it will be sufficient to say that both names apply to the same plant.

Considering the extraordinary variability exhibited by the species in the size, shape, and colouring of the flowers, and bearing in mind the fact of cross-fertilisation by insect aid, it may not be waste of time to offer a few suggestions as to the part which the abundance or scarcity of the insect which affects O. crispum may play in inducing those extraordinary variations. It is now well known that everything depends on the locality from which this plant is gathered, and that while some localities give only poor and narrow petalled forms, others yield round, broad petalled varieties, among which the poor starry kinds never appear. When speaking with the late Mr. J. H. Chesterton, who was so successful in introducing the best shaped forms, he told me that the better the strain the more thinly distributed were the plants, and that the bad varieties were always to be found in certain localities in abundance]; so correct did he consider this test that he expressed the opinion that if a collector came across O. crispum thickly distributed and easily obtainable, he had better have nothing to do with it, as the varieties were sure to be had. This seems to indicate that they are reproduced from seeds freely in some localities, and sparsely in others in which the varieties are the best. We may therefore infer that the insects are plentiful, and their fertilising influence great in the thickly populated colonies, and that the certainty of being fecundated in sufficient quantity, and the early stage of the barely matured flower in which it takes place act as steadily degenerating influences; while on the other hand, where the fertilising insect is, and has been from some cause or other, scarce for a long period the flowers to offer additional attraction steadily progress in the expansion of their floral segments, and exhibit tinting and marking not necessary to their humbler brethren (which we call bad varieties), whose position for themselves and posterity is secured. [Can it be that the bad varieties are close-fertilised and do not require insect aid? There is some evidence in support of this, at least occasionally. ED.]

It does not seem difficult to imagine that plants debarred from producing fruits and having plenty of room might easily improve in the size, form, and substance of their flowers, while those which had to bear fruits frequently and were in consequence densely crowded, would, from a gardener's point of view, be inferior in the quality of their inflorescence, and hence, perhaps, the fame of the Odontoglossums from certain districts and the rejection of them from others.

Such and more wonderful things are continually going on in Nature; those among us who have lived a good part of a lifetime among plants see many wonderful effects, and it is never idle to speculate as to their causes, for by so doing we must needs gain knowledge in the main even if we often err.

With respect to the names given to the varieties of O. crispum it is now generally understood that whoever gets a remarkably fine and distinct variety names it himself in the same manner as a raiser of a florist's flower would do. This is the wisest course in a class so subject to variation, and in which fine forms are of such great value that a distinguishing name is necessary for the guidance of the owner as well as the public, and for the identification of the variety should it ever be figured. [The distinguishing name in such cases should be in English, or if in Latin then it should be constructed so as not to mislead the reader and make him suppose that a botanical variety, duly chronicled, registered, and described, is intended. A fancy name should be a fancy name. ED.] For my part so distinct do I consider the named varieties that I rarely forget the features of one of them, or fail to recognise it when I see it again. Although they are so distinct to the eye their description is a very difficult task. The following list enumerates most of the fine named varieties :—

O. C. VEITCHIANUM.—This wonderful variety of Messrs. James Veitch & Sons is certainly a long way in advance of all the others. It will be hard to beat, and whoever flowers one as good may command a price in three figures for it. Its large broad-petalled flowers are thick in texture, white, wonderfully tinged with rose, and heavily blotched with purplish-crimson. Baron Schroeder has it among his Orchid treasures, and received a First-class Certificate for it at the Royal Horticultural Society, June, 1884.

O. C. GUTTATUM.—This was flowered in 1867 by Wilson Saunders, Esq., of Reigate. Its flowers are not very broad in the segments, clear white, blotched with reddish mauve. Sir Trevor Lawrence received a First-class Certificate for it at the Royal Horticultural Society, April, 1884.

O. C. GUTTATUM ROSEUM.—A very handsome form of the preceding, with sepals and petals clear white, blotched and washed with rosy-purple in a very curious manner. First-class Certificate, Royal Horticultural Society, to Messrs. F. Sander & Co., June, 1884. For our illustration (fig. 135) we are indebted to Mr. Pollett.

O. C. BLUNTII.—This was exhibited by Mr. Marshall in 1865, and received a First-class Certificate as a distinct species; it is now only considered a good ordinary crispum.



FIG. 135.—ODONTOGLOSSUM GUTTATUM ROSEUM.

O. C. BOWMANI, named in 1867, has rather narrow segments, white, sparely spotted with dark rose.

O. C. JOSEPHINÆ.—This is a very fine form with large flowers, which seem to have a trace of O. Andersonianum in them. The flowers are white distinctly spotted with brownish-crimson, sepals faintly marked with rose. R. H. Measures, Esq., of The Woodlands, Seatham, has it in his collection.

O. C. ROSEUM PUNCTATISSIMUM represents quite a new type with large perfectly formed flowers, suffused with purplish-rose and blotched on the labellum with crimson. The flowers are profusely dotted with mauve, and that constitutes the chief peculiarity, as no trace of such marking has been seen until lately. H. M. Pollett, Esq., of Fernside, Bickley, received a First-class Certificate for it at the Royal Horticultural Society, May, 1885.

O. C. LILACINUM is of the same novel strain as the last-named. Its rosy flowers are tinged with lilac and blotched with cinnamon-red. Mr. Pollett received a First-class Certificate for it at the Royal Horticultural Society, May, 1885.

O. C. BALLANTINEI.—A most beautiful variety, with flowers of medium size, the overlapping sepals and petals being white heavily blotched with chestnut-brown, in such a manner that the markings seem to run into each other. It was named in honour of Mr. Ballantine, who so ably presides over Baron

Schroeder's gardens, and received a First-class Certificate at the Royal Horticultural Socciety, May, 1884.

O. c. DELLIENSE.—This is another of Baron Schroeder's fine varieties. Flowers white, prettily spotted with light brown, the blooms being very compactly set on the spikes, First-class Certificate, Royal Horticultural Society, May, 1884.

O. c. TRIANÆ is one of the old figured kinds sent by Dr. Triana, who says he got it 10 leagues from Bogota, at an elevation of 7000—8000 feet. It has large white flowers with pink tinged sepals, the main peculiarity being that each sepal has a cluster of spots running into each other and forming one large blotch on each.

O. c. VIRGINALE is one of the most chaste and rarest of the varieties. Its flowers are snow-white, the only colour being a slight pale yellow tinge on the lip. Messrs. Shuttleworth, Carder & Co. recently flowered a superb form of it. Mr. B. S. Williams was awarded a First-class Certificate for O. c. virginale at the Royal Horticultural Society, November, 1882.

O. c. GUTTATUM FASTUOSUM.—This beautiful thing approaches O. c. Veitchianum in some degree, its flowers being prettily tinged and flaked with rose, and blotched with purplish-crimson. Perhaps the best form of it yet flowered is that which F. C. Jacomb, Esq., bloomed this year out of Mr. Low's importation.

O. c. SANDERIANUM also approaches Veitchianum, and is a rich and lovely thing. Sepals and petals heavily mottled and blotched with reddish-mauve, crest yellow. Baron Schroeder exhibited it at the Orchid Conference, May, 1885, where it was awarded a First-class Certificate.

O. c. COOKSONI is a grand form, with pure white flowers profusely sprinkled with large spots of deep purple. N. C. Cookson, Esq., of Wylam-on-Tyne, received a First-class Certificate for it at the Orchid Conference, May, 1885.

O. c. SOUVENIR DU PRINCE LEOPOLD.—This is a gigantic form with pure white sepals and petals, and broad labellum richly spotted with chestnut-brown. Messrs. F. Sander & Co., got a First-class Certificate for it at the Royal Horticultural Society, June, 1884.

O. c. WILSONI has large broad-petalled flowers, blush-white, with large blotches of chocolate-brown. Mr. Stevens, gardener to the Duke of Sutherland at Trentham, received a First-class Certificate for it at the Royal Horticultural Society, November, 1882.

O. c. DUCHESS.—This is also one of Mr. Stevens' varieties. It has large beautifully crimped, white flowers. First-class Certificate, Royal Horticultural Society, November, 1882.

O. c. DORMANIANUM is an excellent form with large white flowers beautifully crisped and fringed, and heavily blotched with chocolate-brown. Mr. Dorman of Sydenham received a First-class Certificate for it at the Royal Horticultural Society, November, 1882.

O. c. JOHNSONI.—This is one of the most beautiful of Odontoglots, with large blush-coloured flowers of perfect form, heavily blotched with yellowish-brown, and forming an unusual contrast in colouring. Messrs. F. Sander & Co. were awarded a Botanical Certificate for it at the Royal Botanic Society, June, 1885.

O. c. ROSEO-PUNCTATUM is another of Mr. Sander's introduction. Its rosy flowers are prettily fringed on the petals and dotted with brown. Botanical Certificate, Royal Botanic Society, June, 1885.

O. c. PHALÆNOPSIS reminds one of a Phalænopsis Schilleriana, so broad are its segments, and bright its pink tint. It has a few brown dots on the petals.



FIG. 136.—ODONTOGLOSSUM VAR. STEVENSII.

Messrs. F. Sander & Co. received a Botanical Certificate for it at the Royal Botanic Society, June, 1885.

O. c. REGINÆ.—This is a noble form with very large flowers, clearly marked with reddish-brown—the bright yellow of the labellum, and the crimson tint of the column rendering it very effective. F. A. Philbrick, Esq., of Oldfield, Bickley, exhibited it at the Royal Horticultural Society, in April, 1881, when it was awarded a First-class Certificate.

O. c. ROSEUM.—This name is applied generally to all forms of a good rose tint, but some are much better than others. Messrs. W. Thomson & Son, of Tweed Vineyards, Clovenfords, have flowered several bright rose forms equal in form, size, and substance to the variety giganteum.

O. c. STEVENSII.—Sepals and petals very broad, pure white, with heavy transverse blotches of chocolate, labellum large and blotched with red. Mr. Stevens, of Trentham, received a First-class Certificate for it at the Royal Horticultural Society, March, 1882. For our illustration (fig. 136) we are indebted to Mr. Pollett.

O. c. GIGANTEUM.—This has become rather a hackneyed name, although there are many to which it might well be applied, as well as to the original plants certificated to Mr. Warner at the Royal Horticultural Society in May, 1882, and to Mr. B. S. Williams at the Royal Botanic Society. G. Nevile Wyatt, Esq., of Lake House, Cheltenham, exhibited a fine form of it at the Royal Botanic Show this summer. Sepals and petals pure white, very broad and flat.

O. c. GRANDIFLORUM is one of Mr. B. S. Williams' certificated varieties, with remarkably large white crimped petalled flowers. It was certificated to B. S. Williams at the Royal Botanic Society, April, 1883.

O. c. ROTHSCHILDIANUM.—This is a very handsome kind, flowered by Mr. Bradshaw, gardener to Baron F. de Rothschild, at Waddesdon. It has large, wavy-edged, mauve-tinted flowers, the sepals having each one large dark red blotch, and being heavily tinged with violet, especially at the back; lip bright yellow at the base. *James O'Brien.*

*(To be continued.)*

## ABOUT PEAR RAISING.

IF I am right in the assumption that seedling fruit trees, and particularly Apples and Pears, derive certain acquired tendencies and peculiarities from their native soils and climate, and consequently thrive and produce the best results when grown in the localities which gave them birth, or in others which afford the same congenial circumstances, it is surely a matter worth the attention of fruit growers of every degree to devote some attention to the subject of obtaining new fruits more suitable to their own particular district than those which originated in a warmer climate. It must be admitted that seedling Pears are provokingly long before they produce fruit, and scores may be raised without anything of very superior excellence being obtained; still, there is always a chance, and an Apple or Pear of acknowledged value is sure of a good price; and, besides, it is an enormous privilege to signalise one's horticultural career by raising a good fruit, be it Apple or Pear. The late Mr. Huyshe was singularly fortunate in obtaining four good Pears from a small batch of seedlings. But these Pears illustrate my opening remark—they are infinitely better in the locality in which they were raised than in more northerly districts. My father's British Queen has, however, a range beyond Frogmore, which stamps its merit as a very superior Pear. There was another seedling also raised at Frogmore which I thought when I first tasted it as incomparably the most delicious fruit I had ever met with; it was named Golden Russet; but it greatly disappointed me since, proving only of local excellence. I grafted it on trained wall trees with every advantage of aspect, but, alas! it failed in its early promise, and in this north Midland district it has never approached the position of a second-class Pear.

The high quality of Winter Nelis, and its marked peculiarities of habit and distinct foliage, suggested to me the idea of originating a race of Pears which, while possessing its distinguishing features, might also offer greater vigour, and an extension of season. Pursuing this idea I raised many seedlings from this delicious Pear, but hitherto nothing better than the parent has appeared to reward my attempt at extending the list of English Pears. I have yet to find the right seed parent.

I hope my suggestions and instances of success and failure may induce fruit growers to try what yet can be done in raising new Pears. Some of our best Apples have been raised by amateurs. We have at present in cultivation several good Apples, the result of single seeds deposited in odd corners of small gardens by cottagers. Bess Poole Apple, so highly valued in this district, was thus raised by the lady whose name it bears. Betty Geeson sprang from a pip sown by a peasant woman; and Bramley Seedling is another instance of success in Apple raising by unprofessional people. I should like to suggest to any one who has an idea of conferring that benefit on his own particular district, if not on the country at large, by originating Pears superior to those we now possess in some degree, to select as parents those sorts which possess the great merit of keeping in perfection after attaining ripeness. As is well known, a large proportion of our high quality Pears are no sooner ripe than they change to sleepiness or rottenness; but such fine old sorts as Crassane, Knight's Monarch, Beurré Rance, remain after reaching the period of ripeness for some weeks. This may be due to the leathery skin which Pears having this peculiarity possess. To obtain a Marie Louise and Bon Chrétien which would keep for some time would be indeed a boon. It certainly seems to me that this is one of the points that should be sought for in raising new Pears. *W. Ingram, Belvoir, Oct. 28.*

## AGRICULTURAL RETURNS OF GREAT BRITAIN.

THE following are among the general results of the returns which have been obtained for Great Britain :—

The area reported in 1885 to be under all kinds of crops, bare fallow and grass, exclusive of heath and mountain land, and of woods and plantations, amounts to 32,544,000 acres, as compared with 32,465,000 acres in the previous year, showing an increase of about 79,000 acres. The respective additions in each division are nearly 36,000 acres for England, under 9000 acres for Wales, and about 34,000 for Scotland. Some small portion of the increase is doubtless due to the more accurate returns made by farmers, but the reports of the collectors state that the greater part is caused by the enclosure and reclamation of moor, or heath, and waste land in different parts of the country.

With regard to the details of particular crops in Great Britain, the most noticeable features as regards corn crops, apart from the decrease in the total, seem to be that there is a considerable diminution of the area under Wheat, and an increase in that under Barley and Oats. The total quantity of land returned under Wheat in the present year is 2,478,000 acres, or 198,000 acres (equal to 7 4 per cent.) less than in 1884, and a decrease of 134,800 acres (or 5.2 per cent.) as compared with 1883, when the breadth was less than had previously been recorded. The diminution of the area under Wheat in 1885 is almost unanimously stated by the collectors to have been caused by the low prices obtainable for this grain in the autumn and winter of 1884, as the seed-time was generally of a highly favourable character in most localities.

They observe, likewise, that the tendency among farmers to devote more land year after year to breeding and grazing stock, as offering prospects of better results, has again greatly influenced the more limited acreage of this cereal in all districts where the nature of the soil and climate do not generally promise the probability of large crops, and the returns in the aggregate confirm the correctness of their statements. In reference to one or two counties, it is added that, were it not for the imperative requirement of straw in which farmers still find an inducement to grow Wheat, its diminution would there have been greater even than it is.

As regards green crops in Great Britain in 1885, Potatos were planted on 548,000 acres, a decrease of 16,000 acres, or 2.9 per cent. as compared with 1884. Some of the reports attribute the lessened area planted to the reasons given for the deficient acreage of Wheat, namely, the unremunerative prices caused by the large crops of last year. The variation, however, is only in ordinary course, as the acreage of 1885 has been but seldom exceeded.

Turnips and Swedes have declined, they were this year returned as grown on 2,015,000 against 2,027,000 acres in 1884.

Mangels have increased by 27,000 acres, and Vetches, Lucerne, and other green crops unenumerated, have increased by 35,000 acres. The total area of green crops thus amounts to 3,521,000 acres, an increase of nearly 34,000 over the figures of the preceding year.

The extended acreage of Sugar Beet, mentioned in last year's report as having been returned in Suffolk, does not appear to have been continued.

The following table shows the acreage devoted to different purposes in 1884 and 1885 as returned on June 4 each year :—

| Total for | Orchards, &c | | Market Gardens. | | Nursery Grounds. | | Woods. | |
|---|---|---|---|---|---|---|---|---|
| | 1884. | 1885. | 1884. | 1885. | 1884. | 1885. | 1884. | |
| England .. .. .. | 192,800 | 184,700 | 53,900 | 47,000 | 10,000 | 10,300 | 1,[illegible],10 | |
| Scotland .. .. .. | 1,800 | 1,700 | 4,200 | 4,300 | 1,000 | 1,700 | [illegible] | |
| Wales .. .. .. | 3,300 | 3,200 | 600 | 700 | 200 | 200 | [illegible] | |

The annexed table shows the quantities and values of fruits (raw), Nuts (edible), and vegetables (raw), imported into the United Kingdom in 1884 :—

QUANTITIES.

Fruit (raw).

| | |
|---|---|
| Apples .. .. .. .. .. | 2,677,800 bushels. |
| Oranges and Lemons .. .. | 4,944,835 ,, |
| Not otherwise described .. .. | 2,381,360 ,, |
| Total .. .. | 10,006,295 ,, |
| Nuts (edible). | |
| Almonds .. .. .. .. | 81,205 cwt. |
| Principally used as fruit .. .. | (see values) |
| Vegetables (raw). | |
| Potatos .. .. .. .. | 2,444,160 cwt. |
| Onions .. .. .. .. | 8,637,406 bushels. |
| Unenumerated .. .. .. | (see values) |

VALUES.

Fruit (raw).

| | |
|---|---|
| Apples .. .. .. .. .. | £750,418 |
| Oranges and Lemons .. .. | 1,776,657 |
| Not otherwise described .. .. | 1,413,337 |
| Total .. .. .. | £3,940,412 |
| Nuts (edible). | |
| Almonds .. .. .. .. | £570,180 |
| Principally used as fruit .. .. | 557,449 |
| Total .. .. .. | £1,127,629 |
| Vegetables (raw). | |
| Potatos .. .. .. .. .. | £821,[illegible]5 |
| Onions .. .. .. .. .. | 532,007 |
| Unenumerated .. .. .. | 4[illegible]672 |
| Total .. .. .. .. | £1,783,132 |

The value of the entire lot was £6,851,290.

## FRUIT NOTES.

PEARS WHICH SUCCEED AT GOODWOOD PARK.—In reply to your inquiry as to Pears generally, I find they do very well here either on Quince or Pear stocks in medium heavy soil and gravelly subsoil : the following varieties do well here :—Ne Plus Meuris, Beurré Diel, Hacon's Incomparable, Williams' Bon Chrétien, Glou Morçeau, Beurré Clairgeau, Beurré de Capiaumont, Winter Nelis, Louise Bonne of Jersey, Passe Colmar, Duchesse d'Angoulême, Bergamotte d'Esperen, Jargonelle, Josephine de Malines, Marie Louise, Doyenné du Comice, Beurré Rance, Beurré d'Amanlis, Uvedale's St. Germain. *F. Rutland.*

EARLY FRUITING OF PEARS.

Modern Pear growers, by the employment of Quince and other stocks that check exuberant growth, have completely falsified the old saying, that "He that plants Pears plants for his heirs." A very forcible illustration of this occurred in my own experience this year, and I mention it that it may encourage people who, with the old saying in memory, hesitate to plant. I planted a horizontally trained Pear against a wall with an east aspect in the spring of 1884, the kind Madame Millet. It came to me with others from Messrs. C. Lee & Son's nursery. I gathered from it yesterday forty-nine well grown Pears. It was perhaps hardly judicious to allow a young tree to bear so heavy a crop, but its strength and vigour seemed to permit it. *W. Ingram, Belvoir, Oct.* 26.

BEURRE DE L'ASSOMPTION.

I am pleased to see attention drawn to this noble fruit (see p. 436). It deserves all that Mr. Wildsmith says in its favour, being a superior early variety that should not be overlooked by planters of kinds that ripen in September who have a favourable position in which to place it. At p. 118 "C. A. M. C.," who kindly answered my query respecting Clapp's Favourite, remarks that Beurré de l'Assomption frequently cracks when planted in other than warm situations; but that it does not always succumb to this failing when so placed I can testify. Pears are, however, all more or less capricious and particular as to soil and situation, both of which have a remarkable and puzzling effect upon them. Glou Morçeau, for instance, which is deservedly highly valued in some places—and used, I remember, to attain to large dimensions at Rendlesham Hall when I was there under Mr. Mill, who is an enthusiastic cultivator—behaves in a most unsatisfactory manner here; the fruits upon old trees, together with those upon young ones, regularly crack and mildew to such an extent as to cause a great portion of them to become utterly worthless; and this evil does not, in our case, result as it sometimes does from the roots being deeply imbedded, as particular attention has been observed to keep them near to the surface. It may, however, I think, be correctly attributed to coldness of the soil, as that in which they are growing is tenacious, and rests on marl. In reference to Beurré de l'Assomption, I can recommend it for pot culture; under this treatment it may be produced at its best with regard to size as well as quality of flavour, and it is in every way well adapted for this purpose. *Thos. Coomber.*

—— I send you the last of my Beurré de l'Assomption, which is better than any I have grown until this year, because the Pears hitherto never failed to crack. You will agree with me that grand quality would be needed to atone for such defects in form. I have grown the sort for about eighteen years; I never saw it handsome, nor tasted it good. Also I have seen it exhibited by others, large and sound, but always rather rough, and of very ungainly build. Possibly on a south wall it might do better here, but upon a west wall (where Souvenir du Congrès is very fine to look at) Beurré de l'Assomption is ugly and shy. The habit of growth can scarcely be judged from cordon trees, which are subject to procrustean discipline, and which I have long discarded. But I have failed (with average care) to make any but a scraggy and unsightly tree of this Beurré. I have it on the Quince, and I have it "double-worked," and I trust next spring it will be treble-worked. The notes upon Pears which I sent to Dr. Hogg, and which he inserted in his valuable work, were not meant for publication as they stood, otherwise I would have taken more care to warn readers that I pretend to no authority, but give, *quantum valeant*, the results of merely local experience. Mine is a good Pear soil, and grows nearly every kind to its average beauty, and many far beyond it—I send you a Louise Bonne and Beurré Superfin to show this. I have grown Beurré de l'Assomption very large, but always lumpy, rough, and fissured. *R. D. Blackmore.* [The specimen sent by Mr. Blackmore was as inferior as that forwarded by Mr. Wildsmith was good. But even in Mr. Wildsmith's specimen the form was not elegant, and the flavour, to our taste, inferior to Williams'. ED.]

A BEURRE CLAIRGEAU PEAR.

I have been from home for the last few weeks and have had no chance of seeing the *Chronicle*, but observe in your issue of October 17 you have an engraving of my Beurré Clairgeau. As Pears and Pear growing are now to be under discussion, I thought a short account of the tree might be of interest. Your woodcut is from a photograph taken in 1875 : that year it was allowed to bear thirty-five fruits, which weighed 56½ lb., Jersey weight (17½ oz. to the pound), and continued to bear very large Pears until two years ago, when signs of exhaustion were evident, and last year it was quite worn out and had to be removed. The tree was planted in 1867, and the second year after produced one fruit which weighed 1½ lb., and until two years ago never had anything on it under 1 lb.; when in its prime the usual crop was from thirty to thirty-five Pears. This tree was on the Quince, not double grafted, but simply worked in the usual way. Of course it was well looked after, well thinned, mulched, and the top soil removed about every other year. The soil is a deep rich loam with sandy clay bottom, the situation west. Perhaps from this example we may guage the life of a fruitful tree on the Quince stock under the most favourable conditions to be about fifteen years. *Edward Pond, The Vineries, Jersey.*

## Plants and their Culture.

THE CHRYSANTHEMUM FOR DECORATIVE PURPOSES.

THIS autumnal flower will soon be in its full beauty, therefore for the next few weeks it should occupy the foremost place among flowering plants for the greenhouse and conservatory, as well as forming the staple supply of cut flowers. Where groups of the plants are arranged for effect (and this, in passing, we might say is the best way to display them) it is necessary to stand them somewhat closely together, so as to obtain the best results. When this is done, every care must be taken by careful ventilation to keep the atmosphere of the house free from excess of moisture; where this is not guarded against both the

foliage and flowers must suffer to some extent. In the case of the foliage mildew will cause the greatest injury, combined with the want of light, which until the plants were housed they obtained to a greater extent. Every care should be taken to keep the foliage as healthy as possible, so as to aid the fullest development of the flowers. A free circulation of air will likewise benefit the incurved varieties greatly, in preventing the petals from becoming unduly attenuated. A few weeks later another evil will present itself much too prominently, if the excess of atmospheric moisture is not kept in check, in the premature and rapid decay of the flowers, being first apparent in the more delicate colours. When the flowers begin naturally to fade, then it will be advisable to gradually withhold the abundant supply of water that has been supplied to their roots.

When the plants are all housed and arranged it will not be advisable to employ in any form manures that are of an offensive character. The house wherein the Chrysanthemums are displayed will be sure to have frequent visitors, every pains should therefore be taken to keep it as clean and sweet as possible. For the better information of the admirers of this flower, it will be found a good plan to attach the names of the plants to a convenient spot where they can be easily read. The latest flowering kinds should be kept apart from the main collection and receive more room and as much of light as possible; such as can be kept back for a few weeks will be found valuable when the main bulk is over.

Propagation should be seen to without delay in the case of those varieties which are productive of early cuttings, before the young shoots become unduly drawn. Regard to this point is all the more requisite where the pots are grouped close together, thus causing the young growths to become tender and weakly if left till the plants are again removed. Tall plants, such as are grown on from the cutting without being stopped and thinned out at an early period, will generally push out some later flowers up the stems; many of these will be of service for cutting, being at the same time available without detracting from the general effect of the whole. *James Hudson, Gunnersbury House Gardens, Acton, W.*

## Fruits Under Glass.

### FIGS IN POTS.

After much experience in forcing early Fig trees, I have arrived at the conclusion that no plan equals that of having trees well established in large pots, and for general use no variety, in my opinion, is so good as the Brown Turkey. If the trees be trained somewhat after the bush fashion, a span-house is most suitable for them, because the trees individually obtain a larger proportion of sunshine and light, which during the murky winter months is so much needed. If, however, the trees are to be trained on a trellis beneath the glass, then a lean-to structure will meet the requirements, and perhaps at even less cost in the way of fuel. In either case, the house should be capable of holding a bed of fermenting material adequate for the purpose of producing heat from 60° to 70°, and retaining this degree of heat for a lengthened time.

Before the bed is put in, brick piers 9 inches square should be erected to carry the pots, by merely putting up the bricks to the height required, and filling in the spaces between them with coal-ashes, to make them stand firmly. The bed should be of good Beech or Oak tree leaves, and, if practicable, should be put in at once and trodden firmly down; otherwise the leaves should be collected together in a heap, so that fermentation may proceed, and then the bed might be put into the house just prior to forcing being begun.

The arrangement of the trees should be made so as to bring them well up to the glass, and the beds should be made up to the rims of the pots. Trees when placed on piers do not sustain damage from the bed overheating, because the subsidence that takes place owing to fermentation leaves them standing out of all danger from that cause. With trees properly prepared and placed under conditions as advised, together with fair treatment, good crops of fruit may certainly be assured by the middle of April. For this period forcing in a gradual way should be commenced about December 1, with a night temperature of 55° and 10° more in the daytime; as considerable moisture will arise from the newly introduced bed: syringing must be regulated accordingly, so as not to have the trees constantly wet.

### Root Pruning and Lifting Figs.

In the succession house the trees will mostly be planted out in borders. Under these conditions the roots, if not sufficiently restrained, will, generally speaking, require lifting, a process of which I much approve, and annually practise in the case of all the Fig trees which are grown under glass here as being the best to restrict over-exuberance and render the trees more fruitful. We make an opening down to the drainage, and take the latter out if the roots have penetrated it at the outward limit of the border, and work off from it 1 to 2 feet of the inert stuff. Then cut the roots back, and replace the old with fresh material, which by-and-bye will be filled with fresh young roots ready to take up whatever may be given in the shape of manures to invigorate the trees just at the time they require it. Proceed with those means which are requisite to extirpate insect pests, and thoroughly cleanse the house.

### Pruning.

Prune the trees and wash them with soapy water, using caution so as not to damage the embryo fruits on the terminal shoots. I depend solely on these for the crop of fruit, and therefore aim to have a supply equally distributed over the whole area of the trellis, and only take away those which have reached the limit of the house, and others where not required; as the branches increase so quickly in size, so that ample room is left in the tying up, otherwise half the tree will need retying again by-and-bye. After such matters are finished, take away 3 or 4 inches of soil off the top of the border, and replace it with an equal quantity of fresh compost; water the whole border thoroughly, and freely ventilate the house until the time arrives for starting it again.

### Later Houses.

Here let the ordinary work of cleaning be done on suitable occasions, and when all is completed treat the house identically with the former until the trees are required to start again. Late trees in pots should, if necessary, be shifted into larger pots, or otherwise have the balls of earth slightly reduced, and be repotted. Where Fig cultivation is carried on in pots it is advisable to have some surplus trees coming on, and in readiness for any emergency. *G. T. Miles, Wycombe Abbey.*

## The Hardy Fruit Garden.

### CLEANING TREES, &c.

The autumn and winter months are the best time for thoroughly overhauling the fruit trees. Should moss appear on the branches it is a sign that something is wrong, either the trees or branches are too crowded or the ground is damp; should the former be the case, removing a few large branches would lessen the evil, or if the latter, the ground should be drained. Moss is best removed by scraping the stems with a piece of hoop-iron or wood, and then dusting the trees all over with hot lime when they are damp.

### Pruning.

In pruning, the habit and general character of the tree should be considered. One of the most important points is in so having the branches regulated that sun, light, and air, can act on them; without this good results cannot be expected. Often varieties are condemned when it is the fault of the grower. For producing good fruit and keeping the trees healthy there is nothing like being able to leave a certain portion of clean healthy well ripened young wood at pruning time: this applies to summer as well as winter pruning, for with dwarf growing trees the summer pruning is the most important. This requires careful attention to the habits of the trees, and can never be attained by a hap-hazard cutting away of branches. Young trees can always be pruned, so as to bear abundance of young wood, but in old trees that have filled the space allotted to them it is more difficult. My own plan with the latter trees is to cut off a few large branches every year, this makes room for young branches to be left, and so a constant renewing of the trees goes on year by year.

### Trees on Walls

may be treated in this manner, the same as those growing in the open garden. In planting young trees of Apricots the ground should be light and firmly placed round the stems; too rich soil is a fertile source of canker, &c., in these trees. The most important point is to secure short, firm, well ripened wood, and it is impossible to thoroughly ripen the wood where the trees grow a yard or more every year. Moor Park, Breda, Hemskirk, Frogmore Early, and Large Red are all useful varieties. These may be planted on an east or west wall, but one fully exposed to the south is the most favourable for the production of really good fruit.

Morello Cherries on north walls should now be pruned and nailed up. Where the trees are getting old and have become crowded it is advisable to remove a few large branches, cutting them off at the bottom of the wall; this will allow space for laying-in young wood, which always produces the best fruit. The walls may be syringed with soapy water; this will kill any moss or insects on the trees.

## The Kitchen Garden.

### TRENCHING AND DRESSING.

The advantage to be obtained from early trenching cannot be over-estimated, especially by those who wish to excel with roots and tubers. By trenching early much stronger dressings can be given with safety as the work proceeds than if the work is left until a later period. By dressings I mean those which are applied mainly to cleanse the soil from insects and to quicken the constituents in the humus, thereby adding greater fertility to it. Some garden soils which have been constantly manured with decayed vegetables and animal manure year after year would be greatly benefited by receiving a dressing of artificial manure; but of this it is rather too early to speak, as it would be better if applied about three weeks or a month before the seeds are sown, lightly forking it into the surface. Another advantage derived from thus early commencing trenching is that the spit of soil which is brought from below to the surface gets well pulverised by the action of the weather during the winter, and which by seeding time in spring will be in the best possible condition. Old garden soil is much benefited by a dressing of lime, soot, and salt, especially if none of either have been applied for a number of years. As soils having a similar character and dressing suit the following root-crops, it is always desirable to get ready a plot or quarter large enough to accommodate them in proximity to each other:—Carrots, Parsnips, Beet Root, Salsafy, Scorzonera, and Chicory. To obtain the very best results, choose the deepest light soil available, as free as possible from stones, and also soil that was well enriched with manure in the spring. It will not then require any further manuring unless it be still considered poor, when a little artificial manure may be pricked into the surface three weeks before sowing the seed. For roots double digging is much better than ordinary digging one spit deep, and finally trenching is better than either. As to the depth to which trenching should be carried that will depend entirely on the depth of the natural soil and the absence of water. Should wireworm be prevalent, or clubbing have taken place in the quarter selected for those crops, the dressing of soot and salt at the time of trenching or double digging will be most beneficial. To 3 bushels of soot add one of salt. This should be applied as follows:—After throwing the top spit into the bottom of the trench, apply a good sprinkling of the mixture on the top of it and prick it in with a fork before throwing on the next spit, which should then be treated the same as the lower spit. This simple remedy tends to the production of clean roots, and to invigorate the crop. *G. H. Richards, Somerley, Ringwood.*

## APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Nov. 9 | Chrysanthemum Show at Stoke Newington.<br>Sale of First-class Bulbs from Holland, at Stevens' Rooms.<br>Royal Horticultural Society: Meeting of the Fruit and Floral Committees, at 11 A.M., Scientific Committee at 1 P.M., at South Kensington.<br>Meeting in the Music Room at the Inventions Exhibition, to consider the subject of an International Exhibition in 1887.<br>Kingston and Surbiton Chrysanthemum Society's Show (two days). |
| TUESDAY, | Nov. 10 | National Rose Society: General Committee Meeting, at 3 P.M.<br>Bexley Heath Chrysanthemum Society's Show (two days).<br>Dudley and District Chrysanthemum Society's Show (three days).<br>Brighton Chrysanthemum Society's Show (two days).<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Sale of Valuable Nursery Stock at the Milford Nurseries, Godalming, by Protheroe & Morris (two days).<br>National Chrysanthemum Society's Show, Royal Aquarium, Westminster (two days).<br>Sale of First-class Bulbs from Holland, at Stevens' Rooms. |
| WEDNESDAY, | Nov. 11 | Sale of Plants, Roses, Lilies, &c., at Protheroe & Morris' Rooms.<br>Sale of Nursery Stock and Greenhouse Plants, at Foster's Nursery, Sutton, by Protheroe & Morris (two days).<br>Tunbridge Wells Chrysanthemum Society's Show (two days).<br>Sale of Valuable Imported Orchids from Messrs. Sander & Co., at Stevens' Rooms. |
| THURSDAY, | Nov. 12 | Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Sale of Nursery Stock, at American Nursery, Leytoystone, by Protheroe & Morris (two days). |
| FRIDAY, | Nov. 13 | Huddersfield Chrysanthemum Society's Show (two days).<br>Reading Chrysanthemum Society's Show.<br>Sale of a Collection of Established Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Nov. 14 | Sale of First-class Bulbs from Holland, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE production of heat in flowers has often been observed and measured, and the general chemical explanation given of the phenomenon is no doubt true in the main. It depends upon oxidation or the union of oxygen gas with the tissues of plants or their contents, and to the "combustion" or destruction that goes on in consequence, accompanied by the emission of carbonic acid gas. In an earlier stage of the plant's life the process is just the reverse. The leaves and green portions of the plant when exposed to sunlight give out oxygen gas; the process is one of deoxidation, and with it occurs a process of evaporation of moist vapour from the surface, both cooling processes; so that while on the one hand during the flowering period and during the ripening of fruits and the germination of seed we may expect the temperature of the plant to rise: on the other, all the time assimilation of carbon is going on in tissues still green and exposed to light the temperature may be expected to be no higher than that of the surrounding air. Some recent experiments recorded by Dr. ORD are so interesting from this point of view that we believe our readers will be glad to see the following report of them, taken from the *British Medical Journal*:—

"In fruits we have, as it seems to me," says Dr. ORD, "two processes of meaning exactly opposed one to the other; the building up of the fruit, wherein we have the formation of cellulose, starch, &c.; and the ripening, wherein we have the breaking down and the production of sugar. I determined to investigate fruits of rapid growth, and test their temperature as compared with that of the surrounding air. Before doing this I consulted botanical books, and questioned great living botanists; but information was not forthcoming from either source. The kindness of a friend who has large hothouses near London enabled me to make some experiments which, I venture to say, have some importance in vegetable physiology, as well as in their relation to the question of pyrexia.

"The Cucumber was the fruit which I chose for my observations. It is a fruit which grows very rapidly, and a fruit in which the signs of ripening can be readily seen. It is grown in houses at a fairly fixed temperature, and in an atmosphere of considerable moisture. Having chosen my growing Cucumbers at a stage free from any fear of ripening I had a glass bottle, with wide open mouth, filled with water, suspended by the side of each fruit, the bottle equalling the fruit as nearly as possible in size. After twenty-four hours or more I commenced observation; I used a delicate pointed thermometer, lent to me by that skilful constructor, Mr. HAWKSLEY. With this I took, first, the temperature of the air of the hothouse around the fruit; next, the temperature of the water in the bottle; next, the temperature of the Cucumber at different points of its length. This was done by plunging the sharp end of the bulb containing the mercury to a fixed depth, marked by a line on the bulb. I took the temperature of the Cucumber at various points in its length for a definite reason. Cucumbers begin to grow at the base or stalk end, and further growth is beyond this at the tip or flower end. If any difference of temperature between the fruit and the air should be found, it might be argued to be due to evaporation if the difference were equal at all points; but, if the difference should vary at the several points tested, the influence of metabolism might be recognised.

"On May 23, 1884, a very warm day, I examined a young growing Cucumber 13 inches long. The temperature of the house was 86°.1 Fahr., the temperature of the water in the bottle was 85°.3 Fahr. The Cucumber gave the following readings:—At the stalk, 84°; 2 inches along, 85°; middle, 85°; 2 inches from tip, 84°.6; tip, 83°.9. The experiment was repeated with another Cucumber on the same day, and with similar Cucumbers on other days. All the observations were to the same effect. I note one or two other observations.

"On June 7, the weather being much cooler, and the air of the house being at 75°.6, the water in the bottle was at 76°.9. A ripe Cucumber was found to be at 77°.5 in the middle; a young Cucumber, pendulous, 74°.6 in the middle; a young Cucumber, horizontal, 74°.7 in the middle.

"On June 14, the weather being again warm, the water stood at 86° in a bottle on one side, at 86°.3 in a bottle on the opposite side of the Cucumbers to be examined. A Cucumber nearly ripe gave 84° close to the stalk, 84°.3 in the middle, 83°.2 at the tip, a small, but evidently growing Cucumber, 83°.5 in the middle; a nearly ripe Cucumber, cut the preceding day, and placed close to the others, 87° at all parts.

"I trust that you will find in these observations, as they stand, something of interest. They show, at least, that the traditional coolness of the Cucumber is not a mere creation of fancy; that the growing fruit is actually cooler than the medium in which it is growing. So far as these observations are concerned a new fact has been established; but the observations are not numerous, and the inferences are not sure. I hope to extend the observations; to introduce more controlling experiments; and so go on for safer inference. Nevertheless, arguing upon what we have before us, and upon parallel experiments made upon Bananas, with which I will not now trouble you, we may acknowledge that the comparative coolness of the growing fruit may have been due to evaporation, and that the warmth of the separated fruit may have been due to the comparative cessation of evaporation. On the other hand, I may urge that the air of the hothouse was loaded with moisture—as is the case in properly managed houses of this kind—and that moisture was deposited in beads on the surface of the fruit. This, of course, is against the evaporation explanation; and so far I should urge that the difference in the temperature of the fruit at various points in its length is against evaporation. Further, it is in favour of the hypothesis of metamorphosis in metabolism, in that the temperature was most reduced where, according to all appearance, tissue formation should be most rapidly proceeding. If time serve me during the coming year, I hope to institute experiments which shall eliminate the evaporation difficulty, and to investigate other fruits; but, so far as I have gone, I think that I am entitled to argue that there is indication that the metabolisms leading to the formation of tissues from juices do actually use up heat."

—— THE PROPOSED INTERNATIONAL EXHIBITION.—On Tuesday next, November 10, the adjourned meeting to discuss this matter will be held in the Music Room of the Inventions Exhibition, South Kensington, at 12 30 P.M. Invitations have, we understand, been sent to the principal horticultural societies of the country, while individuals have been invited by means of advertisements. We trust, therefore, that a thoroughly representative meeting will be held, and that some satisfactory conclusion may be arrived at. At present there is not much appearance of zeal among the horticulturists, though we believe the fire would burn freely enough if only the Council of the Society could offer adequate guarantees that the requisite funds would be forthcoming. It is absurd to suppose that the material is not sufficient for the purpose, hardly less so to imagine that the same machinery which has carried out the last three exhibitions to a successful issue should not be able with the aid of the horticulturists to carry out this one also. As it seems to us, the horticulturists hang back, because beyond vague hints which may mean much or may mean little—we incline ourselves to the former view—the Council has hitherto not been in a position to give sufficient assurances on the questions of finance and co-operation on the part of the "Commissioners." Those who remember the past history of the Society, the numerous vague promises or implied promises which the "Commissioners," or those who spoke in their name, laid before the Society, and who call to mind the results of it all, as seen in the present state of the Society, may be forgiven if they exercise some caution as to vague assurances from such a quarter. But from this point of view it is necessary to point out that there are Commissioners and Commissioners, and that those who have the management of the present series of Exhibitions are not the same body of men as the "Commissioners" who, in former years, dangled metaphorical Carrots before our eyes, but never allowed us to get a mouthful.

—— COMBRETUM MICROPETALUM.—In any garden where autumn flowering stove climbers are desired, Combretum micropetalum (fig. 137) is well deserving of a place. It is probably owing to its having obtained the worst reputation a plant can have, that of being a shy flowerer, that it is so seldom seen in cultivation; but if properly treated, according to Mr. F. MOORE, it does not deserve such a reputation. It is a strong growing climber with handsome bold foliage. When pruning only half the shoots should be removed, and the remainder kept close to the light. They flower in September, and after flowering should be removed to make room for the succeeding shoots. The flowers are very closely crowded on a main stalk about 8 inches long, the stalks being in pairs, and each shoot carrying four to eight of these pairs. The flowers owe their beauty to the long yellow stamens with red anthers, which impart a pleasant, soft, and feathery appearance to the inflorescence. Combretum micropetalum is a native of Brazil, and is cultivated at Glasnevin, whence our specimen was derived, in the large stove, in which the minimum night temperature is 55° Fahr. It is trained close to the roof, and flowers freely each year.

—— THE PEAR CONGRESS.—The Executive Committee which so far has had charge of the arrangements of the Pear Congress held its final meeting at Chiswick on Wednesday last, the closing day of the show. It has been a matter for regret that quite one-half the days the show of Pears was open were wet ones, thus seriously affecting the attendance of the public; still further, it is evident that Pears have entirely failed to create the interest which attached to the Apples two years since—insomuch, indeed, that the receipts for admission have been small, and when the accounts are presented to the Council of the Royal Horticultural Society a material balance on the wrong side will be shown. As the Council, however, received the balance which accrued from the holding of the Apple Congress, and also the profits arising from the sale of the Congress report, that body can hardly complain. The work done at the Conference, if pecuniarily unsatisfactory, was at least most practical pomologically, as will be seen when the committee's report, carefully prepared by Mr. BARRON, is completed and published, assuming, of course, that the Council will undertake that important responsibility, and without which the Congress would prove a comparative failure. The committee, at its recent meeting, did not undertake the exceeding responsibility of compiling an *index expurgatorius* of indifferent kinds, the work would have been too great and too invidious. On the other hand, it has prepared a list of kinds which are either new or too little known, and which includes also some first-rate winter Pears, which it recommends for wider cultivation, and also some good kinds for market culture. The only *bonâ fide* seedling kind to which a First-class Certificate was granted was Mr. RIVERS' Conference, a long tapering kind, of delicious flavour and soft luscious flesh, somewhat tinted with pink, and ripe in November.

—— TURNER MEMORIAL PRIZES.—We have already alluded to the establishment of a fund by means of which the great services to horticulture rendered by the late Mr. CHARLES TURNER may be commemorated. There are many to whom the personal character of the man will appeal, even more forcibly than abstract considerations. But in either case it is desirable to increase the amount of the fund and that quickly. Up to the present time about 120 gentlemen, comprising many of the leading men in the horticultural world and some of the rank and file, have responded to the appeal and have individually contributed sums varying from a few shillings to ten guineas. We are not at the moment empowered to mention names as the gentleman's proposals are not fully matured, but we may say that one of our boiler makers proposes to present the committee with a boiler, of the value of thirty guineas, to be competed for at some exhibition to be hereafter arranged.

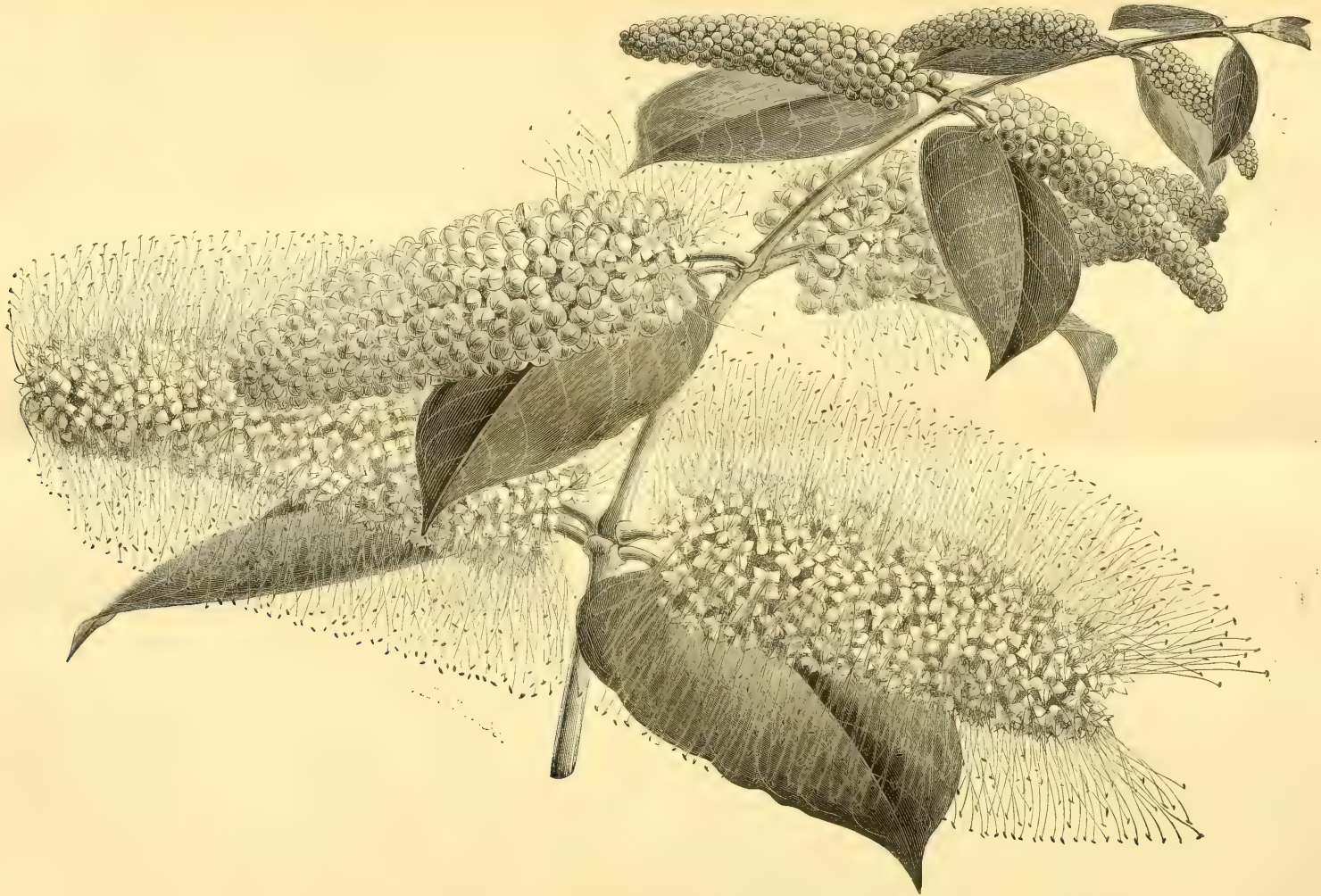




FIG. 137.—COMBRETUM MICROPETALUM: FLOWERS YELLOW. (SEE P. 592.)

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are requested to remind our readers that it is very desirable that the collecting cards should be returned to the Secretary without loss of time. The amount collected so far is estimated at about £140. The legacy of £100 bequeathed by SUTHERLAND LAW, Esq., of Southgate, has been received, so that the Institution is in a sound financial condition. On the other hand we hear that the number of applicants for the benefits of the Institution is larger than on any previous occasion. We are further informed that this Institution has secured permanent offices at 50, Parliament Street, Westminster, S.W.

—— FLOWERS IN SEASON.—Mr. HARTLAND sends us from Cork a handful of flowers to show how autumn still lingers on in south-west Ireland. Among them are Gladiolus Ville de Versailles, a flower with narrow lanceolate, whitish segments, the lower ones flushed and feathered with crimson stripes. Mr. HARTLAND mention this variety as flowering even in the dark days of December. Sternbergia lutea, var. angustifolia, is rare in cultivation. It resembles the common form, but has much narrower leaves and flowers a month later. The white-flowered Escallonia montevidensis, and a dark blue Ceanothus, both from a wall, are sent to attest the fact that summer weather still prevails in that nook of the Emerald Isle.

—— SHOW FIXTURES FOR NOVEMBER.—The following are the chief exhibitions of Chrysanthemums, viz.:—Nov. 9, Chrysanthemum Show, Stoke Newington.—Nov. 10, Bexley Heath, Dudley and district, fruit, plants, and Chrysanthemums, three days; Kingston and Surbiton, Brighton, two days.—Nov. 11, National Chrysanthemum, at the Royal Aquarium, two days; together with a Floral Committee meeting, and also on Nov. 25.—Nov. 12, Tunbridge Wells Chrysanthemum show, two days; Shrewsbury Chrysanthemum, two days; Portsmouth Chrysanthemum, two days.—Nov. 13, Huddersfield Chrysanthemum, two days; Reading Chrysanthemum, two days.—Nov. 17, Royal Botanical and Horticultural of Manchester, show of Chrysanthemums; Yeovil Chrysanthemum, Devizes Chrysanthemum, Lincoln Chrysanthemum, two days; Winchester Chrysanthemum, two days.—Nov. 18, Birmingham Chrysanthemum show, two days; Bristol Chrysanthemum show, two days.—Nov. 19, Hull and East Riding Chrysanthemum show, two days.—Nov. 20, Sheffield and West Riding Chrysanthemum show, two days.—Nov. 25 and 26, and following days, Royal Caledonian Apple and Pear Congress and new winter or Chrysanthemum show; and the York Ancient Society of Florists on the 25th only.

—— MR. T. LAXTON'S NEW FRUITS.—The Apple September Beauty has the Ribston flavour, and is highly coloured on all sides. As an early autumn fruit, to be consumed before the middle of October, it will be much appreciated, the flesh being soft and digestible to a higher degree than many kinds of richly-flavoured Apples. The Dartmouth Crab, of American origin, is a showy fruit, to hang on the tree as late as possible, and give colour to the autumn garden, the colour being deep crimson. We cannot say much as to its flavour, which, in the specimens sent to us, was not provocative of gusto.

—— "MALESIA."—The last part of this publication, edited by Signor BECCARI, and devoted to the description and illustration of the plants collected by him in the islands of the Malay Archipelago, contains the continuation of the descriptions of the species of Hydnophytum, Rubiaceous parasitic plants producing a large tuber, divided in the interior into numerous cavities constantly inhabited by ants, and the formation of which is described. The ants are formidable assailants to predatory animals, and thus repay the hospitality offered them by the plants, at the same time, according to BECCARI, who in this matter is opposed to TREUB, they may furnish nourishment to the plant.

—— PEACH YELLOWS.—This disease, little known in this country, is made the subject of study by Mr. PENHALLOW in the Canadian *Record of Science*. He shows, from the researches of NOBBE and others, that while potash is essential to the formation of starch in plants chlorine is essential to its distribution, so that if chlorine be withheld the starch accumulates where it is formed, and is not transported elsewhere. The microscopical appearances in the case of the diseased trees were consistent with these facts, and hence Mr. PENHALLOW, deeming the disease to be the result of imperfect nutrition, treated a number of trees with muriate of potash, and "after the lapse of a few years they lost all appearance of disease, and were restored to such a condition of health that up to the present time they have been most profitable in their production of fruit."

—— THE STINGING NETTLE.—There may be some who may think a quarto treatise of 250 pages, with numerous illustrations, a waste of labour when they learn that it has been expended on the Stinging Nettle—Urtica dioica. But this opinion could only be based on ignorance and misapprehension. Any one interested in the microscopic anatomy of plants will, however, turn to M. GRAVIS' *Recherches Anatomiques sur les Organes Végétatif de l'Urtica dioica* at first with interest, and subsequently with admiration. The importance of a thorough study of the minute anatomy of the plant in every stage of its growth receives strong illustration in this publication. On it depends much of our knowledge of the physiology of the plant; with it we have a clue to the lineage and affinities of the plant, and an illustration of the manner in which its tissues are modified according to circumstances, and enabled to adapt themselves to varying conditions. It thus becomes a matter of great moment to cultivators. Our successors, taught by the anatomists, will have resources placed at their disposal which their predecessors could not have. M. GRAVIS' treatise is exhaustive. Criticism of its details would be out of place here, even if it were possible to follow the author in his minute examination, but we may heartily congratulate Belgian botany on this important and valuable contribution to science, one that will be constantly referred to by workers in the same field, all of whom will acknowledge the justice of the remark with which M. GRAVIS concludes his work, and which affirms the necessity in the present state of science of a thorough scrutiny of the anatomy of the whole plant in all stages of its growth. Nevertheless the prospect is sufficiently formidable. Life is short, but the knowledge to be gained from a Stinging Nettle, as M. GRAVIS' treatise shows, would demand for its full obtention the devotion of a long life, and even then it may be presumed, the next generation with improved methods of observation and research would find as much work to do. Clearly the men of action cannot wait; they must do the best they can with existing knowledge, but they can at least sympathise with the men of research, and encourage them in their patient toil.

—— RARE DEVELOPMENT OF LILIUM AURATUM.—We read in the *Aberdeen Daily Press* that a very fine specimen of this Lily was lately exhibited in the shop window of Messrs. W. SMITH & SON, seedsmen, Market Street. The flowers were borne on a single stem, and grew in a 10-inch flower-pot. Bulbs of this variety at their highest state of perfection seldom produce more than a dozen flowers, but this plant has produced no fewer than fifty-five, all fully developed and perfect. The plant was grown by Messrs. W. SMITH & SON at Kintore.

—— ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.—A great exhibition of Chrysanthemums and fruits will open in the St. James' Hall, Manchester, on the 17th inst. The Society's Gold and Silver Medals are offered for collections of Apples and Pears, and about £150 for Chrysanthemums. This is the first autumnal exhibition the Society has held on a large scale.

—— STROPHANTHUS DICHOTOMUS.—The flowers of this species of Dogbane are singular and interesting in several ways. The twisting of the corolla in bud is a character common to all of the species of the genus, as well as a great number of the order; but in this instance the extraordinary length of the free segments so exaggerates the character as to give rise to the generic name. The flowers when expanded are shortly funnel-shaped at the base, with linear segments about 2 inches long, yellow, and striped in the throat with pale red lines. They are generally produced in threes terminating the branches, but the middle one, curiously enough, is the last to open, or may prove abortive. The plant is evergreen, with opposite leathery leaves, and requires stove temperature, as it comes from the East Indies—some books say China and India. At all events Miss NORTH painted it in Java, and the painting, No. 467, may be seen in the "North" Gallery at Kew. The singularly large fruit follicles are exhibited, two from each flower, oblong in shape, and diverging horizontally. These pod-like fruits are rarely if ever produced in this country, although it has been cultivated more or less since 1816 or 1818. This species was figured in LODDIGES' *Botanical Cabinet*, p. 759, and a flowering specimen may be seen in the Begonia-house at Kew, where in one or other of the houses it flowers annually.

—— MILDEW.—The *Journal Officiel* publishes a report addressed to the Minister of Agriculture by M. PRILLIEUX, Inspector-General of Agricultural Instruction, as to the results obtained by the use of a mixture of lime and sulphate of copper in counteracting mildew. It has long been the custom in some parts of the Médoc to sprinkle the Vines bordering roads with lime-water, to which a salt of copper was added. At one time verdigris was used, but it was expensive, and so sulphate of copper was substituted. The purpose of using it was to prevent children and depredators from pulling the ripe Grapes which were within their reach. They were afraid to eat the sprinkled bunches. A belt five or six stocks wide was treated in this way along the sides of the thoroughfares. When mildew spread to a serious extent in the Médoc it was remarked that the Vines which had been sprinkled with the mixture suffered less from the disease than the others. The leaves attacked by the Peronospora withered and fell off prematurely everywhere except along the roads, where they remained green, and where the Grapes ripened. At Dauzac, the property of M. JOHNSTON, the stocks had been carefully sprinkled by M. MILLARDET, Professor of the Faculty of Sciences, and M. GAYON, Professor of Chemistry at Bordeaux. After studying the results in this and a large number of other places, it was discovered that the sprinkling of Vines with a liquid containing about 8 per cent. of sulphate of copper mixed with lime-water checked the progress of mildew, and enabled the Vine which had been attacked to ripen its fruit. The treatment is easily applied, and cheap. The earliest application gives the best result. The action of the mixture is not yet understood, but MM. MILLARDET and GAYON hope soon to be able to throw light on it. It seems to M. PRILLIEUX that this unexpected remedy may prove useful to Northern agriculturists. The Peronospora of the Vine is closely related to that of the Potato, and it seems not improbable that if it is an efficacious remedy in the one case it may be so in the other. The hypothesis has already been supported. At Château Langoa, belonging to Messrs. BARTON, Tomatos were attacked by a disease to all appearance due to the development of the Peronospora of the Potato, which is known to attack also the Tomato. M. JOUET, the steward on the estate, who is a scientific agriculturist, treated the Tomatos like the Vines, and succeeded in destroying the disease. Isolated as this fact is, M. PRILLIEUX thinks it should be made known, so that Potato growers may make in their fields, from the first appearance of the disease, attempts similar to those which have been carried out with such success this year as regards the Vine in the Médoc.

—— HYACINTH HOLDER.—Mr. JAMES SOUTHERN, nurseryman, seedsman, and florist, Heaton, writes:—"I have forwarded you a sample of my new Hyacinth holder, being an article that has been long wanted. You will observe that it clips the Hyacinth glass below the rim, thus holding it firm, and is so far a great improvement on all others brought out. The bottom clip can be pulled off, and the holder inserted in the soil, so that it can be applied either to glasses or pots; it is also a very simple construction, and can be easily put together." [Useful and ingenious, yet simple, and might find extended use if the price is very low. It is made of copper wire, and is not conspicuous. ED.].

—— GARDENING APPOINTMENTS.—Mr. JAMES ROBERTS, four years' Foreman at Penrhyn Castle, has been appointed Fruit Grower to Herr NATHANIEL DE ROTHSCHILD, Villa Rothschild, Hohe Warte, Vienna, Austria.—Mr. A. WHEELER, formerly with Mr. JOHN BOWLER, Head Gardener, Caldecote Gardens, Nuneaton, has been appointed Gardener to the Hon. H. A. ADDERLEY, Fillongley Hall, Coventry.

## PROLIFERATION IN FERNS.

(*Continued from p.* 437.)

WE may now, having, in some degree at least, gained an insight into the agencies to which, under their natural operation proliferation in Ferns appears to be chiefly due, turn to the next in order of the aspects of the question, and consider for awhile its utility, inquiring what economic purpose, if any, the possession serves, and whether there exists in those species which manifest any conditions not shared by their non-proliferous analogues which may be regarded to constitute an evident necessity for it. The chief object which, in the great majority of the cases, the development serves is, to one wandering in their native haunts, conspicuously obvious. Here primarily the feature is observed to operate as an important reproductive agency—important at least in its generally prevalent and completely effective character. There is no doubt that it is a very considerable aid in the multiplication of many species. In fact, in all cases in which the environment and general surroundings are favourable to the juvenile life—which is the state that, as a rule, obtains, as cause invariably determines effect—the chances are that every bulbil, tuber, or bud, will attain to independent adult plant existence; for the conditions which are most favourable to their births and abundance are also the most favourable to their eventual survival and establishment; but extremes of meteorological conditions can interfere much with their success. Under protracted drought they may starve and die, or in storms or continued and unusually heavy rain they may be washed away, and so perish; but beyond the elements, which may either foster or destroy, they have few friends or foes to be aided or injured by.

Now as to the evidence of this reproductive agency. I have before mentioned the increase of those stoloniferous and radicant species which, by means of this proliferous facility, greatly spread and multiply, day by day extending their bounds, and, so far as the conditions they require will allow, invading new territory. Instances of this form are the most numerous of all, the plants, not literally but in effect, travelling associated in communities as scattered scouts, after (or more correctly before, as a case in Nature existing no doubt before military or other art) the manner of invading armies. But the other forms that the feature presents, though from the different course which their evolution takes not so obviously aggressive, and successful also very largely in proportion to the degree of the development of the feature, multiply by this agency. Of these other forms Marattias, which by the way exhibit one of the few instances of proliferation outside the great sub-order Polypodiaceæ, are a conspicuous example. Here the buds are produced from the axils of the fleshy processes of the enlarged joint at the base of the petioles. These joints, which are from 1 to 2 inches square in the different species, eventually drop from the rootstock carrying the buds, which have then more or less vegetated, but are still connected with them, to the ground. The Marattias are forest, shade-loving plants, and where they abound, gregarious as they usually grow, these joints often thickly strew the surface of the ground. In such places, where I have carefully examined, the greater part of the young plants appeared to have grown from the adventitious buds. Of many this origin was incontestible, for the joints, though the growth of the plants had far advanced, still retained their connection. Though detached from the rootstock, the points aid the vitality of the sprouting buds, for they remain fresh and green for several weeks, possibly for months, eventually granulating and turning to a white meally substance, which is edible, on drying hard. This, like the previously mentioned cases, is so conspicuously successful as to arrest notice. Other cases, though from the small or diminutive size of the buds liable to be perhaps passed unobserved among other vegetation, I have found when examined equally productive. Of some species with much divided fronds the individual buds are small, and though possibly plentiful are likely to be overlooked, especially on the ground, but when detected and the case examined carefully, the reproduction is discovered to be more or less prolific. Occasionally a frond, from some accident—wind or water, its weight, or a passing animal—is broken down, where it lies spread on the the surface of the ground, with the buds vigorously springing up into growth, and pushing their young roots into the moist soil beneath. In the aquatic form of Aspidium macrophyllum, which I have described, the buds or young plants grow to a considerable size on the parent fronds. They drop at length by their own weight, or the strain of the current or drifting objects borne along at a rushing rate when the river is in flood, and the plants are partially or wholly submerged, dislodge them. Then they too are carried on the stream till stranded on the banks, or in the *debris* among bushes, or caught in the cleft of some half-prostrate tree, or other such-like situations, where they remain and establish their future home. *S. Jenman.*

(*To be continued.*)



## MANY-HOMED PLANTS.

OF late years, most mycologists who have paid any attention to the rust-fungi have had more or less to say about the connection of æcidial forms on the one hand, with teleutosporic forms on the other; and cultures have been tried by experimenters of all grades of skill, with a view to connecting isolated forms of both sorts. As a result, the botanical literature of the last decade or two is filled with notices on the subject, ranging from speculations based on the simultaneous occurrence of two forms, to evidence accumulated in an experimental way by such men as De Bary, Cornu and Magnus.

Since Deslongchamps suggested, in 1862, that Gymnosporangium fuscum might be genetically connected with Roestelia cancellata, Oersted, Cornu, and Magnus have instituted cultures the published results of which show that species of these genera are in reality alternating generations complementary one to the other; yet it should be noted that in America, where they reach their largest numbers, cultures by Farlow have given only negative or contradictory results, while Rathay has had no better success in Europe.

The experiments of Scholer on Æcidium berberidis, in the early part of the century, and the later and better ones by De Bary, Cornu, Schroeter, and many others, have apparently proved that a number of species of Puccinia and Uromyces are connected with Æcidia (often scarcely distinguishable themselves) living on other host-plants, whose only connection with those bearing the teleutospores is cohabitation. Still the number of unconnected æcidial and teleutosporic forms is now large—a fact especially true of America, where cultures have not been resorted to; and even in Europe it is doubtful whether anything is gained by attempts to classify the species with reference to their life-history.

One of the latest papers on hetercœcism is by Rostrup (*Revue Mycologique*, October, 1884), and contains a number of statements which will interest American students. Puccinia suaveolens, the fragrant rust of the Canada Thistle, is joined to the hetercœcismal species, although its alternating generations occur on different plants of the same host. Puccinia phragmitis, a rust common on the Reed, and morphologically easy of recognition, seems far from being one of the simplest, since Nielsen and Rostrup claim, as the result of cultures, that its Æcidium occurs on Rumex and Rheum, while Cornu produced an Æcidium on Ranunculus repens as the result of infection with its teleutospores; so that a strict application of the logic of hetercœcism must necessitate the recognition of two species in place of one. Another curious thing about the Reed rusts is, that Puccinia Magnusiana, a species morphologically different from the last, also produces cluster-cups on Rumex and Rheum, which cannot be readily separated from those of P. phragmitis, when taken by themselves.

Cæoma, a genus usually placed with the isolated uredo and æcidial forms, is said by Rostrup to be, at least in part, the æcidial stage of Melampsora, which has heretofore been supposed to have no Æcidium, if we except the sub-genus Calyptospora. C. euonymi, C. ribesii, and C. mercurialis are respectively connected with M. caprearum, M. Hartigii (in part), and M. tremulæ, as the results of experiments; while a species similar to, if not identical with, the last named, is said to cause the development of Cæoma pinitorquum when sown on Pines—a fact which, if true, renders intelligible the greater abundance of the Cæoma in the vicinity of Aspens, as observed in Jutland.

As now understood, the truly hetercœcismal species are brought together in the following list:—

| *Heteroecious Forms.* | *Æcidia.* |
|---|---|
| Chrysomyxa Abietis, A. and S. | Æcidium abietinum, A. and S. |
| ,, rhododendri .. .. | ,, abietinum, A. and S. |
| Coleosporium sonchorum, P. | Peridermium pini, Willd. |
| Gymnosporangium clavariæforme, Jacq. .. .. | Roestelia lacerata, Sow. |
| ,, juniperinum, L. .. .. | ,, penicillata, Sow. |
| ,, Sabinæ, Dicks. .. .. | ,, cornuta, Gmel. |
| Melampsora, caprearum, DC. | Cæoma euonymi |
| ,, Coppeliana, Kuehn .. | Æcidium columnare, A. and S. |
| ,, Hartigii, Thuem .. .. | Cæoma Ribesii, Lk. |
| ,, tremulæ, Tul. .. .. | ,, pinitorquum, A. Br. (?) |
| | ,, mercurialis. |
| Puccinia arundinaceæ, DC. .. | Æcidium ranunculaceæarum, auct. |
| ,, caricis, Schum. .. .. | ,, urticæ, Schum. |
| ,, coronata, Cda. .. .. | ,, rhamni, Gmel. |
| ,, dioicæ, Magn. .. .. | ,, Jacobeæ, Grev. |
| ,, eriophori, Thuem. .. .. | ,, cinerariæ, Rostr. |
| ,, graminis, P. .. .. | ,, berberidis, Gmel. |
| ,, hieracii, Magn. .. .. | Cæoma lysimachiæ, Schl. |
| ,, Magnusiana, Koern. .. | Æcidium rubellum, Gmel. |
| ,, molinæ, Tul. .. .. | ,, orchidearum, Desm. |
| ,, phragmitis, Schum. .. .. | ,, rubellum, Gmel. |
| ,, poarum, Niels. .. .. | ,, tussilaginis, Gmel. |
| ,, rubigo vera, DC. .. .. | ,, asperifolii, P. |
| ,, sessilæ, Rchb. f. .. .. | ,, rhamni, Gmel. |
| ,, sessilis, Schn. .. .. | ,, alni ursini, P. |
| ,, silvatica, Schr. .. .. | ,, taraxici, Schm. and Kze. |
| Uromyces dactylides, Otth. .. | ,, ranunculacearum, auct. |
| ,, junci, Desm. .. .. | ,, zonale, Duby. |
| ,, pisi, Pers. .. .. | ,, euphorbiæ, Gmel. |
| ,, poæ, Rabh. .. .. | ,, ficariæ, P. |

*Wm. Trelease, in the "Journal of Mycology," U.S.A.*

## GRAPES AT BEXLEY HEATH AND SWANLEY.

AGAIN this year the Vines in the monster houses at Bexley Heath are loaded with crops that present a sight such as those whose acquaintance with Grape growing is confined to houses of ordinary dimensions can form but a meagre idea of. The 300 feet house, containing the oldest Vines, Alicante and Lady Downe's, although they have now for some eight years been annually loaded with fruit to an extent that might have been expected to cause their throwing out signals of distress, do not show the least falling off either in the way they finish up the crop, or by a weaker condition of the wood they make. The bunches are remarkably even, the berries large, and as black as Grapes can be. The state of the Vines in this house, after the severe test they have been subjected to, is such as to afford an instructive lesson as to what the Vine is capable of doing when the conditions requisite to success are present, amongst which liberal feeding, water without stint to the roots, and the keeping the foliage free from insects, are the chief.

The 120 feet house of Black Alicante adjoining, is this season quite as heavily cropped as it has been each year since it came into full bearing, the bunches and berries perfect. The big house, filled wholly with Muscat of Alexandria, is again a wonderful sight, the fruit highly coloured, and the crop as heavy as that borne last year, when some who saw the immense weight predicted that it would ruin the Vines. Some of the bunches here are not set quite so evenly as they were last year. Nothing in the way of late Grapes could promise better than the two adjoining houses of Gros Colmar. When I saw them, the second week in September, they were colouring fast, with here and there a berry perfectly black and blue with bloom, giving réliable evidence of their finishing up well. Like nearly the whole of Mr. Ladds' Vines, these have each two rods, the crop running from twenty-four to twenty-eight bunches to a rod.

The three houses filled with younger Vines, all Black Alicante, each 300 feet long, and, like those already noticed, 24 feet wide, are quite equal in the crop they are carrying to the older examples. This is the second season of their bearing, having been fruited half their length last year. The bunches here hang thickly on the rods, and with the berries are as even as if they had been cast in a mould, and as intensely coloured as this useful winter Grape is capable of. The bunches have this year been a little more thinned than hitherto has been Mr. Ladds' practice with this and other late kinds.

At Dartford Heath, some 3 or 4 miles from Bexley, where up to this time Peaches, Strawberries, and Tomatos alone have been grown, last spring three span-roofed houses were built. They join each other side by side, and are each 325 feet long by 25 feet wide; these have been planted with Gros Colmar. The Vines when put in were small, but have made

satisfactory progress considering that as usual under Mr. Ladds' course of procedure the treatment they get the first season is such as to make them a secondary consideration to the crop of Tomatos with which the houses are filled. Figures that indicate the size of these monster houses are soon written, and as soon read, but it takes a little time to realise fully what they mean. The space that these three houses cover is considerably over half an acre, or to put it correctly 2700 yards. Taking into account the low prices which second-rate Grapes now sell at, when the number of large houses that Mr. Ladds has come into full bearing, and those of others one hears of, who are going in for Grape culture on an extensive scale, and whose produce is confined to first-class fruit, there are doubts whether in a short time cultivators of inferior Grapes will not find themselves in a like position to that of the Apple and Plum growers in seasons of glut, with nothing left for themselves after the cost of carriage and sale are paid.

The four houses, each 135 feet, of Royal George Peaches this season bore a grand crop of highly finished fruit, ripe in June. The trees which now fill the space available are in fine condition. This spring five more of this block of twenty houses were planted with a hundred trees each—400 Madeleine Rouge, and 100 Royal George, all maidens; they have made fine growth, and promise to carry a good crop next year.

At Swanley the young Vines planted last spring twelvemonths in the block of twenty houses, each 200 feet by 17, have made good progress, although most of them were very small when put out, being struck from eyes in the winter, with no particular attention; they were planted out about April, when little thicker than a straw, and had to get along as best they could amongst the Tomatos, with which the houses were closely filled through the summer. Five of these houses at the eastern end of the block were planted on each side with the smallest examples of Black Hamburgh, two with Black Alicante, and three with Gros Colmar, similar in size to the Hamburghs. They were cut-in moderately close and two rods taken up from each, which, before the end of summer, had reached right across up to the ridge and down the opposite side of the house. Five of the adjoining houses, similar in size, were planted at the same time with Black Hamburghs, stronger plants than those already mentioned. These made such progress as to induce Mr. Ladds to take six or seven bunches each from them this season, the average weight from each being 8 to 10 lb., and the way the canes have thickened shows that no harm has been done. An almost incredible amount of stable manure was put into the borders, which consist of the natural soil simply trenched 4 feet deep. No artificial drainage is required.

Ideas once accepted are often all but immovable, yet if those who disbelieve in putting manure into Vine borders, except the orthodox broken bones, had seen these Vines this season, with the fruit they bore, coupled with the condition they are now in, the question might suggest itself as to whether the slow, long-waiting system of young Vine treatment was the right course to follow. For there is no disputing the fact that unless manure without stint and in a condition suitable for the roots to take their fill of had been present from the first the fruit these Vines have borne the year after planting would have settled them, whereas no evil effects are not perceptible. Every one who is at all acquainted with the subject knows the value of bones as a manure, but alone their action is too slow for such quick growing, gross feeding plants as the Vine. The Vines in the biggest house—680 feet—have done well, and will next summer be cropped half their length. Four more houses were here planted this spring with Gros Colmar.

Tomatos again this season have been the principal crop succeeding other things in the houses here, as well as at Dartford Heath and Bexley, and have borne an immense weight of fruit, although Mr. Ladds says that they have not done so well as last year. But in September vast quantities were just beginning to colour, in fact, at that time a large number of the houses appeared to be only coming to their best.

The stock of pot Strawberries for forcing is this year again very large; the intention was to grow about 150,000, but it has been a difficult matter to get a sufficient quantity of runners on account of their being backward through the combined effects of a late season and the unusually dry state of the ground preventing the plants making growth. *T. B.*

# Notices of Books.

How to Grow Roses. Samuel Ryder. (Ryder & Son, Sale, Manchester.)

We have here, for the price of *6d.*, a useful little manual of sixty-two pages on the most fascinating of horticultural subjects—Rose growing. As the author candidly states in the preface, it is totally void of those little digressions that make a book more readable and interesting; nevertheless, we do not find his matter treated in too dry a style, and we fail to observe those inaccuracies which often mar amateur workmanship. The instruction and directions given for forming a rosery, and for selecting, growing, and exhibiting the queen of flowers are just those we should expect from one who is thoroughly at home with his subject.

## MONSTROUS PRIMULA.

A CORRESPONDENT sends blooms taken from two plants of Primula alba magnifica, all the flower-spikes coming up singly, as shown in fig. 138, the specimen being a mass of bloom. The malformation is



Fig. 138.—MONSTROUS PRIMULA.

not uncommon, and is not infrequently the result of extra vigour in the plant at some stage of growth.

## UNCOMMON GROWTH OF PEACHES.

IN gardening as in other matters, there are some things so generally accepted that they come to be looked upon as never failing facts, from which there is no exception. Such, for instance, as, that Peaches which happen to be on shoots that fail to make growth beyond the fruit never grow so as to attain their full size. Yet this is by no means always the case, as shown by the accompanying illustration (fig. 139), which represents the fruit of a Walburton's Admirable Peach, grown this season in one of the houses at The Node, Welwyn, where, on several trees there have been numbers of like instances, in which the Peaches borne on shoots that have not only failed to push beyond the fruit, but have died back right to it so as not to leave an atom of live wood beyond, have been quite equal in size to those borne on the same trees where shoot extension in the usual way has occurred. The trees have carried full crops, the largest of which were from 8 to 9 oz.; neither was there any percetible difference in the flavour of the fruit borne by the shoots that had died back. The trees are in excellent condition. Mr. Fulger, the present gardener at The Node, is a believer in the necessity for a copious application of water overhead and to the roots of Peaches, so as to keep the foliage clean and free from insects, and the roots in the active condition essential to a healthy state of the trees. Those who have had anything to do with Peach cultivation will not fail to have noticed that it is nothing unusual for shoots that make no growth to carry an odd fruit or so; but such fruit does not generally grow to more than half the size of those that are borne on shoots where the usual extension has taken place; and, moreover, the fruit produced with an absence of anything "to draw the sap" is usually so far wanting in flavour as to be worthless. It is in this that the case in question differs from the ordinary run, showing that there are exceptions in this as in most other matters.

## LATHYRUS SATIVUS.

LAST year it is stated that considerable fatality occurred among horses in Glasgow from their being fed on the seeds of this Pea mixed with Oats. The Pea is stated to have caused paralysis and spasm of the muscles, especially of the wind-pipe and larynx, whence tracheotomy has been adopted with success. The Peas in question are said to fatten swine, but to cause paralysis of the limbs. This is a matter that requires to be cleared up. It is certain that the seeds of many Papilionaceæ do contain not only much nitrogenous matter, legumin, but also a poisonous principle, *e.g.*, Laburnum, Calabar Beans, &c.; but Lathyrus sativus, a well known annual with lanceolate leaves, bluish Pea-shaped flowers on long stalks, is extensively cultivated in Southern Europe for its seed, which, says the *Treasury of Botany*, is used for the same purposes as the Chick Pea, the pod is also eaten green, and the whole plant is used for forage, while the Peas are much given to poultry.

The discrepancies in these statements may be capable of reconciliation, but the first thing to do is to make sure that the inculpated seeds are really what they are described to be. It is not unlikely that some other seeds may be the real culprits, although, as we have said, there is abundant evidence of the poisonous nature of the seeds of many plants closely allied to the Lathyrus sativus.

Lathyrus sativus is a very near relative of L. odoratus, the Sweet Pea, and of the Everlasting Peas of our gardens, and is only one degree less nearly related to the common garden Pea, Pisum sativum, It is the Gesse blanche of the French, and finds mention in Vilmorin's *Plantes Potagères* without a hint of its poisonous qualities. It might be said, perhaps, that the unripe seeds, cooked and eaten like green Peas, might be rendered harmless by the process of boiling; but Vilmorin goes on to say that the ripe and dry seeds may be employed in soups. No hint of its poisonous properties is given in recent books such as Luerssen, Vesque, or Baillon. M. Alphonse de Candolle mention its culture from time immemorial as a forage plant, and also seeds. Roxburgh and Royle mention its use in India for similar purposes, the former specially mentioning the use of the dried seeds as diet by the natives.

The only trustworthy evidence of its poisonous properties that we have hitherto been able to find is contained in Duthie and Fuller's *Field and Garden Crops of North-west India and Oudh* (1883). At p. 15 of the second part of this work, where a figure of the plant is given, together with full details as to its general use and method of cultivation, the following details are given as to the noxious effects of this pulse when eaten in excess:—

"The remarkable part connected with it is its undoubted tendency to produce paralysis, which has been ascribed to the nitrogenous constituents, in which it is exceptionally abundant. The widespread occurrence of paralysis in Sindh after a season of extensive inundations in which Kasári (Lathyrus sativus), was grown on an exceptionally large scale, attracted considerable observation, and the settlement officer of Azamgarh reports that similar effects are to be noticed in the Azamgarh district, cases of paralysis being far from uncommon in villages were Kasári forms an important item of diet. It may also be noticed that the occurrences of some cases of paralysis in the military station of Almora some few years ago was traced to the fraudulent admixture of Kasári with the grain supplied for the use of the troops. Colonel Sleeman writes as follows of the effect of the large consumption of Kasári in eastern villages of Oudh:—

"'In 1829 the Wheat and other spring crops in this and the surrounding villages were destroyed by a severe hailstorm; in 1830 they were deficient from the want of seasonable rains, and in 1831 they were destroyed by

blight. During these three years the Kasári, which, though not sown of itself, is left carelessly to grow among the Wheat and other grain, and given in the green and dry state to cattle, remained uninjured, and thrived with great luxuriance. In 1831 they reaped a rich crop of it from the blighted Wheat fields, and subsisted upon its grain during that and the following year, giving the stalks and leaves only to their cattle. In 1833 the sad effects of this food began to manifest themselves. The younger part of the population of this and the surrounding villages, from the age of thirty downwards, began to be deprived of the use of their limbs below the waist by paralytic strokes—in all cases sudden, but in some more severe than in others. About half the youth of this village of both sexes became affected during the years 1833 and in 1834; and many of them have lost the use of their lower limbs entirely, and are unable to move. The youth in the surrounding villages in which Kasári from the same causes formed the chief article of food during the years 1831 and 1832, have suffered in an equal degree. Since the year 1834 no new case has occurred, but no person once attacked had been found to recover the use of the limbs affected, and my tent was surrounded by great numbers of the youth in different stages of the disease, imploring my advice and assistance under this dreadful visitation. Some of them were very fine looking young men, of good caste and respectable families, and all stated that their pains and infirmities were confined entirely to the joints below the waist. They described the attack as coming on suddenly, often while the person was asleep, and without any warning symptoms whatever, and stated that a greater portion of the young men were attacked than of the young women. It is the prevailing opinion of the natives throughout the country, that both horses and bullocks which have been much fed upon Kasári are liable to lose the use of their limbs; but if the poisonous qualities abound more in the grain than in the stalk or the leaves, man, who eats nothing but the grain, must be more liable to suffer from the use of this food than beasts, which eat it merely as they eat grass and hay.'"

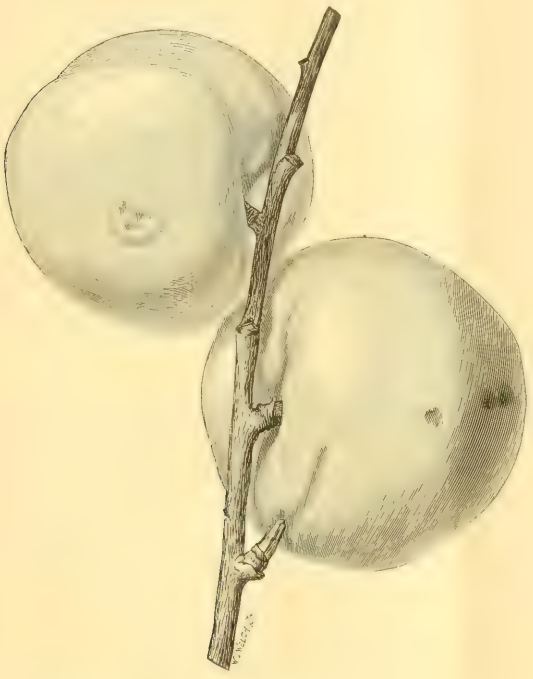


FIG. 139.—UNUSUAL GROWTH OF PEACHES. (SEE P. 596.)

PUBLICATIONS RECEIVED.—*A Treatise on the Drying of Fruit, Nuts, &c.* (Waynesboro).—The *Horticultural Directory for* 1886 (Office of *Journal of Horticulture*, 171, Fleet Street).

## The Herbaceous Border.

### LILIUM AURATUM VAR. CRUENTUM.

THIS is a scarce and beautiful plant, that I had by mistake from Mr. Ware about five years ago. In this variety the centre of each petal is marked with a deep crimson band, but otherwise little difference between it and the normal form is recognisable, although I fancy that it is a more robust grower, and with larger and narrower leaves. Of late a great deal has been written regarding the difficulty of preserving for more than a couple of years this fine Japanese Lily, and even plants raised from home-saved seed have not come up to expectation, for these, in numerous instances, have disappeared in the same miraculous manner, so that cultivators are almost deterred from further attempts. In my own case by far the best results have been got by planting the bulbs in pure leaf-mould with or without sand, and in a rather dry, sheltered border. Under such treatment they not only flower well from year to year, but increase in stature and number of stems as well—sure proof that they are at home. The specimen of cruentum planted five years ago has now two flowering stems, one 6 feet in height, and bearing ten flowers of immense proportions; the other having four flowers on a stem 4 feet high. Other examples of successful cultivation in leaf-mould might also be adduced, whilst at the same time bulbs planted in ordinary loam have gradually declined, and ultimately died out altogether.

### HYACINTHUS CANDICANS.

Groups of these plants, where rightly placed in a garden—that is, where their tall spikes of pure white blooms are backed up with some of the darker foliaged shrubs—have a fine effect, single specimens giving but a poor idea of what the plants appear when established in good bold masses. Certainly the most successful cultivation of this now deservedly popular plant that we have yet seen was brought under our notice a few days ago at Penrhyn Castle, where, interspersed with Rhododendrons, a whole bed was devoted to their culture. Planted as single bulbs three years ago they have now trebled their number, many of the spikes measuring as much as 6 feet in height, and loaded with their large white funnel-shaped flowers. The bed in which they are so successfully grown was specially prepared of almost pure peat for the choicer Rhododendrons, but the happy thought suggested itself at the time of utilising the waste space between the rows by planting the bulbs of this Hyacinth. That they have done well we need hardly repeat, the shelter of the Rhododendrons, above whose heads the flower-stems just appear, and cool peaty soil, evidently suiting their wants to perfection.

### SEA HOLLIES.

Amongst the Eryngiums perhaps none is finer or more attractive than E. amethystinum, with its noble tufts of dark green foliage and conspicuous steel-blue flowers. E. giganteum is another species that should not be overlooked, being highly ornamental and of a remarkable pleasing appearance, the cone-shaped heads of effective blue flowers standing well above the foliage, and at once rivetting the attention of the passer-by. Light, well worked soil and an open sunny position suits them best. *Emergo.*

## Home Correspondence.

**Brunsvigia Josephinæ.**—This is rather an expensive bulb to buy, but is well worth the outlay. The genus Brunsvigia is closely allied to Amaryllis, and ought to share in its popularity. The bulb increases to a large size, and throws up a thick scape supporting an umbel of sometimes as many as sixty flowers, many of which will be 3 inches across. The colour is a clear crimson, a little lighter than the hue of the Jacobæan Lily. The leaves follow, Colchicum-like, a good while after the flower-spike has withered away. It is an exquisite plant placed among Ferns, so as to rear its vivid scarlet from their bright greenery. B. coranica is cheaper to buy, but is much inferior to the giant Josephine. Both give no trouble to cultivate, and flower in pots as greenhouse plants; in this respect, indeed, beyond the powers of few villa gardeners. That lovely Irid, Dietes (Moræa) bicolor was flowering splendidly in the month of September, in the Tresco Abbey gardens. The colour of the petals is a bright sulphur, with a black-brown velvety spot at the base of each. When folks have got tired of buying infinitesimally different Pelargoniums, Dahlias, or even Daffodils—though far be it from me to sneer against anything, least of all Daffodils—there is some chance of such valuable and delightsome bulbous flowers as the above having their due meed of admiration and loving care. *C. A. M. C.*

**Edible English Fungi: Truffles.**—Have any edible English fungi, except Mushrooms, been artificially cultivated? If so, what varieties and what method of culture has been adopted? Have Truffles been successfully cultivated in England? If so, how? What is known about the artificial cultivation of them abroad? The information given by Cooke and Berkeley (*Fungi: their Nature, Influence, and Uses*) appears fragmentary and unsatisfactory. Is nothing more known? *R. S.*

**Ornamental Gourds.**—Numerous varieties of these, such as Lagenarias, Cucurbitas, and Cucumis, have been seen at recent shows in London and elsewhere, amongst which many desirable forms were observed. We ought to grow the most interesting of these plants more commonly than is now the case, for many other things are grown, and with difficulty, that afford less satisfaction than these do, in the process of unfolding their curious shapes from the tiny beginning onwards. They are often recommended to grow in unsightly places, or to cover arid banks, but then it is only the rapidly growing leafage that it is desired to encourage, fruit being secondary. The plants form an admirable screen, when tied on a stout espalier fence of wood, and in small gardens would serve to enclose an unsightly summer framing ground, or the like. The fence should not be less than 6 feet high, and even then the vines will reach the top, and should

be encouraged to descend the other side of the fence. If the site is a sunny one, and the plants, which should be raised on a slight hotbed in March or April, are planted on a barrowful each of stable manure fresh enough to give off a trifling heat, progress will be rapid, and ripened specimens of any of the smaller varieties may be looked for in September and October. It may be mentioned that all species bearing white flowers are recognised as being unfit for food, but those with yellow blooms as wholesome. *Melopepo.*

**Fruiting of Yucca filamentosa.**—There is now in my nurseries a plant of Yucca filamentosa carrying a seed-pod which will soon be ripe. Now, as I have never heard of any Yucca seeding in this country I should like to know if it is really an unusual occurrence, and if so, I should feel obliged if you would kindly notice it in your esteemed paper. *Edwd. Morse, Epsom.*

**Varieties of Belladonna Lilies.** — I send you flower-stems of two varieties of Guernsey Lilies. The green stem is that of an early-flowering variety, coming into bloom early in September; and the red stem that of a much later variety, now in full bloom (October 30). I should be glad to know if they are known and recognised as different forms? They differ also most markedly in height, the early green-stemmed form being almost twice as high-growing a plant as that which produces red flower-stems. *J. T. Pea, Riverston.*

**The Proposed International Horticultural Exhibition.**—Probably the chief difficulty to be surmounted in reference to the proposed International Horticultural Exhibition is the maintenance of it in a truly practical and representative form with living products over a long season. Hitherto no such proposition has been made, and the possibility of working out the suggestion has no precedent for guidance. We cannot have a show worthy of the name that does not include all kinds of plants, and for these we must be indebted chiefly to the horticultural trade. But the members of this body, whilst most anxious to further the interests of horticulture, and even to promote a fitting corollary in 1887 of the magnificent show of 1866, would of necessity shrink from subjecting their valuable plants to such an exposure as would endanger them, certainly materially injure them, and cause the owners irreparable loss. Private owners of plants could hardly be expected to be more disinterested; indeed, no exhibition, however representative and grand, could be esteemed satisfactory if the result, as far as many of the most interesting subjects of the show were concerned, was to produce injury and perhaps death. All our great shows of horticultural products so far have been but tentative in character because of the obvious difficulties which the nature of their component parts present; hence, whilst fitful, and for the season and objects shown successful, yet they have never proved fully representative of horticulture. The special objects of a portion of a season no more represent the horticultural products of a year than do a dish of Apples or Potatos in their seasons represent all the products of gardens in fruits and vegetables for the whole year. Without doubt something to remedy that defect in ordinary shows has been done at South Kensington during the past two or three years, and the visitors to the Exhibitions at the fornightly meetings have been enabled to observe that British gardening, even as there represented, is not a thing of to-day or to-morrow, but of one endless continuity. If it be desirable to exhibit in 1887 a genuine show of what horticulture is all the world over, certainly there may be found certain elements, especially in the matter of hardy trees and shrubs, in which living objects may be utilised effectively for an entire season, whilst to these enduring features may be added dried specimens, models, and myriads of garden or horticultural appliances. But the really attractive features of the continual show must certainly be looked for in a series of intermittent displays of produce in season—in fact, a very considerable expansion of the present system of shows as adopted by the Council and the Commissioners conjointly. To carry out such an extended and costly arrangement by the aid of prizes a schedule extending over six months would need the aid of several thousands of pounds to produce the needful competitions and gather together the desired objects. Assuming some such arrangement to be carried out it is obvious that it could only be done by the joint action of the Commissioners, the Council of the Royal Horticultural Society, and horticulturists generally, and the arrangements should be in the hands of a joint committee, in which each body should be adequately represented. Without doubt, the lack of foresight on the part of the Commissioners has led to means of access to the exhibition buildings and the gardens being terribly cramped, and probably there is no place of show so difficult to reach at the present moment as is the conservatory of the Royal Horticultural Gardens. No scheme for the carrying out of a great international exhibition, which would render the frequent removal of the objects absolutely needful, could be conducted unless provision were made for some more convenient means of access than at present exist. But the question after all is open to debate whether, assuming an international show in 1887 is determined upon, it is needful to make it continuous, and to hold it at South Kensington. Why may not a great show be promoted in London on an independent basis, and by an independent though eminent representative committee like that of 1866? It seems really doubtful whether it is in the power of the Royal Horticultural Society, with all its *prestige* to secure the patronage of royalty now [?], and certainly that would be a most important element in any such undertaking. *D.*

—— As the *Gardeners' Chronicle* shows so praiseworthy a desire to have the suggestion of an International Horticultural Exhibition for 1887 thoroughly ventilated, and as the Council of the Royal Horticultural Society invite all interested in such an exhibition to meet the Chairman, in the music room of the Inventions Exhibition, on Tuesday next, I embrace the opportunity offered, to say a few words. My excuse for writing is that I was associated with the last exhibition of the kind, held in 1866. It might be considered a truism to say that any International Horticultural Exhibition, to be thoroughly successful, must first of all be thoroughly national. Such was the International Exhibition of 1866. The idea, having originated from similar exhibitions held in Brussels and Amsterdam, in the years 1864 and 1865, was suggested by a few leading horticulturists, and as spontaneously taken up by British horticulturists. A list of names, from Her Majesty downwards, was readily forthcoming as patrons, guarantors, or donors, and all worked smoothly to the end. What is the position at this time? The Royal Horticultural Society is moving in the matter. Does it possess the *prestige*, or the power, to make of this scheme a national movement? It is the only society within the precints of the metropolis. Admittedly, it has no grounds at South Kensington, and is wanting in funds. It has the will, and much working powers; but these are not enough. I hold its monthly shows, just past, have not added really to its *prestige*. They have been too numerous. Tens of thousands of visitors to the "Inventories" have viewed them, expecting to see much more at the Society's exhibitions. They have contrasted them with local provincial shows, and are not likely to make special efforts to see another in a similar place or manner, however large or grand it is represented to be or really is. The Society cannot be blamed for this. Those minor shows were all exceptionally good, the merits of the exhibits being of a very high standard indeed. That horticulture has been advanced by them is undeniable, but from the point of view I have explained I fear the Society may have suffered. My impression is, if the Royal Horticultural can but make a start in this matter, if they can but induce the Commissioners to enter into the scheme and aid them by giving the ground, assisting as donors or guarantors, or both, and then, having done this work, step back and permit the Society to assume its legitimate proportions, with the hearty co-operation of every individual horticulturist, and the equally needed indirect aid of Horticulture's innumerable sympathisers, the scheme will command success. It must not be forgotten, however, that funds in no meagre proportion must be forthcoming to bridge over the doubt existing between the prepared display and assured reimbursement, and to secure which need I reassert how extremely desirable it is to make the scheme truly general? Even the Royal Horticultural Society must lay aside what to four-fifths of practical gardeners is known as its exclusive tendencies, else there will remain a danger that such a result may accrue as will make it better that the project had never been entered upon. In view of securing funds could not a scheme be propounded by which donations (above a certain sum) should be repaid provided a success were assured. *William Earley, Ilford.*

**Curious Position for Pears.**—On a spur on the main stem of a Pear tree in the gardens here there were three Pears (Beurré Clairgeau) fully above average size produced this season. The spur is 18 inches from the ground, and 18 inches below the lowest branches, where they unite with the tree. The spur is two years of age and about 6 inches long. Those were the only Pears the tree produced this season. The tree was planted about thirty years ago, but the variety not being cared for, the branches were cut down, and another variety (Prince of Wales) grafted on the tree about sixteen years ago. The above-mentioned spur is the old or original variety. *J. B. P.*

**Spruce and Larch Hedge.**—These forest trees make capital hedges if planted at about a foot apart, in trenched ground. The trees may be allowed to grow to 6 or 8 feet in height, and then be topped, and the side cut in so as to make the thickness at the bottom about 2 feet, and allow the foliage to extend outwards at the top to 9 inches. With a stout fence wire, or Ash poles run through it at 2½ feet from the ground and again at 5 feet, a fence strong enough to resist cattle is made when grown strong. Both kinds of trees bear the shears well, which may be used in August; and sometimes spring clipping is done, but it is rarely required, unless the weather has been mild all through, since the late summer operation. As wind-breaks in exposed gardens and nurseries, such hedges are much sooner available than those made of deciduous material, and on account of their height and impermeability the space enclosed acquires a relatively high degree of warmth. Thuia Warreana sibirica is also a good hedge plant where a compact, ornamental fence is required—not combined with defence against animals. *W. M.*

**Vanda cœrulea.**—Quite recently in the pages of the *Gardeners' Chronicle* this lovely Orchid has been mentioned; several correspondents have given the size of the plants of which they have charge, none of which can compare with a specimen now flowering in the collection at Lake House, Cheltenham. There is a specimen worthy the name, and one of which the owner, G. Nevile Wyatt, Esq., is justly proud. This plant is about 2 feet 6 inches from the top of the pot, has seven breaks, and eight racemes of flowers, the total of the latter being about ninety, or slightly over the average of eleven flowers on each raceme; this is probably one of the finest specimens in cultivation. It is now at its best; that is, the earliest-developed flowers are well coloured, and the characteristic reticulation prominent. These net-like veins appear to be developed just prior to maturity being reached, and were distinctly visible when I saw the plant on October 30. Some small plants are at Lake House which exhibit much health and vigour, and I doubt not the gardener, Mr. Simcoe, would give publicity to his mode of culture, by doing which he would confer a benefit on a large number of the admirers of this pretty Orchid. *E. Jenkins.*

**Old Pot Pears.**—After your flattering notice of our orchard-house Pear trees, p. 493, perhaps, in justice to old Mr. Rivers' hobby, I ought to say that after being more than twenty-eight years in pots they continue to bear very well and fine fruit. They can have no more shifts of pots, the size of these is limited to what a man and stout lad (the extent of our cottage garden establishment) can carry. Some seasons one Pear has finest flavour, in others another. This year Beurré d'Anjou has finer flavour than I ever before remember it to have had. *George F. Wilson.*

**Exhibition Onions.** — The enormous Onions shown at the last exhibition of the Royal Horticultural Society, are perhaps worthy of an award as exhibition enormities, but should scarcely be held up to gardeners as being objects to imitate in the ordinary kitchen garden. In but few places is the demand for these over-large productions at all excessive, as they are fitted only for roasting or serving whole. When Onion seed is sown moderately thick, a very trifling

thinning-out of the crop is necessary. The bulbs resulting from the crop so treated will be of all sizes, from 1½ inch to 4 inches in diameter, and consequently, sufficiently varied to meet without waste all the different requiremets of the kitchen. The abnormally large Onions take special treatment and considerable space to grow them, keeping, moreover, badly, be the sort brought under such treatment what it may. The largest varieties shown seemed to be hybrid forms of the white Spanish, an early ripening mid-season Onion. *M.*

**Sulphide of Potassium.**—In your article on the Chrysanthemum, of the 31st ult., you say "the first traces of mildew should be destroyed with flowers of sulphur dusted over it." Why flowers of sulphur, when there is a remedy so far superior available? Sulphur in that form is unsightly, inconvenient to apply, and, being insoluble, very imperfect in its effects. Some time ago I directed attention in your columns to a very soluble sulphur compound, sulphide of potassium, which, when applied in solution, say half an ounce to the gallon, leaves no unsightly effects, is easily distributed over the plant by the syringe, spray disperser, or by immersion, and which, so far from being in any way injurious, actually benefits the plant, even when applied to its roots, killing fungus in the soil and driving out worms. The solution kills all fungoid growth with which it comes in contact, but it is not sufficient in some cases to syringe only, as I have met with some forms of mildew which throw off the solution as a duck's back repels water; in such cases contact must be ensured by the sponge or other means. An efficient, cheap, and easily applied remedy cannot be too widely made known if consideration be given to the infinite mischief done to the Vine, Cucumber, Hop, Pea, Rose, Hollyhock, Chrysanthemum, &c. (the list is too long to be enumerated in full detail), by various forms of fungoid disease. I intend another year to try its effect on the Pear, soon after the fruit is set, as some of the best varieties in my garden are rendered worthless by forms of fungus peculiar to that fruit; for this and other purposes it is desirable that a spray disperser on a large scale should be contrived. No one who has ever tried sulphide of potassium would ever again have recourse to flowers of sulphur. Mr. Coleman, of Eastnor Castle Gardens, writes:—"I have given the small bottle of sulphide of potassium a fair trial, and the excellent effect it has produced is more than satisfactory—it is marvellous;" a gardener of his eminence would not have committed himself to terms so strong unless he had thoroughly proved its efficiency. Sulphide of potassium is equally fatal to low forms of animal and vegetable life in animals, as in plants; consequently is a specific for the diseases caused by them; I can testify, after an extended experience of more than thirty years, in the words of Mr. Coleman, to the excellent, and, indeed, marvellous cures effected by it, often when skilled physicians had failed in various forms of skin diseases, poisoned wounds, whitlows, &c., in man, mange in various animals, grease in horses, gapes in pigeons, poultry, &c. It is very rarely used by the medical profession; they do not try it because it is not considered an elegant preparation, and as it has an odour often associated with sewers may be supposed in these days of sanitary sciolism to be injurious to health. *Edmund Tonks, Knowle, Nov.* 1.

**Vanda cœrulea.**—I feel much obliged to "J. D." for the information he advances at p. 563, concerning his treatment of and successs in the cultivation of this fine Orchid. Notwithstanding his statement as to the number of gardens near London in which its cultivation is thoroughly understood, I still maintain that it might be more common considering its cheapness as stated by him, and its exceptional beauty. He now virtually recognises the truth of my statement as to its handsomeness. After such a confession I should have expected that "J. D." would be satisfied. Instead of which he goes back to the original article and cites another passage, upon which he desires elucidation. The existence of the yellow spot and ridges or plates on the labellum is undeniable, and unless he considers their presence a useless possession to the plant (which I do not), it would be interesting to know what purpose they serve in the economy of the plant in a state of Nature, if not as pathfinders to that insect or those insects that habitually fertilise it. Out of twenty-four genera belonging to the Vandeæ group examined by Darwin he concluded that not a single plant would set a seed without the aid of insects. There are probably hundreds of cases where similar spots and lines exist, did time and space allow me to enumerate them, and they all point to the nectary. These occur generally, if not exclusively, in highly specialised flowers, adapted for fertilisation by the higher classes of insects such as Lepidoptera and Apidæ. A great number of the species of Dianthus are most legitimately fertilised by diurnal Lepidoptera, which alone have a proboscis long enough to reach the honey. Flies and other short-lipped insects often visit them for their pollen. In perfectly double flowers little or no pollen exists. I am much interested in the subject, and perhaps "J. D." would furnish the information as to what class of insects he has observed "in a house of Carnations in flower," and what they were collecting. *F.*

# Reports of Societies.

## EALING, ACTON, and HANWELL: November 3 and 4.

THE annual autumn show of this Society was held in the Lyric Hall, Ealing, on the above days, thus ranking with the very earliest exhibitions of Chrysanthemums held this year. The result, however, in spite of the fact that Chrysanthemums are rather late, was far from disappointing, as, although trained plants were backward, the cut flowers were first rate, and the competitions exceedingly good, although this year limited to the radius of the Society.

Amongst plant exhibits, very beautiful was a grand group of Chrysanthemums in pots from Messrs. C. Lee & Sons, grown by their able Ealing manager, Mr. Cannon. This huge group, or rather twin groups, comprised most of the best kinds in cultivation, Incurved, Japanese, Anemone, &c.; the flowers fine, the plants well foliaged, and all in most creditable form.

From Mr. Roberts, Gunnersbury Park Gardens, came a very beautiful lot of nine plants, very effectively employed to decorate the stage fronting into the Hall, and which included scarlet Plumbagos, Nerines, scarlet and white Bouvardias, Scabious (dwarf and well flowered), with good Crotons, &c., all faced with Maidenhair Ferns, and Panum variegatum.

Messrs. Hooper & Co., 7, Covent Garden, sent from their Twickenham nursery a basket of some of their fine Tree Carnations, and in addition to High Commendation received a First-class Certificate for Chevalier, pale yellow, flecked with rose.

Of other plant groups Mr. Fountain, gr. to Miss Wood, Hanger Hill, for a delightfully fresh and elegant lot of Ferns; Mr. G. Fulford, gr. to J. Boosey, Esq., Ealing; and Mr. King, gr. to J. A. Gibbons, Esq., Castle Hill, both of whom had large and effective groups of Chrysanthemums, received equal 1st prizes in the miscellaneous class.

Mr. H. B. Smith, of Ealing Dean, sent a large collection of his fine strain of Cyclamen, of the most meritorious kind; and Mrs. Smith, who stands in the front rank of bouquettists, a couple of superb bouquets, one of crimson and golden Chrysanthemums, and the other of white Camellias, Eucharis, and double white Primulas for base, with buds of Madame Falcot Tea Rose and Neapolitan Violets projecting. Also a beautiful floral fan, the frame being covered with white lace, and upon this ground, arranged on coloured Bramble leaves, five radiating sprays of white flowers and Maidenhair Fern; on the obverse side were sprays of Ivy; this was novel and most beautiful, and worthy the acceptance of a queen.

The trained plants of Chrysanthemum may be passed over as late though full of promise. On the other hand the show of cut flowers was a surprise, the class for twelve incurved blooms bringing eight exhibits, the best coming from Mr. Beesley, gr. to A. Fraser, Esq., Ealing, who had very good Empress of India, Golden Empress, Queen of England, Lord Alcester, Lord Wolseley, Emily Dale, Midshipman, Prince Alfred, Mr. Bunn, Refulgens, Jeanne d'Arc, and Baron Beust; Mr. H. Davis, gr. to H. G. Lake, Esq., Chiswick, was 2d, with good compact flowers; and Mr. Collyer, gr. to Mrs. Murrell, Ealing, was 3d.

For twelve Japanese Mr. Davis was 1st, having moderate-sized but capital blooms, including good M. C. Andiguier, Margot, Jeanne Delaux, Hivre Fleur, Madame Lacroix, &c. Mr. Collyer and Mr. Beesley took other prizes.

In the class for nine incurved, Mr. Long, gr. to E. B. Rider, Esq., Ealing, was well 1st, with fine flowers; Mr. Baird, gr. to C. A. Daw, Esq., Castle Hill, 2d; and Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill House, was 3d. In this class Mr. Hudson, gr. to H. J. Atkinson, Esq., M.P., Gunnersbury House, had an extra prize, for blooms set up with their own foliage—a very desirable arrangement, a single stout wire supporting each flower. This method of setting up blooms elicited great praise from the judges.

A very pleasing class was found in the pompon section, for these flowers are always well done at Ealing. Mr. E. Smith, gr. to T. Nye, Esq., was 1st, with clusters of three blooms, each in twelve kinds, having capital flowers of Sœur Melanie, Rose d'Amour, Thais, Bob, Madame Montales, Rose Trevenna, Prince Victor, Regulus, Adèle Prevette, and Mrs. McCoi. Mr. Beesley, who was 2d, had good blooms of Marabout, Elise Layellior, Fanny, Miss Nightingale, Atre de Noël, &c.

In the class for six pompons Mr. Collyer was 1st, with fine blooms. A very fine bloom of Lord Alcester, shown by Mr. Beesley, was the best single incurved; and the best single Japanese was M. C. Audiguier, from the same exhibitor.

The competition in other classes for cut blooms was large, the flowers being chiefly of the kinds previously named.

Some fine bouquets of this flower were also shown, the best one, of white kinds, coming from Mr. Chadwick.

A very fine lot of some fifty blooms, chiefly Japanese, was staged by Mr. Harman, gr. to F. C. Capps, Esq., who did not show for competition. F. A. Davis, La Frisure, Soleil Levant, Comte de Germiny, Margot, Madame Lacroix, Incomparable, and La Pureté, were first-rate specimens. Some good incurved flowers were also included. The judges awarded three Certificates of Merit to good kinds of recent introduction in this collection.

FRUITS were largely shown, the best three bunches of Grapes coming from Mr. Hudson, who had superb Black Alicante, Alnwick Seedling, and Muscat of Alexandria; whilst Mr. Baird, who came 2d, had good Black Alicante only; Mr. Milson, gr. to W. Lindell, Esq., Ealing, having fine Lady Downe's, wanting more colour.

Mr. Chadwick had the best three dishes of Pears in Beurré Bosc, Marie Louise, and Beurré Diel; Mr. Milson coming 2d with fine Pitmaston Duchess, Beurré Diel, and Beurré Superfin.

Mr. Hudson was 1st with three dishes of dessert Apples, having good Blenheim, Ribston, and King Pippins. He was also 1st in the corresponding class for kitchen Apples with Blenheim Pippin, Golden Noble, richly coloured; and Dumelow's Seedling.

Messrs. Lee & Sons showed a fine collection of fifty kinds of Apples in good variety.

Mr. Chadwick staged as many of Pears and Apples, receiving a 1st prize in the miscellaneous class, and Mr. Garlandroy showed twenty dishes of good kinds, obtaining a 2d prize.

Some twelve lots of four dishes of Potatos were shown in a class for prizes offered by the Messrs. Sutton & Sons, Reading; a cottager, Mr. John Farndon, coming 1st with Vicar of Laleham, Magnum Bonum, International, and Schoolmaster.

There were capital collections of six kinds of vegetables shown, Mr. Wright having the best, and Mr. Slatter the finest Celery in Fulham Prize.

In all the cottagers and other classes the competitions were large, and those for boiled Potatos provoked much interest, the cooking as a rule being first-rate.

## LAMBETH AMATEUR CHRYSANTHEMUM: November 3.

THIS Society has been formed for the purpose of advancing the culture of this favourite flower in, we may safely venture to say, one of the most unfavourable districts, viz., a radius of 1½ mile from the "Elephant and Castle." The success the Society has achieved can only be estimated by a visit to their annual exhibition, of which the one held in Hawkstone Hall, Westminster Bridge Road, S.E., was the eleventh. The exhibits taken all round were really remarkable, all things considered; in fact, some of them were quite equal to many seen at the principal shows. The specimen plants were fine, and the various groups very attractive. The arrangement of a Chrysanthemum show does not admit of much departure from the ordinary routine of tables for blooms with plants "down the middle," and the groups and specimen plants on the floor to hide the walls, but the Executive in this instance had certainly imparted a slight though very effective change by arranging a pyramidal group of decorative plants midway of the tables. The whole appearance of the show was such as to give great pleasure to all visitors, whether from the vicinity or not.

The prizes were awarded as follows:—

### POT PLANTS.

For six standard Chrysanthemums,—1st, Mr. W. L. Tracy, with good examples of Colonel George Glenny, Mrs. Rundle, Golden Christine, and Arigena; 2d, Mr. F. R. Williams, his best being Christine, Ariadne, and Golden Christine. For three ditto, the same gentlemen were placed as before.

Best group, not less than twenty varieties, to be arranged in 80 square feet, general effect and quality to be the leading features.—1st, Mr. H. Ellis, with a tastefully arranged group of well-bloomed plants of medium height, with very robust though "sooty-looking" foliage; his finest examples were Madame de Levin, Golden Beverley, MM. Tozier, Margot, Triomphe de Chatelet, Fabian de Mediana, &c. 2d: this prize was rather difficult to decide, on account of the even nature of the other groups, but we think the judges were correct in awarding it to Mr. J. Hole, whose collection, though small, was of fine quality. 3d, Mr. W. Clarke. A very creditable group was also staged by Mr. A. Ball.

For six untrained bush pompons.—1st, Mr. W. L. Tracy, with good plants, only exhibited about a week too soon, as the blooms were not fully expanded.

For six dwarf pompons the same gentleman was 1st, with neat little plants, trained on a star-shaped trellis.

For six standard pompons Mr. Tracy was also 1st; Mr. T. F. Davison was 1st for three ditto.

### Cut Flowers.

For twelve Chrysanthemums, incurved, Mr. A. Ball was decidedly 1st, with fine blooms of Mr. Brunlees, Golden Beverley, a grand bloom of Prince of Wales Mr. Bunn, White Globe, Mrs. Shipman, Colonel George Glenny, Nil Desperandum, Nonpareil, Mrs. Halliburton, Golden Eagle, and George Glenny; 2d, Mr. W. L. Tracy, with good examples of Bella Donna, Lady Slade, White Beverley, Refulgence, and George Glenny; 3d, Mr. T. Hadden. Mr. A. Ball was 1st also for six ditto; 2d, Mr. Brown; 3d, Mr. T. F. Davison.

For six blooms, incurved, one variety.—1st, Mr. Brown, with Colonel George Glenny; 2d, Mr. F. R. Wilson, with George Glenny.

For twelve Anemone-flowered.—1st, Mr. W. Clarke, with some good blooms of Minnie Chaté, Lady Margaret, Prince of Anemones, Bijou, Empress, Gluck, Madame Goderaux, Marguerite d'Anjou, and Acquisition; 2d, Mr. H. Ellis, his best being Lady Margaret, Georges Sands, and Acquisition.

For six Japanese, Anemone-flowered, Mr. R. Ellis was 1st, with Sœur Dorethée, Souille, Madame Bertier, Pigmy, Fabian de Mediana, Madame Thérèsa Closs.

For twelve reflexed Chrysanthemums.—1st, Mr. A. Ball, with Emperor of China, King of the Crimsons, Chevalier Domage, Pink Christine, Jewess, and Ariadne; 2d, Mr. F. R. Williams, 3d, Mr. T. Hadden. For six ditto, Mr. A. Ball was again 1st, Mr. W. L. Tracy 2d, Mr. F. R. Williams 3d.

For twelve Japanese Chrysanthemums, Mr. C. J. Fill was 1st, with good examples of Fernand Feral, Etoile Toulousaine, Mr. J. Lang, Mons. Tarin, Cry Kang, Japon Fleur, Madame B. Rendatler, Red Gauntlet, James Salter, Le Chinois, Mons. Mousillac, and Rosea Superba; 2d, Mr. T. Child, with Comte de Germiny, Madame la Croix, Garnet, Flamme de Punch; 3d, Mr. W. L. Tracy. For six ditto, the same gentlemen held their respective places. For six ditto, of one variety, Mr. C. J. Fill was 1st, with fine examples of Monsieur Tarin; Mr. T. F. Davison 2d, with James Salter.

For twelve Anemone pompons.—1st, Mr. H. Ellis; 2d, Mr. T. F. Davison. For six ditto, Mr. J. Hole.

For bouquet of pompon blooms, Mr. C. J. Fill was 1st; Mr. T. F. Davison 2d.

For an epergne of Chrysanthemum blooms, Mr. C. J. Fill was also 1st, with a splendid vase; 2d, Mr. F. R. Williams.

### Non-Competing Classes.

In the class for honorary members Mr. J. J. Hillier was the only exhibitor, but his stands made up for the absence of others by their excellence. Mr. T. Child exhibited, not for competition, six splendid blooms of Golden and White Queen of England. Mr. T. S. Ware, Tottenham, also staged a small stand of Chrysanthemum blooms. The Athenæum Pottery Glass Company were Highly Commended for a neat display of aquaria, fern cases, live fish, &c. Silver Cups were awarded for the best group, twelve incurved and twelve Japanese, and special prizes as seconds, with the exception of the "group."

## AMERICAN FORESTRY CONGRESS.

THE fourth annual meeting of the American Forestry Congress was recently held in the Horticultural Hall, Boston.

President Higley, in opening the proceedings, said that the subject which had brought the members together was one of great importance. Legislative action will soon be secured in various States, but legislative action cannot be expected until the majority of the people are awakened to their importance. The recent destructive flood in Canton, China, caused an immense loss of life and property, and the flood was caused by the removal, some years ago, of forests, to make room for food crops. The Chinese are eminently an agricultural people, and they have in many places sacrificed large forests to make room for Rice culture. There is abundant evidence in America of the effects of cutting off the forests. In central New York are many ponds which formerly furnished power to numerous mills; now these are dry, or at best only stagnant pools, the dams have decayed, the mills are deserted. The spring is later; formerly young cattle were turned out early in April, now it is much later; Peach trees which formerly gave abundant crops are now dead. But in the spring the warm rain melts the snow, and sudden floods carry away bridges, dams, houses, and other property. The Mississippi and Missouri rivers are frequently difficult of navigation in summer, the Connecticut and Hudson rivers are lower in summer than formerly, and the Schuylkill is so much affected by the destruction of forests near its head that the water supply of Philadelphia is seriously threatened. The climatic influences of forests are of the greatest importance and seriously affect the horticultural interests of the country. People are disposed to get the greatest possible benefits from their property, and are not disposed to neglect the cutting of timber and draining of swamps, even when they know seriously it must affect the surrounding country. But timber land is not a dead waste; it can be utilised and made profitable. In Kansas the settlers early learned the importance of trees in that country, and took measures to preserve the natural forests and to cultivate new groves. As a source of profit in Nebraska, ths cultivation of trees ranks next to the raising of stock. Forestry has proved remunerative in Europe, where for 153 years it has been under Government patronage. The book-keeping is accurate, and the balance-sheet is undisputed. In Prussia with 6,000,000 acres of public forests, there is a profit of 7,000,000 dols.; in Saxony, the profit is 4,500,000 dols.; and in Bavaria, with 3,000,000 acres, the profit is 4,500,000 dols. In Alsace during the past ten years the annual income has been 1,786,948 dols., the expenditure 596,684 dols., leaving an annual nett profit of 1,190,264 dols. It is estimated that the profits of the forests in the country amount to 800,000,000 dols. per year. There is a large destruction by fire, and the annual loss from this source is estimated at 25,500,000 dols. The amount of timber used for railroad ties is enormous, and estimating that thirty years are required for the growth of trees for this purpose, it would be necessary to have 17,000,000 acres constantly growing as a railroad reserve. "Arbor Day" has done much good in the interests of forestry. Whatever you would do for the country, you must put into the public schools. The school children take great interest in "Arbor Day." Forestry schools should be established, the public lands should be preserved, there should be a more general observance of "Arbor Day," and attention should be paid to the relations between commerce and forestry.

Vice-President N. H. Egleston, Chief of the Forestry Division of the Department of Agriculture, exhibited a large coloured chart, showing the proportion of forests and waste and cultivated land in the various States. He pointed out that we are destroying our forests at the rate of a section of country equal to the State of Rhode Island, every five days, or to the State of Massachusetts every thirty days. In closing he said—We may well inquire how long the forests can endure this drain, how long the country can bear this rapid destruction of the most important material element of its prosperity. We may well inquire, and ask the country to inquire with us most earnestly, what can be done to lessen this destruction or avoid its threatening consequences. More than one-fifth of this annual destruction—that occasioned by forest fires—is preventable, and ought to be stopped. The growth of new forests demands every reasonable encouragement. The destruction of the forests is our destruction. Our prosperity, our existence, depend upon their preservation.

Mr. William Little, a lumberman of Canada, expressed his conviction, based on an experience of fifty years, that the forests are devastated by the woodman's axe rather than by fire. Nature restores the forests by growth more quickly than the fires can destroy them.

The second day's morning session opened at 10.30 o'clock, President Higley in the chair, the Hon. Marshall P. Wilder occupying the honorary seat at his right.

The President, in a complimentary speech, introduced Colonel Wilder to the Congress, congratulating him on celebrating his eighty-seventh birthday on the previous day.

Mr. Wilder said he should never be so old as not to appreciate the objects of the Association. He welcomed its members to their first meeting in New England. He recalled the successful work of the Massachusetts Horticultural Society, the first of its kind in America. He closed by urging the Congress to continue in its great work.

Professor N. H. Egleston of Washington, read a paper on the "State of Forest Legislation in the United States." By far the most legislation seeks the protection rather than the extension of forests. He alluded to provincial laws in the earliest days providing heavy penalties for the cutting of certain trees held to be valuable—Oak and Mulberry, for instance, that were sought to be preserved for shipping and silk culture. The continuance of this course by the United States Government had been confined to the protection of the live Oak for the navy, but in other respects Congress had been neglectful. The timber used in the construction of the Mexican Central Railroad, Professor Egleston said, was stolen from the Government forests of New Mexico and Arizona. The difficulty of proof in the case of forest fires was noted as showing how laws of the several States are rendered practically null. But little had been accomplished in the way of extending forests, except by private efforts in but a few instances. In the West the interest is growing.

"Forest Economy in Canada" was the subject of Hon. H. J. Joly's paper. It was an easy matter, he said, for Canada to limit the cutting of lumber to Crown lands unfit for settlement, and these are let out to the cutters on lease, or during good behaviour under the law. In 1883 the province of Quebec enacted a law of this purport. He gave an illustration of the disastrous results of endeavouring to settle poor land, the forest originally covering it being first destroyed. He urged the Congress to work on for posterity in the face of all obstacles, and closed by describing the stringent legislation covering locomotives, their owners and drivers, to prevent forest fires.

Professor P. H. Dudley, of the New York Central Railroad, exhibited a series of photo-micrographs, showing the structure, tissues, and cells of various woods, and gave brief descriptions of them and their uses for railway purposes.

Mr. S. W. Powell, of Brooklyn, read a paper on "What are the Requisites of an effective Forest Fire Legislation?" He said that legislation should not be too much in advance of public sentiment, for fear of reaction, and should be followed by steady enforcement to insure efficiency. Discrimination should be made between direct and indirect damage, and special officers should be appointed so as to be beyond partisan influences. The danger from visitors in such regions as the Adirondacks was pointed out, and proprietors and guides urged as the proper persons to fill the forest official positions. In the lumber districts the prudent must restrain the reckless.

Mr. J. N. Lander, Superintendent of Motive-power on the Old Colony Railroad, read a paper on "Sparks' Arrester for Locomotives." The enlargement of engines, made possible by the advent of steel, has allowed of larger furnace area, and consequent opportunity for more perfect combustion. Such engines Mr. Lander believed to be absolutely safe for roads running through forests.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON*

FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 4, 1885.

| Month and Day. | Barometer: Mean Reading at 32° Fahr. | Barometer: Departure from Average of 18 years | Temperature of the Air: Highest. | Lowest. | Range. | Mean for Day. | Departure of Mean from Average of 39 years. | Dew Point. | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity Sat. = 100 | Wind: Average Direction. | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| Oct. 29 | 29.68 | —0.05 | 49.5 | 39.9 | 9.6 | 44.7 | —2.5 | 38.4 | 79 | N.W.: | 0.00 |
| 30 | 29.76 | +0.02 | 47.5 | 32.0 | 15.5 | 39.5 | —6.0 | 35.9 | 91 | E. S.E. | 0.00 |
| 31 | 29.16 | —0.58 | 45.8 | 42.0 | 3.8 | 43.1 | —3.4 | 41.7 | 95 | E.: E.S.E. | 0.49 |
| Nov. 1 | 29.78 | +0.03 | 47.4 | 39.0 | 8.4 | 42.7 | —3.5 | 36.7 | 89 | N.NW.: W.NW. | 0.10 |
| 2 | 29.97 | +0.21 | 53.5 | 35.5 | 18.0 | 45.5 | —0.5 | 42.0 | 88 | W.: W.NW. | 0.00 |
| 3 | 29.87 | +0.10 | 52.0 | 45.0 | 7.0 | 48.8 | +3.0 | 46.3 | 91 | W.: W.S.W. | 0.07 |
| 4 | 29.68 | —0.10 | 52.3 | 48.0 | 4.3 | 48.0 | +2.4 | 47.2 | 97 | W.S.W. | 0.39 |
| Mean | 29.70 | —0.05 | 49.7 | 40.2 | 9.5 | 44.5 | —1.5 | 41.2 | 89 | Variable | 1.05 |

Oct. 29.—Fine morning, dull afternoon, fine night.
— 30.—Fog in early morning, dull day.
— 31.—Rain from early morning till about noon, darkness from 1 P.M. to 2 P.M., very dull after 2 P.M.
Nov. 1. Fine day, fog in evening
— 2.—Dull in early morning, very fine day.
— 3.—Drizzling rain from early morning throughout the day.
— 4.—Drizzling rain from early morning till evening, fine night.

LONDON: *Atmospheric Pressure.*—During the week ending October 31, the reading of the barometer at the level of the sea increased from 29.31 inches at the beginning of the week to 29.67 inches by 9 A.M. on the 25th, decreased to 29.10 inches by 11 A.M. on the 26th, increased to 29.52 inches by 9 P.M. on the 28th, decreased to 29.49 inches by 1 P.M. on the same day, increased to 30.05 inches by 9 A.M. on the 30th, decreased to 29.33 inches by 1 P.M. on the 31st, and was 29.34 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.55 inches, being 0.20 inch lower than last week, and 0.36 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 56°.5, on the 26th, on the 31st the highest temperature was 45°.8. The mean of the seven high day temperatures was 48°.7.

The lowest temperature was 32°, on the 30th, on the 27th the lowest temperature was 43°.5. The mean of the seven low night temperatures was 38°.

The greatest range of temperature in one day was 20°.5, on the 26th; the smallest, on the 31st, was 3°.8. The mean of the seven daily ranges was 10°.7.

The mean temperature were on the 25th, 40°; on the 26th, 47°.4; on the 27th, 45°; on the 28th, 41°.3; on the 29th, 44°.1; on the 30th, 39°.5, and on the 31st, 43°; and these were all below their averages (excepting the 26th, which was 0°.2 above) by 7°.5, 1°.9, 5°.4, 2°.5, 6°, and 3°.4 respectively.

The mean temperature of the week was 42°.9, being 1°.5 lower than last week, and 3°.8 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 73°. on the 26th. The mean of the seven readings was 65°.8.

The lowest reading of a minimum thermometer placed on grass was 25°, on the 30th. The mean of the seven readings was 31°.5.

*Rain.*—Rain fell on two days, to the amount of 0.67 inch.

ENGLAND: *Temperature.*—During the week ending October 31, the highest temperatures were 58°.4 at Cambridge, 58°.2 at Bristol, 57° at Truro and Plymouth; the highest at Bolton and Newcastle was 50°, at Sheffield and Preston 51°. The general mean was 54°.

The lowest temperatures were 28°.8 at Wolverhampton, 30° at Cambridge, 30°.8 at Bolton; the lowest at Brighton was 36°.5, at Truro, Liverpool, and Newcastle 36°. The general mean was 33°.2.

The greatest ranges were 28°.4 at Cambridge, 26°.2 at Wolverhampton, 25° at Bristol; the least ranges were 14° at Newcastle, 15°.4 at Liverpool, 17°.3 at Bradford. The general mean was 20°.8.

The mean of the seven high day temperatures was highest at Truro, 54°, at Plymouth 52°.8, at Bristol 51°.1; and was lowest at Bolton, 46°.2, at Sheffield 46°.5, at Liverpool 47°.2. The general mean was 49°.

The mean of the seven low night temperatures was highest at Truro, 42°.4, at Plymouth 39°.9, at Liverpool 39°.5; and was lowest at Wolverhampton, 34°.1, at Bolton 35°, at Sheffield 36°.7. The general mean was 38°.

The mean daily range was greatest at Wolverhampton, 14°.4, at Bristol 13°.6, at Cambridge 13°; and was least at Liverpool, 7°.7, at Newcastle 8°.3, at Brighton and Bradford 9°.6. The general mean was 11°.

The mean temperature was highest at Truro, 47°.4, at Plymouth 45°.6, at Bristol 43°.5; and was lowest at Bolton, 39°.8, at Wolverhampton 40°.5, at Sheffield 40°.8. The general mean was 42°.7.

*Rain.*—The largest falls were 3.04 inches at Bolton, 3.03 inches at Truro, 2.09 inches at Sheffield; the smallest falls were 0.55 inch at Bristol, 0.67 inch at Blackheath, 0.89 inch at Newcastle. The general mean was 1.45 inch.

SCOTLAND: *Temperature.*—During the week ending October 31, the highest temperature was 50°, at Paisley and Perth; at Dundee the highest temperature was 48°.7. The general mean was 49°.3.

The lowest temperature in the week was 21°, at Perth; at Leith the lowest temperature was 29°. The general mean was 25°.9.

The mean temperature was highest at Leith, 41°.8; and lowest at Perth, 39°.9. The general mean was 40°.9.

*Rain.*—The largest fall was 2.03 inches, at Greenock; the smallest fall was 0.46 inch, at Edinburgh. The general mean was 1.01 inch.

JAMES GLAISHER, F.R.S.

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SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, November 2, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been cloudy or dull very generally, with a considerable amount of rain.

The *temperature* has about equalled the mean in "Scotland, E.," but elsewhere it has continued below, the deficit varying between 1° and 3°. The daily maxima were generally low, but on November 2 they ranged from 54° in the north and west of Scotland to 58° in "Ireland, S.," and 59° in "Scotland, E." The minima, which were recorded either on October 30 or 31, varied between 26° in "England, N.W.," 29° in the "Midland Counties," and 33° in "Scotland, W.," and "Ireland, S." In the "Channel Islands" the minimum was 43°.

The *rainfall* has been rather less than the mean in "Scotland, E.," and about equal to it in "England, S.," and "Ireland, S.," but more in all other districts. Over central and north-western England the excess was large.

*Bright sunshine* shows a decrease in Scotland, but an increase over England and Ireland. The percentages of the possible duration ranged from 11 in "England, N.E.," to 37 in the "Midland Counties," and 41 in the "Channel Islands."

*Depressions observed.*—The distribution of barometric pressure has been subject to considerable changes, and the movements of the depressions somewhat erratic. The disturbances which most affected the wind and weather in our islands were the following:—1, a band or "trough" of low pressure, having two distinct minima, which stretched from Scotland to the south of Sweden on the 28th, and subsequently moved south-eastwards; and, 2, a small but rather deep depression which moved quickly up the Channel during the night of the 30th—31st, and afterwards disappeared to the south-eastward. At the end of the period the barometer was again falling in the west, and further depressions were approaching us from the Atlantic. Strong westerly winds or gales were prevalent till late on the 28th, when fresh north-westerly or northerly breezes became general for a time. By the 30th, however, the wind was blowing strongly from the southward in the west, and moderately from east in the south-east, but as the depression referred to above passed along the Channel strong winds or gales from between east and north were experienced. At the close of the period moderate to strong south-westerly breezes were reported.



## Law Notes.

PUNISHMENT FOR PETTY PILFERING AT THE ROYAL DUBLIN SOCIETY'S SHOW.—A Dublin correspondent states:—At the Southern Divisional Police Court here on Saturday, October 17, before Mr. Woodlock, a respectably-dressed man, Arthur Murphy, of 32, Haddington Road, no business, was charged with having stolen prize Potatos, value 1s., the property of Mr. Seymour Mowbray, from the premises of the Royal Dublin Society, Ball's Bridge.

Constable 93 E stated that his attention was attracted to the prisoner by the manner in which the latter was observing him. Witness followed the accused, and the latter, seeing that he was being looked after, entered the premises of the Royal Dublin Society, and went into the refreshment saloon. When he came out, he (witness) asked him what was the bulk he had in his pocket. The prisoner said they were a few Potatos he had got inside, but he did not know who gave them to him. Witness then charged him with the unlawful possession of the Potatos, when he admitted that he had taken one off each plate.

The Prisoner: I got them on the floor, and thought it was no harm to take them.

The Constable: He afterwards made a further statement that he got one off the plate, and the others on the floor.

The Prisoner: I had no notion it was any harm to take them, as the exhibitors had all gone away.

Mr. P. S. Barrington stated that the Royal Dublin Society was anxious to press the charge in the interests of exhibitors, who were really not safe if such a course were allowed to be pursued. The Potatos stolen were portion of a collection for which a prize of £3 had been awarded. Another exhibitor had taken a £23 prize. Some of the exhibitors had actually to put their Potatos in rabbit nets to protect them from being stolen.

Mr. Woodlock: Is this a thing that has been often done?

Mr. Barrington: No, it is not. Exhibitors have confidence in the Society, because there is always a very careful look-out kept.

The prisoner said he was very sorry for it, but as the exhibitors had all cleared away, finding the Potatos lying on the ground here and there, he thought it no harm to take them.

Mr. Barrington: The Potatos on the tables were not cleared away.

The prisoner was fined 40s., or one month's imprisonment.

## Obituary.

M. C. J. M. JONGKINDT-CONINCK. — From the *Bulletin d'Arboriculture* we hear of the death of this well-known writer on agriculture and horticulture. He was the director of the Agricultural Institute at Wageningen, and took a large part in promoting horticultural and agricultural education in the Netherlands. He died on August 15, in the fifty-second year of his age.

—— EDWARD OTTO.—We also regret to learn of the death of this gentleman, on the 11th ult. For many years he was editor of the *Hamburger Garten und Blumen Zeitung*, a publication which was not a mere popular *rechauffé* of other people's work, but contained a large proportion of the results of original research.

—— MR. WILLIAM HOLMAN.—It is with much regret that we have to record the death, on October 17, of Mr. William Holman, in his eighty-second year. For sixty years he occupied the post of head gardener to the Earl of Chichester, at Stanmer Park, near Brighton, Sussex. For many years he was a most successful exhibitor at the Brighton and other horticultural shows, producing both plants, flowers, and fruit of the highest merit. In these days of frequent changes it is a pleasure to note such a long period of service as the above. That the same was valued by his noble employer it is almost needless to mention, for the Earl always took a lively interest in his garden, visiting his aged and faithful servant but a few hours only before his decease. *J. H.*

## Enquiries.

"*He that questioneth much shall learn much*"—BACON.

SADDLE-BACK BOILERS.—*Y. Z.* writes as follows:—"Are saddle-back boilers used in limekilns, for heating hothouses, &c.? Where can one be seen, or can any one give information on the subject?"

## Answers to Correspondents.

*** OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARDCHRON, LONDON," GARDCHRON *being written as one word. Telegrams (but not letters) thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

CARNATIONS DISEASED: *Friday.* The Carnations are affected by a disease caused by microscopic or thread-worms. The subject is described and illustrated in the *Gardeners' Chronicle* for December 3, 1881. Where possible, and in bad cases, the affected leaves should be removed and burnt. The worms come from the soil or the water.

ERRATA: ONIONS. — In our report of the vegetable section of the last show at South Kensington, read, in the competition of Onions, "nines" instead of "sixes." Mr. Deverill also showed nearly 500 bulbs of the kinds Anglo White Spanish, Rousham Park Hero, Main Crop, and the Wroxton, for which a Silver Banksian Medal was awarded. Also, Mr. R. Farrance took the 1st prize for twelve Tomatos, and Mr. Phillips the 2d.

FUNGI: *F. Steele.* 1, Agaricus longipes, var.; 2, A. granulosus; 3, A. fimiputris; 4, Hygrophorus virgineus; 5, two small perished species belonging to Mycena and Nolanea; material insufficient for naming. —*A. D. W., Bangor.* 1, black, on Oak, Bulgaria inquinans; 2, yellow, amongst grass, Clavaria mascoides; 3, salmon colour, on Sycamore, Nectria cinnabarina. *W. G. S.*

NAMES OF FRUITS: *W. Foster.* Aston Town.—*J. B.* 1, Crassane; 2, Winter Crassane; 3, Bergamote d'Esperen; 4, Comte de Lamy; 5, Beurré Hardy; 6, Fondante d'Automne; 7, Easter Beurré. —*R. C. P.* 10, Yorkshire Greening. The others are quite unknown to us. There are many Apples in your district (Yorkshire) that are quite unknown elsewhere.—*J. U.* 1, St. Lawrence; 2, Josephine de Malines; 3, Flemish Beauty; 4, Black Achar; 5, Comte de Lamy; 6, Ne Plus Meuris.—*H. K.* 1, Flower of Kent; 3, Gloria Mundi; 4, Hanwell Souring; 6, Golden Noble; 7, Brabant Bellefleur. Others not recognised. — *T. S., Stroud.* 2, Beurré Hardy; 3, Easter Beurré; 4, Fearn's Pippin; 5, Striped Beefing. — *A. Haggart.* 1, Hanwell Souring; 3, Cox's Pomona; 4, Golden Noble; 5, Stunmer Pippin; 6, Beurré d'Amanlis; 7, Glou Morçeau; 10, Emile d'Heyst; 11, Beurré Rance; 12, Easter Beurré. —*Sandy.* 2, Catillac; 3, Beurré Hardy; 4, Emperor Alexander. — *E. Allen.* 1, Doyenné Boussoch; 2, 4, Beurré Diel; 3, Bergamotte d'Esperen; 5, Vicar of Winkfield; 6, Beurré Clairgeau; 7, Beurré Bachelier. — *Pomologist.* A Bullace of some sort.—*J. Robson.* *Pear:* Laure de Glymes. —*A. N.* 1, Claygate Pearmain; 2, Golden Noble. — *L. P. J.* 1, Warner's King; 16, Gansel's Bergamot; 17, small Passe Colmar; 18, Duchesse d'Angoulême; 19, Thompson's; 20, Beurré Hardy; 21, Beurré Diel.—*Constant Reader.* Irish Peach. — *T. R.* 1, Beurré d'Amanlis; 2, Josephine de Malines; 3, Glou Morçeau; 4, Nonsuch; 5, King of the Pippins; 6, not known.

NAMES OF PLANTS: *Cocker & Co.* Maxillaria picta. —*Cooper.* 1, Pteris cretica; 2, Pelargonium capitatum; 3, Cocoloba platycladon; 4, Pelargonium sp.; 5, Eupatorium Weinmannianum; 6, Pelargonium glutinosum.—*W. Y. D.* Cucumber (next week); not the Sooty Deca.—*R. W.* 1, Oncidium Wentworthianum; 2, Diplacus glutinosus.—*W. Scott.* 1, Aster amellus; 2, A. vimineus var. horizontalis; 3, A. Novi-Belgii; 4, Veronica incana.—*G. Fleming.* Hæmanthus albiflos.—*Woodside.* Pleione lagenaria; Bouvardia species, quite undistinguishable on arrival.—*H. J. Ross.* Pleione maculata; Cymbidium species next week.—*Constant Reader.* Cineraria maritima.

ORCHIDS: *S. R. Payson, Belmont, Mass., U.S.A.* The Cattleya bloom was partially decayed on arrival, as were the leaves of Phalænopsis, so that we cannot name the first nor indicate the nature of the disease on the last.

SEEDLING GRAPE: *Strebor.* Your white seedling from Gros Colmar is a juicy well-flavoured fruit, with skin thinner than is the case with the seed-parent. If it

should prove, on further trial, as good as that kind, it will be a welcome addition to late-keeping Grapes. The specimens sent were not in good condition for forming a just decision.

SUNFLOWERS: *W. Evans.* 1. About 4 to 5 lb. per acre, according to soil, &c. The seed should be drilled into the ground in rows 18 inches apart, and the plants thinned out to 30 inches from plant to plant, so there would be about 11,000 plants per acre, or a less distance could be used. 2 and 3. Get seed from South Russia, where it is extensively grown. 4. Usually four. 5. The produce per acre in South Russia is about 15 cwt. 3½ qr., and oil per acre 275 lb. Each flower produces about 1000 seeds. 6. It all depends on the condition of the soil. A light rich soil, and quite open, is the best. In Russia a seed sown in September yields seed in February. Sow about 1 inch deep, and when it has grown 1 foot high, earth up. 7. No; and unless you remove too many, there would be no effect whatever, but too many would ruin the crop. 8. Depends on circumstances. The above are from *Tropical Agriculture.*

TERM OF NOTICE TO LEAVE SERVICE: *Enquirer.* Young men in gardens, whether foremen or not, are not yearly servants, and being usually paid at weekly intervals, can claim only a week's notice, or its equivalent in money and rent if there is a lodging found.

WHANGEE CANE: *J. Bryan.* The name given to some Eastern canes, species of Phyllostachys.

## CATALOGUES RECEIVED.

T. IMRIE & SONS, Ayr—Forest Trees, Coniferæ, Fruit Trees, &c.

HOWDEN & CO., Inverness Nurseries, Inverness—Nursery List.

GEO. COOLING & SONS, Bath—Roses and Fruit Trees.

JONES & SONS, 7, Shoplatch, Shrewsbur—General.

JAS. BOYD & SONS, Paisley—Horticultural Buildings, &c.

W. DRUMMOND & SONS, 58, Dawson Street, Dublin and Stirling—Trees, Shrubs, Roses, &c.

CRANSTON'S NURSERY AND SEED COMPANY, King's Acre, Hereford—Roses.

ROBERT OWEN, Castle Hill, Maidenhead—Tuberous Begonias, Chrysanthemums, and other Florists' Flowers.

KETTEN BROTHERS, Luxemburg—Roses.

JAMES DICKSON & SONS, Newton Nurseries, Chester—Forest and Ornamental Trees, &c.

W. P. LAIRD & SINCLAIR, Dundee—Roses.

COMMUNICATIONS RECEIVED:—J. Hall, Jamaica.—C. W. F. M. P.—C. N.—M. I.—J. T.—A. E. P.—W. B. H., Cork.—J. S.—W. H.—J. S. B.—W. L. F. I. Delaperiere. F. F. B., Melbourne.—H. H. D.—W. O. H. —D. O. C. D. P.—The Institute of Civil Engineers.—H. Correvon, Geneva.—H. G. Reichenbach. F. M. F. W. B. M. C. C.—J. W. W.—Secretary, R.H.S.—R. B. Holt.—J. R.—J. H. V.—W. E.—C. J.—W. S.—W. B. H.—Wild Rose. W. B. J.—R. D. J.—N. W. C.—W. C. S.—Sydenham.—J. R. B. W. P. J. S.—A. C.—T. K. & C.—W. K.

# Markets.

*COVENT GARDEN, November* 5.

TRADE heavy; prices generally lower. *James Webber, Wholesale Apple Market.*

FRUIT—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0- | 3 0 | Peaches, per doz. | 3 0- | 8 0 |
| Grapes, per lb. | 0 0- | 1 6 | Pine-apples, Eng. lb. | 2 0- | 5 0 |
| Kent Cobs, 100 lb. | 22 0- | 25 0 | — St. Michael, each | 2 6- | 5 0 |
| Kent Filberts, 100 lb. | 25 0- | .. | Pears, per dozen | 0 9- | 1 3 |
| Lemons, per case | 15 0- | 30 0 | — per ½-sieve | 1 6- | 3 0 |
| Melons, each | 1 0- | 1 6 | | | |

VEGETABLES—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, per doz. | 1 0- | .. | Mushrooms, punnet | 0 6- | 1 0 |
| Beans, Kidney, lb. | 0 3- | .. | Mustard and Cress, punnet | 0 2- | .. |
| Beet, red, per dozen | 1 0- | 2 0 | Onions, per bunch | 0 3- | .. |
| Broccoli, bundle | 1 0- | 1 0 | Parsley, dozen bunch | 2 0- | 3 0 |
| Cabbages, per dozen | 1 0- | .. | Parsnips, per dozen | 1 0- | 2 0 |
| Capsicums, per 100 | 1 0- | 2 0 | Potatoes, per cwt. | 4 0- | 5 0 |
| Carrots, per bunch | 0 3- | 0 4 | .. kidney, per cwt | 4 0- | 5 0 |
| Cauliflowers, per doz. | 2 0 | 3 0 | Rhubarb, per bundle | 0 4- | .. |
| Celery, per bundle | 1 6- | .. | Salsafy, per bundle | 1 0- | .. |
| Coleworts, doz. bunch | 2 0- | 3 0 | Scorzonera, per bundle | 1 6- | .. |
| Cucumbers, each | 0 3- | 0 6 | Shallots, per pound | 0 3- | 0 9 |
| Endive, per dozen | 1 0 | 2 0 | Spinach, per bushel | 2 0- | 4 0 |
| Herbs, per bunch | 0 2- | .. | Tomatos, per lb. | 0 4- | .. |
| Leeks, per bunch | 0 3- | 0 4 | Turnips, bunch | 0 4- | .. |
| Lettuce, per dozen | 1 0- | 1 6 | | | |

POTATOS.—Magnum Bonums, bad trade, 50s. to 80s; Regents 60s. to 80s. per ton; German Reds, 2s. to 2s. 6d. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, dozen | 6 0- | 18 0 | Evergreens, in var., per dozen | 6 0- | 24 0 |
| Arbor vitæ (golden), per dozen | 6 0- | 18 0 | Ficus elastica, each | 1 6- | 7 0 |
| — (common), dozen | 6 0- | 12 0 | Ferns, in var., dozen | 4 0- | 18 0 |
| Arum Lilies, dozen | 9 0- | 18 0 | Foliage Plants, various, each | 2 0- | 10 0 |
| Begonias, per dozen | 6 0- | 12 0 | Fuchsias, per dozen | 6 0- | 9 0 |
| Bouvardia, doz. sprays | 12 0- | 18 0 | Hyacinths, Rom. pot | 1 0- | 1 6 |
| Chrysanth., per doz. | 9 0- | 18 0 | Marguerite Daisy, per dozen | 8 0- | 12 0 |
| Cyperus, per dozen | 4 0- | 12 0 | Myrtles, per dozen | 6 0- | 12 0 |
| Dracæna terminalis, per dozen | 30 0- | 60 0 | Palms in var., each | 2 6- | 21 0 |
| — viridis, per doz. | 12 0- | 24 0 | Pelargoniums, scarlet, per dozen | 2 6- | 9 0 |
| Erica, various, doz. | 12 0- | 21 0 | Poinsettia, per dozen | 12 0- | 18 0 |
| Euonymus, in var., per dozen | 6 0- | 18 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0- | 4 0 | Marguerites, 12 bun. | 3 0- | 6 0 |
| Arum Lilies, 12 blms. | 6 0- | 8 0 | Mignonette, 12 bun. | 1 6- | 3 0 |
| Azalea, 12 sprays | 1 0- | 2 0 | Pelargoniums, per 12 trusses | 1 0- | 1 6 |
| Bouvardias, per bun. | 0 6- | 1 0 | — scarlet, 12 trusses | 0 9- | 1 0 |
| Camellias, 12 blms. | 3 0- | 6 0 | Poinsettia, 12 blms. | 9 0- | 12 0 |
| Carnations, 12 blms. | 1 0- | 3 0 | Roses (indoor), per dozen | 1 0- | 3 0 |
| Chrysanth., 12 blms. | 0 6- | 4 0 | — 12 bunches | 6 0- | 12 0 |
| Gardenia, 12 blooms | 3 0- | 6 0 | Stephanotis, 12 spr. | 5 0- | 6 0 |
| Hyacinths, Rom., 12 sprays | 1 6- | 2 0 | Tropæolum, 12 bun. | 2 0- | 3 0 |
| Lapageria, white, 12 blooms | 2 0- | 3 0 | Tuberoses, 12 blms. | 0 9- | 1 6 |
| — red, 12 blooms | 1 0- | 2 0 | Violets, 12 bunches | 1 0- | 1 3 |
| Lil. longif., 12 blms. | 6 0- | 8 0 | — Czar, Fr., bunch | 1 0- | 1 6 |
| | | | — Parme, Fr., bun. | 4 0- | 5 0 |

## SEEDS.

LONDON: *Nov.* 4.—The attendance on the seed market to-day, as might be expected, was very thin, and the business doing exceedingly small. Of speculative demand there is scarcele any just now showing itself, whilst no variety seems actually needed for present sowing. Red Clover seed, however, is held with increasing firmness, higher prices being confidently anticipated later on. Winter Tares, owing to the continued sodden condition of the land, are quite a dead letter. Hemp seed is lower than it has been for many years past. The new Turkish Canary seed is also extremely cheap. There is more enquiry for blue Peas and Haricot Beans. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

MARK LANE: *Nov.* 2.—For English Wheat prices ruled in many cases 6*d.* to 1*s.* lower to sell in quantity. Foreign Wheats were adversely influenced by this reduction, and the more difficult to sell, except at reduced rates. Country flour compared 6*d.* under the rates of this day week. Prime malting Barley was firm, and fully as dear as last noted. Second qualities were very dull, and grinding descriptions barely supported late value. Peas met a dull sale, and were 6*d.* lower. Round Maize was 3*d.* dearer. Oats met a fair demand, and were 3*d.* to 6*d.* above the rates current on this day se'nnight.

*Nov.* 4.—The trade for Wheat and flour continues very quiet here, and no quotable change has occurred in prices. Barley, Beans and Peas sold in retail at about previous rates. There was more doing in Oats at slightly better prices.

*Average prices* of corn for the week ending Oct. 31:—Wheat, 31*s.* 4*d.*; Barley, 30*s.* 2*d.*; Oats, 19*s.* 3*d.* For the corresponding period last year:—Wheat, 32*s.* 3*d.*; Barley, 32*s.*; Oats, 19*s.* 2*d.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Nov.* 3 *and* 4.—Fair supply of fruit and vegetables. Prices moderate, demand good. Quotations:—Pears, 3*s.* to 6*s.*, and Apples, 2*s.* to 5*s.* per bushel; Cabbages, 2*s.* 6*d.* to 4*s.*, Savoys, 3*s.* to 4*s.* 6*d.*, and Cauliflowers, 5*s.* to 7*s.* 6*d.* per tally; bunch greens, 2*s.* 6*d.* to 4*s.*, ditto Turnips, 2*s.* 6*d.* to 3*s.* 6*d.*, ditto Carrots, 2*s.* to 3*s.*, ditto Parsley, 1*s.* to 1*s.* 6*d.*, and Beetroots, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Brussels Sprouts, 2*s.* to 2*s.* 6*d.* per half sieve; Celery, 7*s.* to 12*s.* per dozen bundles; Onions, 3*s.* to 4*s.* per cwt.; pickling ditto, 4*s.* to 4*s.* 6*d.* per cwt.; Carrots, 30*s.* to 50*s.*, white Turnips, 45*s.* to 60*s.*, Swede ditto, 30*s.* to 35*s.*, and loose Mangels, 22*s.* 6*d.* to 25*s.* per ton.

STRATFORD: *Nov.* 3.—Supplies have been good during the past week, as also the attendance of buyers, consequently a fair trade has been done at the following quotations:—Cabbages, 5*s.* to 8*s.*, Savoys, 5*s.* to 9*s.*, and Collards, 5*s.* to 6*s.* per tally; greens, bunch, 3*s.* 6*d.* to 5*s.*, and Cauliflowers, 1*s.* to 2*s.* per dozen; Mangels, 17*s.* to 21*s.*, Onions, 6*s.* to 9*s.*, Carrots, cattle feeding, 30*s.* to 32*s.* ditto, household, 40*s.* to 50*s.*, Turnips, 60*s.*, per ton; ditto bunch, 3*s.* to 4*s.* per dozen; and Swedes, 30*s.* to 40*s.* per ton; Apples, 8*s.* to 11*s.* per cwt., 1*s.* 9*d.* to 6*s.* per bushel; Beet, 6*d.* to 9*d.* per dozen; Tomatos, 3*s.* 6*d.* per dozen pound.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 3.—Supplies rather more than sufficient for the demand, which was, however, rather better. Best samples upheld their value, inferior sorts were dull and irregular. Quotations:—Regents, 60*s.* to 80*s.*; Magnum Bonums, 60*s.* to 80*s.*; Early Roses, 70*s.* to 80*s.*; Hebrons, 80*s.* to 100*s.*; German, 45*s.* per ton.

COLUMBIA (East London): *Nov.* 3.—Trade firm for good samples. Magnum Bonum, 50*s.* to 75*s.*; Champions, 45*s.* to 55*s.*; Victoria, 50*s.* to 60*s.*; Regents, 60*s.* to 65*s.*; Early Rose, 50*s.* to 60*s.*; Reading Hero, 60*s.* to 70*s.*; and Beauty of Hebron, 65*s.* to 80*s.* per ton.

*Nov.* 4.—Good demand for better classes. Beauty of Hebron, 65*s.* to 80*s.*; Reading Hero, 60*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Champions, 45*s.* to 55*s.*; Victoria, 50*s.* to 60*s.*; Regents, 60*s.* to 65*s.* per ton.

STRATFORD: *Nov.* 3.—Magnum Bonums, 50*s.* to 75*s.*; Regents, 60*s.* to 70*s.*, and Champions, 52*s.* per ton.

*Imports.*—The imports into London last week consisted of 2708 bags to casks from Hamburg, 600 packages from Ghent, 1196 bags from Stettin, 41 sacks from Boulogne, 4 bags from Terneuzen, 60 from Bremen, 204 sacks from Dantzig, and 2 baskets from Rotterdam.


**Planting Season.**

JOHN PERKINS AND SON offer the following in large quantity, at very low prices. All goods well-transplanted stuff:—

ASH, Common, 2 to 3, and 3 to 4 feet.
PINE, Austrian, 1½ to 2, and 2 to 2½ feet.
BIRCH, 1½ to 2, and 2 to 3 feet.
LARCH FIRS, 2 to 3, and 3 to 4 feet.
OAKS, English, 2 to 3, and 3 to 4 feet.
SPRUCE FIRS, 1½ to 2, and 2 to 3 feet.
SYCAMORE, 2 to 3, and 3 to 4 feet.
HAZEL, 2 to 3, and 3 to 4 feet.
PRUNUS MYROBOLANA, 1½ to 2, and 2 to 3 feet.
BLACKTHORN, 1 to 2 feet.
HOLLY, Green, 1½ to 2, and 2 to 3 feet.
HORNBEAM, 2 to 3, and 3 to 4 feet.
LAURELS, Common, 1½ to 2, 2 to 3, and 3 to 4 feet.
PRIVET, Evergreen, 2 to 3, and 3 to 4 feet.
YEW, English, 1½ to 2, 2 to 3, and 3 to 4 feet.
THORN QUICK, fine transplanted.
Special offers on application.
Billing Road Nurseries, Northampton.

ROSES—ROSES—ROSES.—Splendid Plants of the following and other fine varieties, in 7-inch pots, 24*s.*, 30*s.*, 36*s.*, and 42*s.* per dozen:—Maréchal Niel, Gloire de Dijon, Chesbunt, Hybrid Perpetuals, Devoniensis, Duke of Connaught, Homer, Isabella Sprunt, Madame Lambard, Madame Willermoz, Niphetos, Etoile de Lyon, Perle des Jardins, Safrano, &c. Our Roses are well known to be the finest and healthiest in the country. Complete LISTS of varieties in stock will be sent on application.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL."

FRUIT TREES.—Fine healthy stock of extra-sized trees. Horizontal and Dwarf-trained APPLES and PEARS, Dwarf-trained APRICOTS, PEACHES, PLUMS, and NECTARINES; Standard and Pyramidal PEARS and PLUMS. Fruiting trees, in pots, of APRICOTS, PEACHES, NECTARINES, and FIGS. Prices on application.
D. S. THOMSON AND SONS. The Nurseries, Wimbledon.

PALMS.—A few hundreds of splendidly-grown healthy Seaforthia elegans, Latania borbonica, Corypha australis, Phœnix canariensis, Areca lutescens, and Euterpe edulis, 12 inches high, 42*s.* per dozen, 25*s.* per 100; same sorts, 20 inches high, 72*s.* per dozen, less quantity, 1*l.* 3*d.* each.
FERNS.—Strong, healthy, and handsome Lomaria Gibba, Adiantum cuneatum (Maidenhair), Pteris tremula, Pteris serrulata, Pteris serrulata cristata, Pteris cretica albo lineata, Pteris argyrea, out of small pots, 20*s.* per 100, 3*s.* per dozen.
GARDENIA INTERMEDIA (true), 6*s.* per dozen.
Packages and parcels post-free.
GARDENER, Holly Lodge, Stamford Hill, London, N.

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MESSRS. JOHN STANDISH AND CO. beg to announce to their Friends and the Public that they have an unusual quantity of well-grown NURSERY STOCK, consisting of a choice collection of CONIFERS, RHODODENDRONS, Standard and Bush ROSES, Evergreen and Deciduous SHRUBS of every description, FRUIT TREES of all kinds, IVIES, CLEMATIS, and all other varieties of CLIMBING PLANTS. Also fine stocks of GARDENIAS, AZALEAS, CAMELLIAS, Winter Flowering HEATHS, BOUVARDIAS, Maidenhair FERNS, PALMS, and every beautiful Plant that can be named, which they are prepared to offer upon most favourable terms for Cash. Special quotations on application.

PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract:—
From the *Gardeners' Chronicle and Agricultural Gazette*, London:—"MONSTER BROCCOLI.—A few days since, Mr. C. Kessell, of The Coombe, Penzance, who has been a Broccoli grower for upwards of half a century, and was one of the first to get the Early Broccoli of Cornwall into the London and Northern Markets, cut two monster Broccoli, which together weighed 50 lb. They were the sort known as Pontey's Late White Wilcove. The huge scales at the smelting-house had to be called into requisition to ascertain the weight of the plants." Retail price, 2*s.* 6*d.* per ounce. Special quotations to the Trade.
Apply to
E. WILSON SERPELL, 21, Cornwall Street, Plymouth.

**To Nurserymen, Seedsmen, and Florists.**
DUTCH BULBS—Season 1885.

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**100 Herbaceous and Alpine Plants for 25*s.***
RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rockwork, which produce flowers and render the garden attractive all through the year. New LIST of sixty-four pages free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SPECIAL CHEAP OFFER.—PINES, Austrian, from 2 to 6 feet: LARCH, from 2 to 4 feet; FIR, Scotch, 12 to 24 inches; ELM, 3 to 4 feet, 4 to 5 feet; ASH, Common, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; BIRCH, 1½ to 2 feet, 2 to 3 feet, 7 to 8 feet, 8 to 10 feet; CHESTNUT, 1 to 2 feet; HORNBEAM, 2 to 3 feet, 3 to 4 feet, 7 to 8 feet, 8 to 9 feet; MAPLE, 4 to 10 feet; OAK, English, from 1 to 10 feet; POPLARS, Lombardy, 7 to 8 feet, 8 to 10 feet, 10 to 12 feet; POPLARS, American, 7 to 8 feet, 10 to 12 feet; PRIVET, Evergreen, 2 to 3 feet, 3 to 4 feet, good; PRIVET, Oval-leaf, 2 to 3 feet, 3 to 4 feet, fine; QUICK, THORN, 4, 5, and 6-yr., fine; SYCAMORES, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 8 to 9 feet; AUCUBAS, 2 to 3 feet; BERBERRIS AQUIFOLIA, BOX, CUPRESSUS, various; ELDERS, Gold; CURRANTS, flowering; HOLLIES, in great variety; IVIES, in sorts; JUNIPERS, LABURNUMS, LAURELS, assorted; RHODODENDRONS, several hundred thousand of all sorts and sizes—beautiful stuff; RETINOSPORAS, YEWS, Common and Irish. For Price LIST, &c., apply to
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THE

# GARDENERS' CHRONICLE

(Established 1841)

CONTAINS ARTICLES ON ALL DEPARTMENTS OF

## GARDENING, PRACTICAL AND SCIENTIFIC,

REPORTS OF EXHIBITIONS,

*REVIEWS of BOOKS, and NOTICES of all HORTICULTURAL MATTERS of CURRENT INTEREST,*

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*Illustrations by W. H. FITCH, F.L.S., W. G. SMITH, F.L.S., W. J. WELCH, and Others.*

## GARDENERS' CHRONICLE FORM OF SUBSCRIPTION

FROM

TO

W. RICHARDS,
41, WELLINGTON STREET, STRAND,
*LONDON, W.C.*

_____ 1885.

*Please send me* "THE GARDENERS' CHRONICLE" *for* _____ *Months,*

*commencing* _____, *for which I enclose P.O.O.* _____.

**Please Note that all Copies Sent Direct from this Office must be paid for in advance.**

THE UNITED KINGDOM :— 12 Months, £1 3s. 10d.; 6 Months, 11s. 11d.; 3 Months, 6s.; Post-free.

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G. C., Nov. 7. 1885.

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GREAT SALE of NURSERY STOCK,
Part of our Kingston Hill Ground having to be cleared by Christmas, we intend selling at the
KINGSTON HILL NURSERY,
During the month of
*NOVEMBER*,
All kinds of
DECIDUOUS AND EVERGREEN SHRUBS, FOREST TREES,
ROSES AND FRUIT TREES,
AT GREATLY REDUCED PRICES
The Trade and Private Buyers will find this an excellent opportunity for Stocking.
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*NURSERIES, KINGSTON-ON-THAMES.*

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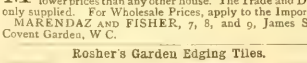
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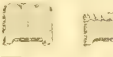
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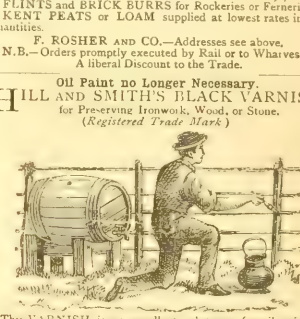
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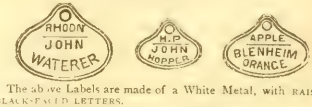


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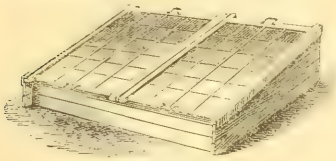
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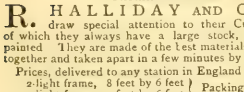
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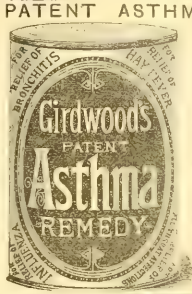
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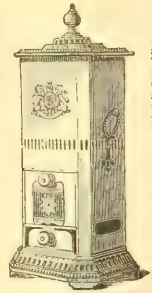
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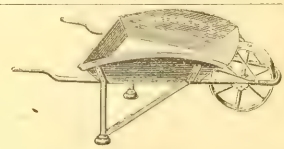


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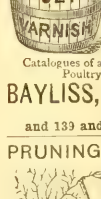
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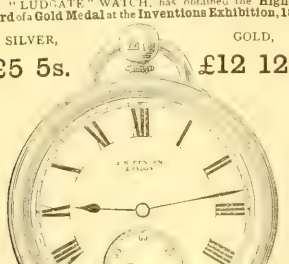
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Mr. J. KEASLEY, 69, Saltoun Road, Brixton, S.W.
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JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

SOME LARGE PYRAMID PEACH and other TREES of the best sorts, in full bearing, for Sale. About to be removed from a Gentleman's Orchard-house.
N. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**Standard Trained and Dwarf Trained**

PEACHES, NECTARINES, and APRICOTS, also FRUIT TREES of all descriptions, in large numbers. CATALOGUE free on application.
CHARLES TURNER, The Royal Nurseries, Slough.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above and all other leading varieties at greatly reduced prices.
T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

CAULIFLOWER PLANTS for SALE (Early London strain). For price, apply
CHAS. STEEL, Grower, New Farm, Ealing, W.

**Russia Mats, and Horticultural Sundries.**

JAS. T. ANDERSON'S Annual Catalogue is now ready, and will be forwarded post-free, on application.—149 Commercial Street, Shoreditch, London E.
Telegraphic Address—"JAIEA, LONDON."

## SALES BY AUCTION.

**Dutch Flower Roots.**

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland lotted to suit all buyers. Sales commence at half-past 12 o'Clock and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

**Wednesday Next.**—(Sale No. 7019.)

1000 First-class Standard, Dwarf, and Climbing ROSES, FRUIT TREES, of sorts. CONIFERS, SHRUBS, BORDER PLANTS, BULBS in variety, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 18, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Thursday Next**—(Sale No. 7020.)

CYPRIPEDIUM INSIGNE WALLACEI.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 19, a fine plant of the new CYPRIPEDIUM INSIGNE WALLACEI in flower, which obtained a First-class Certificate at South Kensington on November 10.

On view morning of Sale, and Catalogues had.

**Thursday Next**—(Sale No. 7022.)

SPECIAL SALE OF ORCHIDS IN FLOWER.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, November 19, at half-past 12 o'Clock precisely, a fine collection of ORCHIDS IN FLOWER, comprising splendid varieties of Odontoglossum Alexandræ, O. Pescatorei, a grand specimen of Cypripedium Sedeni, C. punctatum violaceum, C. insigne Wallacei (new), C. spicerianum, Oncidium Jonesianum, Cattleya maxima, Vanda Amelias Roxall, Phalænopsis Schilleriana, Lælia autumnalis atrorubens, Calanthes, Dendrobes, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7020.)

CYPRIPEDIUM SEDENI—grand Specimen.

MR. J. C. STEVENS will include in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 19 the finest specimen in the country of CYPRIPEDIUM SEDENI in pot 2 feet across, with thirty-two spikes (some branched), in splendid health.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7021.)

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Messrs. Shuttleworth, Carder & Co., on THURSDAY NEXT, November 19, about 200 fine good ESTABLISHED ORCHIDS, including fine plants of many well-known species.

On view morning of Sale, and Catalogues had.

**Saturday Next.**—(Sale No. 7022.)

PLANTS FROM GHENT.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY NEXT, November 21, a consignment of PALMS, AZALEAS, SPIRÆAS, CAMELLIAS, and other PLANTS from Ghent.

On view morning of Sale, and Catalogues had.

**Dutch Bulbs.—Every Monday, Thursday, & Saturday.**

GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., EVERY MONDAY, THURSDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, 800 Lots, comprising thousands of Double and Single HYACINTHS, TULIPS, NARCISSUS, CROCUS, and other BULBS from Holland, in excellent quality, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

**City Auction Rooms, 38 & 39, Gracechurch St., E.C.**

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the above Rooms, on TUESDAY November 17, at 12 o'Clock precisely, a First-class COLLECTION of DUTCH BULBS, 400 handsome Standard and other ROSES, Selected FRUIT TREES, Hardy CONIFERÆ SHRUBS, AMERICAN PLANTS, &c.

May be viewed the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

**Catford, S.E.**

CLEARANCE SALE of PLANTS, UTENSILS, Eight valuable Alderney COWS, BULL, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by F. Sewell, Esq. (who is leaving the neighbourhood), to SELL by AUCTION, on the Premises, Flower House, Southend, Catford, about a mile from Lower Sydenham Station, on THURSDAY, November 19, at 12 o'Clock precisely, the whole of the choice collection of STOVE and GREENHOUSE PLANTS, handsome Palms, Tree, Filmy and other Exotic Ferns, fine Crotons and Dracænas, Camellias, Azaleas, Stephanotis, a few Orchids, nearly new span-roof GREENHOUSE, 50 feet long, Model BARLEY HOUSE with PIPING, several FRAMES, 2 LAWN MOWERS, 80 Iron HURDLES, FENCING and GATES, Oil-cake CRUSHER, PLOUGH, iron Field ROLLER, nearly new Stack CLOTH, Park PHAETON by Hooper, Tumbril CART, Eight pure-bred Alderney COWS, and a valuable Pedigree Alderney BULL, from Fowler, Southampton; and numerous other items.

On view the day prior to Sale. Catalogues may be had on the Premises (of the HEAD GARDENER), or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

**King's Acre Nurseries, Hereford.**

MESSRS. PROTHEROE AND MORRIS are instructed by The Cranston Nursery and Seed Company (Limited) (in consequence of the Land being required to extend the cultivation of Roses, a specialty of their establishment), to SELL by AUCTION, at their extensive Nurseries, King's Acre, near Hereford, on TUESDAY and WEDNESDAY, December 1 and 2, several Acres of first-class NURSERY STOCK, all in splendid condition for removal.

Further particulars will appear.

**Friday Next.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 20, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA AMETHYSTOGLOSSA, in fine condition; also ODONTOGLOSSUM HYSTRIX, a fine specimen of PHAIUS TUBERCULOSUS, probably the finest in existence, and several other rare ORCHIDS; also some fine importations of CATTLEYA DOWIANA, C. MOSSIÆ, C. ACLANDIÆ, C. SPECIOSISSIMA, &c.

On view morning of Sale, and Catalogues had.

**Flowering Orchids—Special Sale.**

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of the above will take place on TUESDAY, November 24, for which they will be glad to RECEIVE ENTRIES as soon as possible.

**Hinton St. George, Somerset**

About 3 miles from Crewkerne. EXPIRATION of LEASE of BRANCH NURSERY.

MESSRS. MAYNARD are instructed by Mr. B. R. Davis, of Yeovil, to SELL by AUCTION, on the Premises, as above, on MONDAY, November 23, at 12 o'Clock precisely, the whole of the WELL-GROWN NURSERY STOCK, including upwards of 100,000 Larch, 30,000 Privet ovalifolium, 40,000 Thorns, 15,000 Currants, several thousands of Gooseberries, &c.

Catalogues ready, of the Auctioneers, Taunton; or of Mr. B. R. DAVIS, Yeovil Nurseries.

WANTED, Ornamental GREENHOUSE, about 30 × 15 feet, with or without Hot-water apparatus. Sketch and particulars.
Address, W. G. S., 1 Seymour Street, Bath.

**West of England**

OLD ESTABLISHED SEED BUSINESS for DISPOSAL.—Central situation in an important city, with extensive connection in several counties, principally Flower and Agricultural. Excellent opening.
Full particulars and terms of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FOR DISPOSAL, a FLORIST'S and JOBBING BUSINESS, 6 miles West of London.—Good Cottage, Stabling for eight Greenhouses, three Frames, Half an Acre of Land. Present hands fourteen years; giving up through illness.
Apply, J. L., 42, The Grove, Ealing, Middlesex.

NURSERY for SALE, at South Streatham, by order of Executors. Lease, Stock, and Horse and Cart. A low price will be taken.
Apply at the Nursery, adjoining Norbury Railway Station.

FOR SALE, at a Valuation, a small NURSERY of 1 Acre, well stocked, three large Span Houses, Cutting-house and Frames. Plenty of Jobbing Work to be done. Stock can be reduced. Rent, £30
B., 121, Blackstock Road, Finsbury Park, London, N.

NURSERY, 8 miles from London, Lease nineteen years, Rent £20 for the lot, about 1 Acre of GROUND, nice double-fronted COTTAGE, recently built.

Price for Lease, and three splendidly-built GLASS HOUSES, one 120 feet long, one 110 feet, and one 100 feet, with six rows of PIPE, all nearly new, and well heated, only £500, part of which can remain at 5 per cent.
Apply, C. H. COWLES Woodford, Essex.

**Thornton Heath**

In a prominent position, good locality, capital opening for a beginner.

WELL ESTABLISHED NURSERY, acre of Ground, five Greenhouses. Lease forty-two years. Rent only £12. No stock.
Terms and particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

**Important Notice to Florists, Nurserymen, and others.**

TO BE SOLD, or LET on Lease, a very valuable enclosure of LAND, containing about 5 Acres well adapted for the above purposes, being a Poultry Farms, Public Institution, or Building Purposes; it has a frontage to a High road, rich gravel sub-soil, only a short distance from Uampton and Fulwell Stations, S.W. Railway, and in order to effect an immediate sale will be sold a bargain. Apply to
Mr. J. EMBLETON, Suffolk House, New Hampton.

TO LET, a NURSERY, consisting of nine well built Houses, and two ranges of Pits, all Heated, containing over 1300 feet (running) of Glass, good House and Outbuildings, and about 4 Acres of Land if required. The above is situated near a large town in the Midlands, and two hours from London.
For particulars address NURSERY, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a Nobleman's fine Walled KITCHEN GARDEN, of 2 to 3 Acres, with four Vineries, Stove-house, &c., and Gardener's Residence. Close to Station and County Town. About an hour from London, Brighton, and Portsmouth.
Address, OWNER, Steel & Jones, Advertising Agents, Spring Gardens, S.W.

WILLIAM CLAPHAM,
*Garden Architect and Natural Rock Builder,*
SHAW HEATH, STOCKPORT.
Ferneries, Grottoes, and Rockwork, in common with Landscape Gardening, to suit any locality.
ALL PERSONALLY CARRIED OUT.
Silver Medal awarded Preston Guild, 1882.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared.
115, Listria Park, Stamford Hill, N.

NARCISSUS POETICUS BULBS, 12s. per bushel (8 bushels to offer). Splendid stuff. Cash.
G. PHIPPEN, Reading.

**Beccles Burial Board.**

TO LANDSCAPE GARDENERS.

THE BURIAL BOARD for the Parish of Beccles, in Suffolk, invite PLANS and ESTIMATES of the COST of LAYING-OUT, FENCING, and PLANTING 5a. 2r. 20p. of LAND, adjoining the present Parish Cemetery, and intended to be added thereto. The Plan must be on a scale not less than the largest scale of the Ordnance Survey, and must be sent, together with the Estimate, to the Clerk of the Board, at his Office at Beccles, not later than December 25 next.

The Board will pay for the Plan which in their opinion is the best, and is proper and suitable to be adopted, the sum of £10 10s., and for the next best Plan the sum of £5 5s., both Plans being the property of the Board.

The new ground is to be divided, as nearly as practicable, into two equal portions—of which one is intended to be consecrated according to the rites of the Church of England, and the division between the consecrated and unconsecrated portions is to run from north to south. Further information may be obtained on application to the Clerk of the Board.

By order,
F. S. RIX, Clerk.

Beccles, October 29, 1885.

PONSFORD AND SON offer at very low prices:—
LAURELS—in four vars.
EUONYMUS.
FLOWERING SHRUBS.
FRUIT TREES—Maidens to Bearing Trees.
MULBERRIES.
CONIFERÆ—many kinds.
Brixton, Surrey, and Bromley, Kent,
Telegraphic Address:—"MULBERRIES, LONDON."

FLOWER ROOTS for FORCING.—Large selected imported clumps of LILY of the VALLEY, SPIRÆA (Hoteia) JAPONICA, DIELYTRA SPECTABILIS, &c., for delivery now.
Priced CATALOGUE of Dutch Flower Roots free on application.
F. & A. DICKSON & SONS, The Queen's Seedsmen, Chester.

FRANCIS R. KINGHORN begs to offer, in splendid stuff and at low prices, the following:—PLANES, 11 to 12 feet, straight stems and good heads; Caucasian and Round-leaf LAURELS, 3 to 4 feet, bushy; Oval-leaf PRIVET, 4 to 5 feet, bushy; Irish IVY, in pots, 5 to 6 feet, many shoots; SWEET BRIER, in pots, 3 to 4 feet; Double GORSE, in pots, 2 feet, bushy; BERIS DARWINII, in pots, 2 to 3 feet, bushy; LILACS, 5 to 6 feet: RIBES, 4 feet.
Sheen Nurseries, Richmond Surrey.

DOUBLE TUBEROSES, extra fine, 2s. per dozen; LILIUM AURATUM, splendid Roots, 4s. and 6s. per dozen; LILY of VALLEY, German Crowns, 5s. 6d. per 100. SPIRÆA JAPONICA, 3s. per dozen; AZALEAS and CAMELLIAS, from 18s. per dozen. Large quantities at cheaper rates. Trade price on application.
MORLE AND CO., 1 and 2, Fenchurch Street, E.C., and Child's Hill Nursery, Finchley Road, N.W.

NEW APPLES.
TYLER'S KERNEL.—First-class Certificate at the Apple Congress, Chiswick, 1883. Large, conical, greenish-yellow, flushed with deep red, firm, acid, mid-season, first quality: one of the most handsome Apples yet introduced. Dwarf Maiden trees, 5s. each; a few 2-year-old, 7s. 6d. each.
HEREFORDSHIRE BEEFING.—A valuable late keeping Apple, very handsome; colour, deep red all over; flesh, white, very firm, crisp and juicy; will keep good until June; excellent for dessert or culinary purposes. Dwarf Maiden trees, 2s. 6d. each; dwarf 2-year-old trees, 3s. 6d. each; a few Standards, 5s. each. Usual allowance to the Trade.
CRANSTON'S NURSERY AND SEED CO. (Limited), King's Acre, Hereford.

CHRYSANTHEMUMS.—Five hundred varieties, including the best of the Exhibition, Decorative, Early Flowering, and Single Varieties. Strong Cuttings now ready, buyer's selection, 1s. 6d. per dozen, 10s. per 100; Plants, 2s. 6d. per dozen, 18s. per 100; Single Plants, 1s. per dozen. Many of the best growers in the country are supplied from this collection. For the grand new sorts, see CATALOGUE, one stamp.
WM. ETHERINGTON, Manor House, Swanscombe, Kent.

**Bermuda Easter Lily.**

LILIUM HARRISII.—This Lily, coming direct from Bermuda, must not be confounded with the variety generally sent from America under the above name, to which it is much superior, and different in bulb, growth, and flower.
MR. WILLIAM PULL has just received his usual large importation direct from Bermuda, and can supply 500 bulbs at 2s. 6d. and 3s. 6d. each; gigantic bulbs, 5s. and 7s. 6d. each; a few monster bulbs, 1 foot in circumference, 10s. 6d. each.
LILIUM AURATUM.—Mr. WILLIAM PULL is now booking orders for good, plump, sound bulbs at 7s., 9s., 12s., 18s., and 24s. per dozen. All other good Lilies at equally low prices.
Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

PURPLE CATALPA.
Now offered for the first time.
RAISER'S DESCRIPTION.—The purple-leaved Catalpa is constant in this:—The tree grows constantly from early Spring to late frosts. There are four pairs of the young leaves (terminal) are always an intensely metallic purple. The older leaves are from black-purple to deep green. The original tree is about 18 feet high; every branch has a terminal crown of dark purple leaves all the time from April to October. The mature leaves are 6 inches in diameter. Rather wavy. Small Plants, 1 to 2 feet high, 10s. 6d.; larger, 2 to 3 feet, £1 1s.
H. WATERER, Importer and Exporter of Plants and Bulbs, 56 N., 38th Street, Philadelphia, U.S.A.

POUNCE'S CLEARANCE SALE.
BOUVARDIA, Alfred Neuner, &c., 16s. per 100, good, in 48's.
EUCHARIS AMAZONICA, flowering bulbs, 5s. per dozen; smaller 2s. 6d. per dozen.
FERNS, mixed stores, in 48's, 10s. per dozen.
CHRYSANTHEMUM, stools of best sorts, 4s. per dozen.
CARNATIONS, Claire de Nancy, in 60's, 24s. per 100.
" layers well rooted, from beds, 16s. per 100.
PELARGONIUM stools, best blooming sorts, 3s. per dozen.
MARGUERITES, large bushes in pots, 4s. 6d. per dozen.
AZALEA MOLLIS and hardy Ghent, 10s. per bed of sixty to 100.
The above being in excess of those lotted for Auction Sale, are offered as above to effect a quick clearance. Packed free.
POUNCE'S Nursery, Hendon, N.W.

TWICKENHAM HORTICULTURAL and COTTAGE GARDEN SOCIETY.
The AUTUMN EXHIBITION of CHRYSANTHEMUMS, &c., will be held in the Town Hall, Twickenham, on TUESDAY and WEDNESDAY, November 17 and 18. Schedules and all particulars of Mr. A. ALLFREY, Hon. Sec.
Cedar Villa, St. Margaret's, Twickenham.

BURTON-ON-TRENT CHRYSANTHEMUM SHOW, WEDNESDAY and THURSDAY, November 18 and 19. Schedules of Prizes and every information from R. B. BARRATT, Secretary.
Abbey Cottage, Horninglow Street.

BRISTOL CHRYSANTHEMUM and FRUIT SHOW will be held NOVEMBER 18 and 19. Entries Close November 14. A. POLKINHORN, Sec.
Bishopston, Bristol.

COLCHESTER and EAST ESSEX HORTICULTURAL SOCIETY.
The CHRYSANTHEMUM SHOW will be held on THURSDAY and FRIDAY, November 19 and 20, in the New Corn Exchange, Colchester. Particulars of
5, Head Street, Colchester. J. C. QUILTER, Sec.

LIVERPOOL HORTICULTURAL ASSOCIATION.
The SIXTH GRAND EXHIBITION of CHRYSANTHEMUMS, FRUIT, &c., will be held in St. George's Hall, Liverpool, on TUESDAY and WEDNESDAY, November 24 and 25. TWO HUNDRED POUNDS in PRIZES. A TEN GUINEA SILVER VASE, given by J. Williams & Co., Manure Manufacturers, 62, Mount Pleasant, Liverpool, for Thirty-six Blooms of Chrysanthemums. Entries Close Tuesday, November 17. For Schedules apply to
Huyton, Liverpool. EDWARD BRIDGE, Secretary.

PRIMULAS—PRIMULAS.
NOW IS THE BEST TIME TO PLANT.

| | Each | Doz. | 100 | 1000 |
|---|---|---|---|---|
| | s. d. | s. d. | s. d. | s. |
| PRIMULA cashmiriana .. .. .. | 0 6 | 5 0 | .. .. | .. |
| ,, denticulata .. .. .. .. | 0 6 | 5 0 | .. .. | .. |
| ,, floribunda .. .. .. .. | 0 6 | 5 0 | .. .. | .. |
| ,, involucrata (Munroii) .. .. | 0 6 | 5 0 | 35 0 | .. |
| ,, minima .. .. .. .. | 0 9 | 8 0 | .. .. | .. |
| ,, ,, bohemica .. .. .. .. | 1 6 | 15 0 | .. .. | .. |
| ,, pulcherrima .. .. .. .. | 0 4 | 3 0 | .. .. | .. |
| ,, rosea .. .. .. .. .. | 0 6 | 4 0 | 30 0 | .. |
| ,, Sieboldii, 25 varieties .. .. | 0 6 | 4 0 | 30 0 | .. |
| ,, viscosa major .. .. .. .. | 0 6 | 5 0 | .. .. | .. |
| ,, Wulfeniana .. .. .. .. | 1 0 | 10 0 | .. .. | .. |
| ,, acaulis, Double Blush (Primrose) .. | 0 9 | 7 6 | .. .. | .. |
| ,, ,, ,, Crimson-purple, ditto .. | 0 6 | 4 0 | .. .. | .. |
| ,, ,, ,, Early Yellow, ditto .. .. | 0 3 | 2 6 | 14 0 | 120 |
| ,, ,, ,, Lilac, ditto .. .. .. | 0 3 | 2 6 | 16 0 | .. |
| ,, ,, ,, White, ditto .. .. .. | 0 3 | 2 6 | 16 0 | .. |
| ,, ,, Single, ditto, ditto .. .. | 0 3 | 2 6 | 16 0 | .. |
| ,, elatior plena, Old Double Tortoise-shell Polyanthus .. .. | 1 0 | 10 0 | .. .. | .. |
| ,, ,, coccinea duplex, ditto .. .. | 0 5 | 4 0 | .. .. | .. |
| ,, ,, alba duplex, ditto .. .. .. | 0 6 | 5 0 | .. .. | .. |
| ,, ,, lutea duplex, ditto .. .. .. | 0 4 | 3 0 | .. .. | .. |
| ,, ,, Newry Giant strain, finest mixed, ditto .. .. .. | 0 6 | 5 0 | .. .. | .. |
| ,, ,, ,, ,, Whites, ditto, ditto .. | 1 6 | 15 0 | .. .. | .. |
| ,, ,, ,, ,, Yellows, ditto, ditto .. | 0 6 | 5 0 | .. .. | .. |
| ,, ,, ,, ,, A. Balfe (new), ditto .. | 2 0 | .. .. | .. .. | .. |
| ,, ,, ,, ,, Bedding Beauty (new), do. | 1 6 | .. .. | .. .. | .. |
| ,, ,, ,, ,, Golconda (new), ditto .. | 2 6 | .. .. | .. .. | .. |
| ,, ,, ,, ,, King Bill (new), ditto .. | 2 6 | .. .. | .. .. | .. |
| ,, ,, ,, ,, The Queen (new), ditto .. | 3 6 | .. .. | .. .. | .. |
| ,, ,, veris coccinea .. .. .. | 0 6 | 4 0 | .. .. | .. |

For Descriptions see CATALOGUE, free on application to RODGER, MCLELLAND AND CO., Newry.

AFRICAN TUBEROSES.
GROWN BY
WM. RISLEY, MARITZBURG, NATAL
(the Original Grower).
There are a few Cases of these magnificent Bulbs still unsold, quite equal in every respect to any yet delivered. Some of them weigh ¼ lb., and measure 2½ inches in diameter.
Intending buyers are advised to make an early application to the undersigned. Quotations very low. Terms nett cash.
WM. G. MAC GREGOR, 17, Fenchurch Street, E.C.

LANCASHIRE LAD GOOSEBERRIES.
Bushes three years old for Sale.—Apply to W. MANN MAGDEN, Isleworth, Middlesex.

SEAKALE for Forcing. None better in the Trade. Price on application. Samples forwarded if required.
ALFRED ATWOOD, Market Gardener, 51, Shillington Street, Battersea, S.E.

MANETTI STOCKS, hard and well-rooted, fine for Grafting, 20s. per 1000. Package free for cash with order.
KIRK ALLEN, The Nursery, Fen Drayton, St. Ive's, Hunts.

BOX EDGING.—Large quantity for Sale. Samples and price on application.
WILLIAM M. BEALE, Nurseryman, &c., Post Office Buildings, Neath.

Fruit Trees, Grape Vines, Roses.
HUGH LOW & CO.
OFFER OF FINE QUALITY AND BEST VARIETIES—
Dwarf Maiden APPLES, CHERRIES, PEARS, PLUMS, 9s. per dozen; Dwarf-trained APPLES, CHERRIES, PEARS, PLUMS, 30s. to 42s. per dozen; Dwarf Maiden APRICOTS, NECTARINES, PEACHES, 12s. per dozen; Dwarf-trained APRICOTS, NECTARINES, PEACHES, 3s. 6d. to 5s. each; Standard Maiden NECTARINES and PEACHES 3s. 6d. each; Standard CHERRIES, 21s. per dozen; CHERRIES, 2-years, with side shoots, 12s. per dozen; DAMSON FARLEIGH PROLIFIC, Dwarf Maiden, 12s. per dozen: 2-years, with side shoots, 18s. per dozen; PEARS, Pyramid on Quince, 12s., 18s. per dozen; PEARS, 2 years, and Pear Stocks, with side shoots, 12s. per dozen; PLUMS, 2-years, with side shoots, 12s. per dozen; ROSES, a fine collection. Dwarfs on Manetti, 9s. per dozen, 5 s. per 100; ROSES, half-Standards and Standards, 12s., 18s. per dozen; ROSE GLOIRE DE DIJON, open ground, 9s., 12s. per dozen: very strong, in pots, 1s. 6d. 2s 6d., 3s. 6d., 5s. each; VINES, BLACK ALICANTE, BLACK HAMBURGH, GROS COLMAR, and other fine sorts, Planting Canes, 3s 6d. to 5s. each; Forcing Canes, 7s. 6d. to 10s. 6d.
Clapton Nursery, London, E.

CHOICE RHODODENDRONS AND AZALEAS.
ISAAC DAVIES & SON
have to offer the following Plants of their own raising:—
RHODODENDRON DAVIESII, orange-scarlet flowere, handsome Camellia-like foliage, bushy habit. First-class Certificates, London and Manchester.
,, Sweet-scented* viz., Countess of Derby, Countess of Sefton, Lady Skelmersdale, Duchess of Sutherland. Large white flowers, deliciously scented, one plant scenting a whole greenhouse.
,, FLORIBUNDUM, white flowers, dwarf bushy habit, wonderfully free-blooming. First-class Certificate at Manchester.
,, Pixy Queen, white flowers, very free-blooming, leaves and flowers the size of an Indian Azalea, early flowering, and almost hardy.
,, Rosy Bell, rosy-pink flowers, free-blooming, bushy habit, hardy.
,, PRÆCOX, in three varieties, very early, free-blooming, extremely hardy Evergreen Shrub of dwarf habit.
AZALEA DAVIESII, excellent for forcing, sweet-scented white flowers in trusses. First-class Certificate at Liverpool.
,, AVALANCH, similar to A. Daviesii, but flowers rather less in size, pure white, sweet-scented. Certificated at Manchester, 1885.
Descriptive PRICED LIST of the above, and also of General Nursery Stock (which is in fine condition this season, and offered at very moderate prices), forwarded on application.
ORMSKIRK, LANCASHIRE.

The Grand New Narcissus,
"SIR WATKIN."
2s. each, 21s. per dozen, 160s. per 100.
The largest and finest known. First-class Certificate Royal Horticultural Society.
Descriptive CATALOGUE post-free. Plant at once.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.
*THE COMMITTEE beg to GIVE NOTICE that they have secured permanent Offices at*
**No. 50, PARLIAMENT STREET, WESTMINSTER, S.W.,**
*and it is respectfully requested that on and after the 14th inst. all communications may be addressed there.—By Order,*
EDWD. R. CUTLER, Sec.
*November 3, 1885.*

Special Offer of
TWO HUNDRED THOUSAND DWARF ROSES, on Manetti, the best plants money can buy, 25s. per 100, 50 for 13s., 12 for 4s. ASPARAGUS, 2-yr., 2s. per 100; 3-yr., 3s. per 100; 4-yr., 4s. per 100. MANETTI STOCKS, fine, 4s. per 100, 25s. per 1000. Cash with orders. Packing free.
R. LOCKE, Rosebank, Fairseat, Wrotham, Kent.

LAXTON'S NEW FRUITS and VEGETABLES.—Eight First-class Certificates in 1885. Send for particulars of New Peas, Beans, Potatos, Tomatos, Apples, Strawberries, and other good Novelties to
THOMAS LAXTON, Seed and Novelty Grower, Bedford.

CHRISTMAS ROSES.
CHRISTMAS ROSES.
HELLEBORUS NIGER ANGUSTIFOLIUS, "Brockhurst" variety, pure white, very free, good grower, grand for Forcing and the best of all the Christmas Roses. Strong clumps, 1s. 6d., 2s., and 2s. 6d. each; 18s., 24s., and 30s. per dozen.
WM. LIBRAN AND SON, Oldfield Nurseries, Altrincham; 12, Market Street, Manchester.

Vines—Vines—Vines.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s 6d. each; Fruiting Canes, 10s. 6d. each.
The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL"

SPECIAL OFFER
OF WELL-GROWN STOCK.
6,000 FRUIT TREES, mostly Pyramids and Standards, consisting of best sorts, APPLES, PEARS, PLUMS, and CHERRIES.
1 500 GOOSEBERRIES, mostly Warrington; also some Red and Black CURRANTS.
60,000 ASPARAGUS and SEAKALE; the forcing Seakale is fine.
10,000 LAURELS, including rotundifiora and caucasicum.
20,000 IVIES, mostly small leaved.
5 000 TREE BOX.
5,000 POPLARS, LIMES, THORNS, CHESTNUTS.
*And for Special Quotations, &c., apply to*
HARRISON & SONS,
NURSERYMEN and SEED GROWERS,
LEICESTER.

ROSES.
20 Acres of grand plants in best varieties.
BUSHES, H.P., 8s. per dozen, 60s. per 100. } *Packing and Carriage FREE* for Cash with Order.
STANDARDS, H.P., 15s. per dozen, 105s. per 100.
CLEMATIS (80,000), 12s to 24s. per dozen.
ROSES, in Pots (80,000), 15s. to 36s. per dozen.
FRUIT TREES (74 Acres).
VINES (600). 3s 6d. to 10s. 6d.
ORCHARD HOUSE TREES, "Fruiting," in Pots.
STRAWBERRIES, 4s. per 100; Forcing, 15s. to 25s. per 100.
ASPARAGUS, 2s. 6d. per 100; Forcing, 12s. 6d. per 100.
SEAKALE, strong Forcing, 16s. per 100.
EVERGREENS, CONIFERS, ORNAMENTAL TREES (60 Acres).
FLOWERING SHRUBS, 8s. per dozen.
FOREST TREES, HEDGE PLANTS, UNDERWOOD, &c.

BULBS
Of Finest Quality.
*Descriptive LISTS of above and SEEDS free.*
RICHARD SMITH & CO.,
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PAUL & SONS, THE OLD NURSERIES, CHESHUNT, N.,
*Solicit Orders for the Present Planting Season for*
ROSES,
FRUIT TREES,
EVERGREENS and CHOICE CONIFERÆ,
HOLLIES, VARIEGATED and GREEN,
RHODODENDRONS and AMERICAN PLANTS,
ALPINE and HERBACEOUS PLANTS.
CATALOGUES FREE.
Nurseries:—
CHESHUNT.
HIGH BEECH.
PROXBOURNE.
ALL SPECIALTIES OF THESE CELEBRATED NURSERIES.

SPECIAL CHEAP OFFER. — PINES, Austrian, from 2 to 6 feet; LARCH, from 2 to 4 feet; FIR, Scotch, 12 to 24 inches; ELM, 3 to 4 feet, 4 to 5 feet; ASH, Common, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; BIRCH, 3 ft. to 2 feet, 2 to 3 feet, 3 to 5 feet, 5 to 10 feet; CHESTNUT, 2 to 3 feet, 3 to 4 feet; HORNBEAM, 2 to 3 feet, 3 to 4 feet, 7 to 8 feet, 8 to 10 feet; MAPLE, 4 to 10 feet; OAK, English, from 1 to 10 feet; POPLARS, Lombardy, 7 to 8 feet, 8 to 10 feet, 10 to 12 feet; POPLARS, American, 7 to 8 feet, 10 to 12 feet; PRIVET, Evergreen, 2 to 3 feet, 3 to 4 feet, good; PRIVET, Oval-leaf, 2 to 3 feet, 3 to 4 feet; QUICK, THORN, 4, 5, and 6-yr., fine; SYCAMORES, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 8 to 9 feet; AUCUBAS, 2 to 3 feet; HERBERIS AQUIFOLIA, BOX, CUPRESSUS, various; ELDERS, Gold; CURRANTS, flowering; HOLLIES, in great variety; IVIES, in sorts; JUNIPERS; LABURNUMS, LAURELS, assorted; RHODODENDRONS, several hundred thousand of all sorts and sizes—beautiful stuff; RETINOSPORAS, YEWS, Common and Irish. For Price LIST, &c., apply to

ISAAC MATTHEWS AND SON, The Nurseries, Melton, Stoke-on-Trent.

**100 Herbaceous and Alpine Plants for 25s.**

RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rock-work, which produce flowers and render the garden attractive all through the year. New LIST of sixty-four pages free.

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**To Nurserymen, Seedsmen, and Florists.**

DUTCH BULBS—Season 1885.

WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract:—

From the *Gardeners' Chronicle and Agricultural Gazette*, London:—"MONSTER BROCCOLI.—A few days since, Mr. C. Kessell, of The Coombe, Penzance, who has been a Broccoli grower for upwards of half a century, and was one of the first to get the Early Broccoli of Cornwall into the London and Northern Markets, cut two monster Broccoli, which together weighed 50 lb. They were the sort known as Pontey's Late White Wivove. The huge cabbage-looking mass had to be called into requisition to ascertain the weight of the plants."

Retail price, *2s. 6d.* per ounce. Special quotations to the Trade. Apply to

E. WILSON SERPELL, 31, Cornwall Street, Plymouth.

**Royal Nurseries, Ascot.**

MESSRS. JOHN STANDISH AND CO. beg to announce to their Friends and the Public that they have an unusual quantity of well-grown NURSERY STOCK, consisting of a choice collection of CONIFERS, RHODODENDRONS, Standard and Bush ROSES, Evergreen and Deciduous SHRUBS of every description, FRUIT TREES of all kinds, IVIES, CLEMATIS, and all other varieties of CLIMBING PLANTS. Also fine stocks of GARDENIAS, AZALEAS, CAMELLIAS, Winter Flowering HEATHS, BOUVARDIAS, Maidenhair FERNS, PALMS, and every beautiful Plant that can be named, which they are prepared to offer upon most favourable terms for Cash. Special quotations on application.

PALMS.—A few hundreds of splendidly-grown healthy Seaforthia elegans, Latania borbonica, Corypha australis, Phœnix reclinata, Areca lutescens, and Euterpe edulis, 12 inches high, *4s.* per dozen, *25s.* per 100; same sorts, 20 inches high, *12s.* per dozen, less quantity, *2s. 3d.* each.

FERNS.—Strong, healthy, and handsome Lomaria Gibba, Adiantum cuneatum (Maidenhair), Pteris tremula, Pteris serrulata, Pteris serrulata cristata, Pteris cretica alba lineata, Pteris argyrea, out of small pots, *2s.* per 100, *3s.* per dozen.

GARDENIA INTERMEDIA (true), *6s.* per dozen.

Packages and parcels post-free.

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JOHN PERKINS AND SON offer the following in large quantity, at very low prices. All goods well-transplanted stuff:—

ASH, Common, 2 to 3, and 3 to 4 feet.
PINE, Austrian, 1½ to 2, and 2 to 2½ feet.
BIRCH, 1½ to 2, and 2 to 3 feet.
LARCH FIRS, 2 to 3, and 3 to 4 feet.
OAKS, English, 2 to 3, and 3 to 4 feet.
SPRUCE FIRS, 1½ to 2, and 2 to 3 feet.
SYCAMORE, 2 to 3, and 3 to 4 feet.
HAZEL, 2 to 3, and 3 to 4 feet.
PRUNUS MYROBOLANA, 1½ to 2, and 2 to 3 feet.
BLACKTHORN, 1 to 2 feet.
HOLLY, Green, 1½ to 2, and 2 to 3 feet.
HORNBEAM, 2 to 3, and 3 to 4 feet
LAURELS, Common, 1½ to 2, 2 to 3, and 3 to 4 feet.
PRIVET, Evergreen, 2 to 3, and 3 to 4 feet.
YEW, English, 1½ to 2, 2 to 3, and 3 to 4 feet.
THORN QUICK, 6-yr. transplanted.

Special offers on application.

Billing Road Nurseries, Northampton.

E. WILSON SERPELL, NURSERYMAN, &c., Plymouth, begs to offer the following Shrubs, &c., all well-rooted stuff; early orders solicited:—

CRYPTOMERIA ELEGANS, handsome stuff, 3 to 4 feet, 18*s.* per dozen.
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YEWS, Irish, well furnished, 3 to 4 feet, 18*s.* per dozen.
PINUS INSIGNIS, 2 to 3 feet, 18*s.* per dozen.
MYRTLES, large and small leaved, in pots, well established, 9*s.* per dozen.

**Autumn Planting.**

THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.

The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

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*SEE NEW CATALOGUE.*

APPLES, PEARS, PLUMS, CHERRIES.—All the finest varieties.—Pyramids, *9s.* and *12s.* per dozen; Standards, *12s.* per dozen; Dwarf-trained, *15s.* and *18s.* per dozen.

CURRANTS.—Black, Red, White, *12s.* per 100, *2s.* and *2s. 6d.* per dozen.

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GOOSEBERRIES, *15s.* and *20s.* per 100, *2s. 6d.* and *3s.* per dozen.

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The finest H.P. varieties, *6s* per dozen, *40s.* per 100.
Tea scented and Noisettes, *15s.* per dozen; *100s.* per 100.
Beautiful Mosses, *6s.* per dozen.
Climbing varieties, for Rockeries, Arbours, &c., *6s.* p doz.
The above are all our own growing, and will grow and flower much better than Roses grown in a good climate and rich soil.

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*ORNAMENTAL and DECIDUOUS SHRUBS,*

**RHODODENDRONS and AMERICAN PLANTS**

Fine quality, low prices. See New Catalogue.

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DAISIES, Red, White, Rose, &c.; POLYANTHUS, Single PRIMROSES, in variety of colours; WALLFLOWERS, CANTERBURY BELLS, *9d.* per dozen, *4s.* and *5s.* per 100; PANSIES and VIOLAS (colours separate), ARABIS, ALYSSUM, SILENE COMPACTA, AUBRIETIAS, MYOSOTIS, *1s. 6d.* per dozen, *8s.* per 100; or, 50 assorted Spring-flowering Plants for *1s. 6d.*, 100 for *2s. 6d.*

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**BEAUTIFUL FLOWERS for GARDENS.**

POTENTILLAS, PYRETHRUMS, DELPHINIUMS.—Lovely hardy flowers for cutting or garden bloom, named, *5s.* per dozen.

SPLENDID PHLOXES, PENTSTEMONS, PINKS, PANSIES, in the finest varieties, *3s. 6d.* per dozen.

HARDY HERBACEOUS PLANTS.—The most showy sorts, *3s* per dozen, *21s.* per 100.

CARNATIONS and PICOTEES.—Good exhibition sorts, *6s.* per dozen plants; fine Clove and Border Self varieties, *4s.* per dozen—all from layers.

LILIES.—Candidum, Orange, and Tiger Lilies, *3s.* per doz.

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CINERARIAS and HERBACEOUS CALCEOLARIAS, *1s. 6d.* per dozen, from stores, our own fine strains.

BOUVARDIAS, TREE CARNATIONS, DEUTZIA GRACILIS.—In pots for early blooming, *6s.*, *9s.*, and *12s.* per dozen.

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AZALEAS.—Ghent, mollis, pontica, or indica, all with buds, for forcing, *18s.*, *24s.*, and *30s.* per dozen.

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SEE our NEW CATALOGUE for this Autumn for Moderate Prices of all BULBS, PLANTS, or TREES you want for Inter Outdoor Gardening; also for CUT FLOWERS, WREATHS, CROSSES, BOUQUETS, &c. Safe and fresh by post or rail.

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Is now published, and will be forwarded on application.

ROSES, Hybrid Perpetual, extra fine, Dwarf, *7s. 6d.*, *9s.*, and *12s.* per dozen.
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ROSES, Best Dwarf H.P., *35s.* per 100; fifty for *20s.*

TEA ROSES, in 5-inch pots, all the leading varieties, including Niphetos, Maréchal Niel, and Grace Darling, *12s.* per dozen.

NEW ROSES of 1885, in 48-pots, *12s.* per dozen.

STANDARD ROSES, including Gloire de Dijon and Maréchal Niel, *12s.* per dozen.

APPLE TREES, Standards, *18s.* per doz.; Pyramids, *12s.* doz.
" " Bush, *6s.* per dozen; Dwarf-trained, *21s.* per dozen.
PEARS, Standards, *18s.* per dozen; Pyramids, 5 to 6 feet, *21s.* per dozen.
" Dwarf-trained, *24s.* per dozen.
PLUMS, Standards, *18s.* per dozen; Trained, *24s.* per dozen
GOOSEBERRIES, Warrington and best leading sorts, *2s. 6d.* per dozen, *18s.* per 100.
CURRANTS, Red and Black, *2s.* per dozen, *15s.* per 100.
CONIFERS, for Lawn Planting, all good varieties, *12s.* p. doz.
SHRUBS, Flowering, *4s.* per dozen.
BOX, Tree, *8s.* per dozen.
BAY, Sweet, *9s.* to *18s.* per dozen, 2 to 3 feet.
CHESTNUT, Scarlet, 5 to 10 feet, *8s.* to *24s.* per dozen.
IVIES, in sorts, Plain and Variegated, in pots, *9s.* per dozen.
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PYRUS MAULEI, fruit makes a delicious preserve, in pots, *9s.* per dozen.
PRIVET, for Hedge Planting, *15s.* to *25s.* per 1000.
ASH, Weeping, stems 8 to 10 feet, *3s. 6d.* each. } Standard trees.
LABURNUMS, good heads, *1s.* each.
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PLANES, best for Town Planting, 8 to 10 ft., *1s. 6d.* each.
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SYCAMORE, 8 to 10 feet, *6s.* per dozen.
THORNS, Standard, flowering, *15s.* per dozen.

*The best Evergreens for Sea-side Planting.*

PINE, Austrian, 12 to 18 inches, *6s.* per 100; 18 to 24 inches, *12s. 6d.* per 100; 24 to 30 inches, *20s.* per 100; 30 to 36 inches, *35s.* per 100; 3 to 4 feet, *50s.* per 100.
CUPRESSUS MACROCARPA, in pots, 4 to 5 ft., *18s.* per doz.
ESCALLONIA MACRANTHA, in pots, *6s.* per dozen.
EUONYMUS, best green, 12 to 18 inches, *4s.* per dozen; 18 to 24 inches, *5s.* per dozen.
AMPELOPSIS VEITCHII, best for covering wall, *6s.* to *9s.* per dozen.

*Cash to accompany order.*

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GREAT SALE of NURSERY STOCK,

Part of our Kingston Hill Ground having to be cleared by Christmas, we intend selling at the

KINGSTON HILL NURSERY,

During the month of

*NOVEMBER,*

All kinds of

DECIDUOUS AND EVERGREEN SHRUBS, FOREST TREES,

ROSES AND FRUIT TREES,

AT GREATLY REDUCED PRICES.

The Trade and Private Buyers will find this an excellent opportunity for Stocking.

T. JACKSON AND SON,

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Are noted for being strong, well-rooted and vigorous.
Dwarf H.P. *8s.* per dozen, *57s. 6d.* per 100.
Standards H.P. *15s.* per dozen, *100s.* per 100.

SEAKALE, extra strong, for forcing, *14s.* per 100.

CONIFERÆ, FOREST, and FRUIT TREES of all kinds.

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SEED MERCHANTS AND NURSERYMEN, CHEPSTOW.
Established 1779.

## ORNAMENTAL PLANTS.

100 ORNAMENTAL TREES, in 50 distinct varieties, including the new golden Sycamore, purple Maple, purple Plum, purple Birch, several variegated Acers, Elms, &c., 4 to 6 feet high, for *50s.*
100 ORNAMENTAL DECIDUOUS SHRUBS, in 50 distinct varieties, 2 to 4 feet high, for *15s.*
100 ORNAMENTAL EVERGREEN SHRUBS, in 50 distinct varieties, 2 to 4 feet high, for *40s.*
100 CONIFERS, in 100 distinct varieties, from 1 to 3 feet high, for *60s.*
100 DWARF ROSES, in 100 finest varieties, for *30s.*
100 RHODODENDRONS, in 100 finest varieties, 1 to 2 feet high, for *100s.*
100 PRIMROSES, in 30 distinct hardy varieties, for *30s.*

All safely packed in mats or hampers, package free, for cash with order.

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ORNAMENTAL TREES,
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EVERGREENS & COVER PLANTS,
Roses,
AND ALL OTHER TREES & PLANTS
OF SPLENDID QUALITY.

*Pronounced by everyone "Unequalled."*
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Reliable always. *Address in full—*

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None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

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*Catalogues and all information on application.*

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Nurserymen and Seedsmen to the Queen, and Wood Foresters to the Crown,
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Very long experience enables us to offer the BEST QUALITY at a moderate price, as proved by hundreds of Testimonials.

ILLUSTRATED LIST, Descriptive, Select, and comprising important NOVELTIES, on application.

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**JARMAN'S No. 6 COLLECTION** contains 1000 selected and assorted Bulbs, for Indoor and Out-of-door combined. Price 21*s.* cash. Package and Carriage Free. Others at 6*s.* 6*d.* to £4 4*s.*

# R O S E S,

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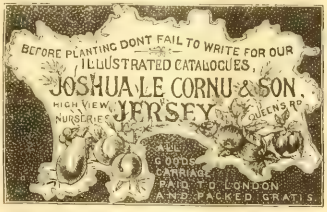
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AT THE CHISWICK CONFERENCE.

"Wonderfully fine collection."—*Garden.*
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PEARS—APPLES, PLUMS, &c., 18*s.* per dozen. Espalier trained, 24*s.* per dozen.
ROSES—Magnificent Bushes, 9*s.* per dozen. Standards, strong, 15*s.* per dozen.
Cash Orders most liberally treated.

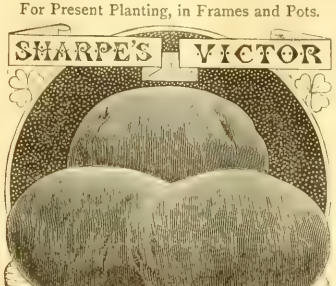
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We are in a position to make very low prices for the above, all grown from our own select stocks.

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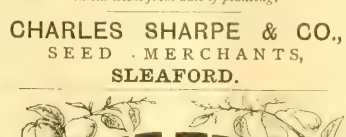

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*Nice Potatos fit for use having been produced by it in six weeks from date of planting.*

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An immense stock of healthy Trees of all kinds, true to name.

## CORDON FRUIT TREES

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## J. CHEAL & SONS
Crawley, Sussex.

Autumn and Winter-flowering Plants.



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Begs to announce that in consequence of the hot summer his stock of the above is remarkably fine this year, and well set for flower. Early Orders are solicited for the following, which are now ready for delivery:—

AZALEA INDICA, in variety.
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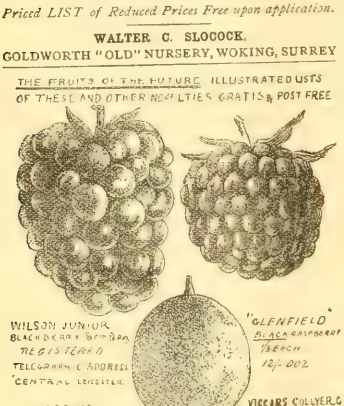
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THE

# Gardeners' Chronicle.

*SATURDAY, NOVEMBER 14, 1885.*


## WOBURN ABBEY.

IN *Fraser's Magazine*, September, 1879, Mr. J. A. Froude gives the history of "Cheneys and the House of Russell." He went down to Cheneys and visited the tomb-house of the Russells, where they lie, about four score of them, from young Lord Amberley, son of "Lord John," the hero of the Reform Bill, back to Anne, Countess of Russell, who built the mortuary chapel at Cheneys, A.D. 1556, and who lies there with her husband, sculptured in alabaster, in a seeming trance—the earliest of the monuments, and one of the finest in Europe. The name of this great family appears on the roll of Battle Abbey, but the Lady Anne was the great ancestress of the earls and dukes, who have been since gathered to her side. Her mother was a Cheney; her father, Sir Guy Sapcote, of Huntingdonshire; and from her came the Cheneys estate and 18,000 acres of the richest land in the shire just named; but, judging from her stern and noble portrait, she bequeathed to her sons gifts more precious than their broad estates. Her husband, the first Earl of Bedford—who could say with Othello that he had "done the State some service," a prudent and a cautious man, who was certainly well rewarded for his pains—lies by her side.

A family who have enjoyed 350 years of earldom and dukedom can afford to disregard the previous period since the Conquest when they could claim no particular distinction, and Sir John, the first Earl, who gained his knighthood and lost an eye in a battle in early life, must be regarded as the founder of his family. I should like to have discovered in Mr. Froude's paper something more than the praises of successful politics, and of the virtues appertaining to high birth and running, as he says, in the blood of aristocrats. I should like to have found a record of the social services of the Russells, and of their attempts to make two blades of grass grow were only one grew before, as recorded in the *Hortus Gramineus Woburnensis*, of their noble patronage of agriculture, horticulture, and silviculture, and of their employment of Repton, who formed the roads in the park at Woburn, planted the distant slopes and ridges seen from the windows of the Abbey, and fashioned the lake.

To begin at the beginning, the Abbey of Woburn was founded in 1145 by Hugh de Bolebec. It was granted in 1547 by Edward VI. to Sir John, afterwards Lord Russell of Cheneys, where he lies in alabaster as aforesaid, awaiting the unknown with a thoughtful countenance, while his countess—for he became an earl, as already stated—seems to look up with awe, bearing a bold heart nevertheless. Two hundred years later, in 1747, the old Abbey house was replaced by a new one, which has since been altered and improved, and is now a magnificent quadrangular house, called Woburn Abbey. It stands amid 60 acres of pleasure-grounds, with palatial stables adjoining it, together with a tennis-court and a riding-school, having a sculpture gallery on

one wing, all connected with the house by a long colonnade, and standing on the site of the former Abbey cloisters. Enclosing the whole of these extensive buildings is a noble park, containing nearly 3000 acres, which is perfect as an English park, of varied *contour*, peopled by herds of red and fallow deer and highland cattle, having avenues of Elms 2 miles long, roads that lose themselves in the distant foliage, unnumbered timber trees, tall and large Oaks enough to form a fleet, Beech which would keep High Wycombe in stock for several years, Spanish Chestnuts that would roof in all the houses in Beds, English or Cornish Elms, as they are called here, sufficient for a million coffins, and Horse Chestnuts and large Whitethorns, which were in full blossom during my visit. The distant views from the higher ground reach into Northamptonshire, or to the chalk downs of Ivanhoe and Tring. Along the lower ground between the house and the little town of Woburn a string of eight ponds, most of them stew-ponds in old times, vary the scene, and hold the duke's fishes, the golden carp and tench from Germany, in which the present duke delights. After drawing off a pond to inspect his favourites Mr. Frank Buckland became so enthusiastic over some of the duke's imported fishes that he jumped about and cheered like Lord Randolph Churchill on hearing the announcement of the late majority.

On the Abbot's Oak, the outside tree of a group before the windows by the water side, the last abbot was hanged for denying the king's supremacy. The London Road passes through the town and skirts the lake on the opposite bank, so that travellers can obtain, at the distance of a mile, a noble view of the park and of the west front of the Abbey. Standing on the terrace of Woburn Abbey you behold Nature in one of the best of her English aspects, clothed in timber and turf, and, in Shakesperian phrase, mended by the art of Repton. Some buildings of the "Home Farm," the very spot where Duke John's sheep shearings were attended by Arthur Young and all the great agriculturists of the period, are on the lower ground concealed by clumps of trees, and further off, beyond some wide-reaching shrubberies, the little town of Woburn discreetly hides, like modest Rachael—all but the old church, which too boldly perhaps lets itself be seen, as does the spire of the new one, which the duke himself erected at great cost, immediately without the park gates. In the foreground of this splendid scene, across the bold sweeps of grass, fallow deer come nibbling up towards the house unconsciously playing an appropriate part.

The gardens at Woburn Abbey were described in 1833 by the gardener of that time, Mr. James Forbes, in his *Hortus Woburnensis*, dedicated to the Duke of Bedford. Four remarkable books, now scarce and costly, two of them by the Duke himself, the others by his famous gardeners, Sinclair and Forbes, testify to the useful patronage which the owners of Woburn have long extended to the arts of agriculture, forestry, and botany. John, Duke of Bedford, the great patron of agriculture, was also famous as a planter. The park owes to him the "Evergreens," a plantation of 100 acres on the Woburn and Ampthill Road, which he planted in 1743, and thinned at the proper time, in spite of his gardener, who, on receiving directions as to the thinning, replied, "Your grace must pardon me if I humbly remonstrate against your orders; but I cannot possibly do what you desire, since it would destroy the young plantation, and seriously injure my reputation as a planter." The Duke replied, "Do as I desire you, and I will take care of your reputation;" and as soon as the thinning had been effected, he had a board fixed by the roadside, on which the following notice was written:—"This plantation has been thinned by John, Duke of Bedford, contrary to the advice and opinion of his gardener."

The next Duke John, the author of *Pinetum Woburnense*, and *Salictum Woburnense*, says in the former that his love for Conifers was a hereditary taste. It induced him to form a Pinetum in the pleasure grounds, which rivalled the collection at Dropmore. The ducal work is magnificently illustrated, and contains descriptions of most of the exotic Conifers which were introduced up to 1839.

In *Hortus Woburnensis* Mr. Forbes describes the gardens, which contained 6000 plants best adapted for culture in the greenhouse, stove, pleasure-ground, or flower-garden. Woburn owes much of its picturesque beauty to the skill of Repton in grouping the plantations, altering the form of the great sheet of water before the windows, and planting the slopes beyond. The pleasure grounds, however, were formed by one of the most remarkable and accomplished ladies of the family, a member of that noble race of Gordons whose statues and memorials remain in Strathspey, where the celebrated Duchess of Gordon raised her regiments at the period of George III.'s great wars. She was the duchess of the great agriculturist, John, Duke of Bedford, early in the century. A pleasing memorial exists in the double-flowering Thorn tree planted in her private garden, and formed by close clipping into an arbour, paved with pebbles, and having an arched entrance and arboreal windows. At present some private rooms open into this retired retreat, which has not been altered, and could not, I think, be easily improved. Roses, Honeysuckles, Jasmines, and Ivy are trained on ornamental trellises; simplicity and perfect elegance prevail; there are graceful curves and attractive corners, and the lawn is delightfully soft. It is a small garden, yet endless in appearance, through the concealment of the outer fence by evergreens and groups of trailers.

The parterres in front of the sculpture gallery come next in order as you pass from the south front along the colonnade to the pleasure grounds. They are laid out in the older, but not the oldest style, consisting of a lawn with gravel walks, and many beds edged with close clipped Box. Within the gallery are the "Three Graces," by Canova, a group which was executed for the Duke of Bedford at a cost of £15,000, standing on an antique pedestal, and placed in a secure recess which is appropriately paved with marble from the Duke's Devonshire estate. In the garden outside are Westmacott's bronze statues, the Dying and the Fighting Gladiators, and Silenus nursing Bacchus.

The attractive beds of Heaths, mixed with a few plants of Pampas grass in the foreground of the pleasure garden, remind one of another of the Woburn Abbey series of horticultural works, the illustrated *Hortus Eric. Woburn.*, which was printed for private distribution in 1825, the work being illustrated with costly engravings of the Heaths in the adjoining Heath-house, an extensive building 100 feet long. The hardy Heath garden, designed by Mr. Sinclair, is kept up in perfection, and numerous as the hardy species of Erica, Calluna and Menziesia, as well as Empetrum and Hudsonia, are strangely overlooked as ornaments of gardens. I may here allude to them as a characteristic novelty always admirable, and especially in August and throughout the winter. An avenue of Araucarias, a quarter of a mile long, is notable in this part of the pleasure grounds. Many of the salient features of the period of Duke John, the great horticulturist, remain in the grounds immediately surrounding the Abbey; others have been swept away in recent years, including the "Grass Garden," which contained 400 species of grasses, each growing in a plot bordered with cast iron edgings. The Arboretum and Pinetum, and the trial ground of the Willows, have also been dispensed with.

A conservatory, Camellia-house, and other greenhouses are easily accessible from this point, as well as the tennis-court, stable, and riding-house. Near the buildings, in a recessed part of an extensive lawn, is a pond with a cool and costly grotto near it, and a Chinese dairy on the margin, paved with marble, having old and valuable china and porcelain instead of the customary dairy utensils. *H. Evershed.*

*(To be continued.)*

# New Garden Plants.

## BRASSIA ELEGANTULA, *n. sp.**

THIS small-flowered Brassia has exceedingly stiff glaucous, cuneate ligulate acute leaves, and a glaucous, rather small bulb. Its inflorescence is a raceme of few (two to five) flowers. The bracts are very large, triangular, not equal to the stalked ovaries. The sepals are spreading, the lateral ones deflexed, all green with brown transverse bars. Lip oblong, apiculate, with two longitudinal keels at the base, hairy inside. The colour of the lip is white, with a few small, brown-purple dots in front of the calli. It is bent in the middle, the keels being found in the hollow under the stigma. The column is quite wingless, brown and green. I had this first—a very fine plant—from Mr. F. Sander, who stated that it is of Mexican origin, which surprised me. As it is the habit of many modern packing *employés* not to pack flowers, but to throw them into an empty box, as if they were hail-shot, the flowers came broken and the bud did not expand. It was a most agreeable surprise to get from Herr Oberhofgärtner H. Wendland, at Herrenhausen, near Hanover, a very fine five-flowered inflorescence, packed neatly, first in paper then in sphagnum. This is also of Sanderian origin. Now I can describe the plant. The really elegant thing is near to Brassia chlorops, Rchb. f., which has a one-sided inflorescence, a very narrow green lip, and adventitious acute calli in front of the keels. This I have only received once, and then from Messrs. J. Veitch & Sons. *H. G. Rchb. f.*

## HOYA LONGIFOLIA (WALL.) VAR. SHEPHERDII, N. E. BR.

THIS is the beautiful Hoya figured in the *Bot. Mag.*, at t. 5269, under the name of H. Shepherdi, Hook., which is placed by Sir Joseph Hooker in the *Flora of British India*, vol. iv., p. 57, as a doubtful synonym of H. longifolia. The leaves are certainly much narrower and longer than those of H. longifolia; but there appears to me no difference in the flowers. It is true that no type specimen of H. Shepherdi is preserved in the Kew herbarium, nor have I seen flowers of the plant here figured; but on comparing our illustration (fig. 140) with the plate in the *Bot. Mag.*, it becomes quite evident that they represent the same species, and in the Kew herbarium are wild specimens, collected in Khasia and Sikkim, of what is certainly the same plant, and I am unable to distinguish the flowers of these in the dried state from those of H. longifolia, and therefore place this plant for the present as a variety of that species. The specimen from which fig. 140 was engraved was kindly communicated by Mr. G. W. Cummins, gardener to Mr. A. H. Smee, and to him I am also indebted for a specimen (unfortunately without flowers) for the purpose of description. It appears to be a rare plant in cultivation; not only is this attested by the fact that there are no cultivated specimens of it preserved in the Kew herbarium, but also by the statement of Mr. Cummins, who writes me as follows:—"It seems strange to me that although many gardeners, &c.,

* *Brassia elegantula*, n. sp.—Aff. Brassiæ chloropidi, Endr., Rchb. f.: racemo quaquaversо; bracteis spathaceis triangulis acutis, ovaria pedicellata non æquantibus; sepalo impari semilanceo sepalis lateralibus æquabilibus deflexis; petalis subæqualibus arectis brevioribus, labello oblongo apiculato nunc obscurissime lateribus lobato, antice reflexo, superiori parte cum carinis suis in columnæ partem excavatam infrastigmaticam impressis, carinis geminis in basi antice inflexis, inter se puberulo velutinis. Orchidum elegantulum. Planta glauca. Folia cuneato-ligulata acuta rigida. E Mexico dicitur importata a cl. mercatore Albanensi F. Sander. *H. G. Rchb. f.*

visit this garden, no one has remembered seeing it elsewhere. In my opinion it deserves quite as prominent a position in any collection as the beautiful little Hoya bella; it flowers from the axil of nearly every leaf." The following is a description of the plant :—

Stem climbing, glabrous, as are also the leaves, peduncles, and pedicels. Leaves pendulous, 5—7 inches long, ½ inch broad, linear or narrow linear-oblanceolate, acute, tapering at the base, where they make an obtuse angle with the ¼—1 inch long terete petioles, fleshy, channelled down the bright green face, obtusely keeled down the paler green under-surface, which is mottled with brownish patches. Peduncles rather short. Umbels many-flowered, pedicels ½—1 inch long. Calyx lobes small, ovate obtuse. Corolla rotate, ¼ inch in diameter, pale flesh-coloured, glabrous outside, puberulous inside on the broadly ovate lobes. *N. E. Brown.*

## ORCHIDS IN FLOWER AT MR. BULL'S NURSERY.

We do not find any great number of Orchids belonging to different genera in bloom at this season of the year, so that we are the more gratified with the few that do enliven the houses. Foremost among these, especially when seen in clumps or large potfuls, when the mass is of various shades of pink, is Oncidium ornithorhynchum. These plants are in full bloom at this period and onward, and few things are more choice for occasional use in the dwelling as a dinner-table object. Several plants of Barkeria Skinneri and B. elegans rosea were also furnished with their cheerful spikes of flowers. Such easily managed winter bloomers ought to be in every collection of plants. Cymbidium giganteum was in flower in several instances, as was C. Mastersii, with pure white blooms, desirable as being earlier than C. eburneum. Those charming Pleiones Birmaniana, rose-coloured, and P. maculata, white, with crimson spottings on the white ground of the lip, that is pouting and frilled elegantly, were grouped together in one of the houses. In close proximity were Lycaste Deppei, showing a large mass of pale cream blooms on a comparatively small plant; and Phalænopsis Dayana, showing a bloom or two of pure white; another white flower was Dendrobium infundibulum.

The Cypripediums were beginning to show a few flowers here and there, such as C. Sedeni, C. calurum, good strains of C. Lawrenceanum, C. Spiceriannum, C. Ashburtoniæ, a pretty form of C. barbatum, named pulchrum, quite distinct. The rare and beautiful Aërides Lawrenceana, a small plant, is carrying a small spike of its sweet-scented rose and white flowers of waxlike consistency. A Vanda Sanderiana has eighteen fine large flowers, and a Saccolabium Blumei var. pulchra, the flower-spike of which, although only about 8 inches in length, indicates what a fine thing a large specimen in flower would be. It is almost white, the lilac tinge being of the faintest.

Of Cattleyas few are now in flower, but those in the large house, viz. :—C. Trianæ, C. Skinneri, and C. Mendelii, are showing abundant sheaths. The very dwarf-growing C. luteola, with blooms yellow and green, was in flower, in a house where Saracenias were resting, where we likewise found Cœlogyne cristata alba, snow-white, a great acquisition where flowers of the kind are in request. The new Angræcum Leonis, a small plant, was carrying one fair-sized bloom: this is also of purest white.

In a house filled with plants of Odontoglossum crispum just a few spikes of flowers were visible, and plenty of promise for the future. A few O. vexillarium rubellum were flowering, and of Masdavallia tovarensis many, some few M. trochilus, M. corniculata, and M. Shuttleworthii. The fragrant Trichopilia fragrans, and T. nobilis were in bloom, emitting a most agreeable odour.

Odontoglossum grande, a fine old plant, was showing quantities of its big, bold, yellow and brown flowers; O. leopardinum, with dark brown sepals and petals barred with green, the crest orange; O. Rossi majus, O. blephariccanthum, an astral form, with thin narrow petals and sepals brown spotted, pretty and useful as an early flowerer; the old O. bictonense roseum, and O. b. album, were both exhibiting some few blooms; as was O. Forbesii, so remarkable for the

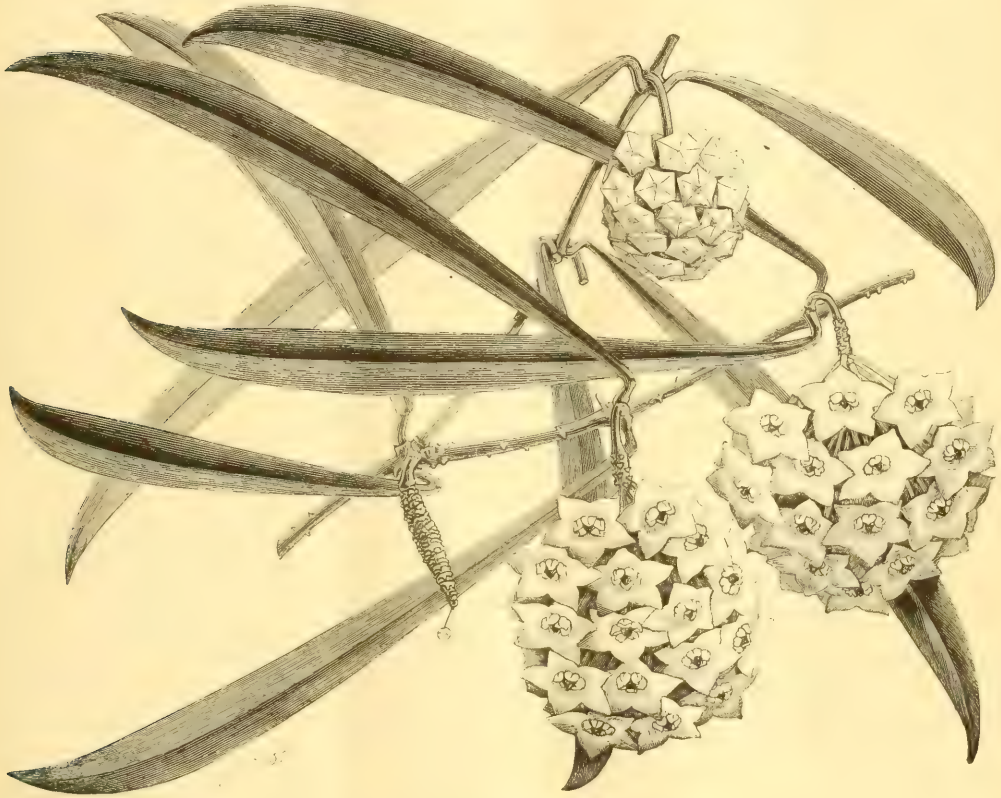


Fig. 140.—Hoya longifolia, var. shepherdii; flowers pale pink.

Eucalypts.—At the Linnean Society on November 5 there was shown for the Baron von Mueller a characteristic collection of skeleton leaves of species of Eucalyptus prepared by Mrs. Lewellin, of Melbourne. These confirm Baron von Mueller's observations as to definite layers and the relation of these to the skeletonising process. The leaves in decaying produce no bad odour. Mueller's observations do not support Mr. Riviere's statement that the Bamboo is as good as Eucalypts to subdue malaria; the former dry up, but do not exhale the volatile oil, as do the latter, and the Eucalypts, moreover, absorb moisture as quickly as Willows, Poplars, and Bamboos.

*

richness of its tints; O. madrense, an Ecuador species, white with a purple stain. Of Oncidiums, were O. prætextum (a beauty in brown), O. concolor, and the minute O. cheirophorum. The graceful Dendrochilum Cobbianum was prettily in bloom in various houses, and showed much difference of size. Many examples of Lælia autumnalis atrorubens were in bloom, forming a most welcome bit of lively colour amongst white flowers. L. autumnalis was stood in proximity, to show the improvement in colour in the first-named.

A plant of the deep golden-yellow flowered Mormodes pardinum unicolor was in flower; the spike is large and massive, and deliciously scented.

## THE MANURIAL VALUE OF FRESHLY FALLEN LEAVES.

OUR knowledge regarding the manurial value of fallen leaves has recently been added to by Professor Emmerling and others, in a communication contributed to the current number of the *Bied. Centr.*, 1885.

The results are given in the following tables:—

PERCENTAGE COMPOSITION.

| | Grey Poplar (Populus canescens). | White Willow (Salix alba). | Silver Poplar (Populus argentea). | Silver Birch (Betula alba). | Sycamore (Acer Pseudo-Platanus). | Common Alder (Alnus glutinosa). | Oak (Quercus robur). | Beech (Fagus sylvatica). | Horse-Chestnut (Æsculus). |
|---|---|---|---|---|---|---|---|---|---|
| Water | 20·88 | 21·27 | 12·31 | 15·74 | 17·74 | 17·66 | 17·73 | 15·35 | 17·03 |
| Dry matter | 79·12 | 78·73 | 87·69 | 84·27 | 82·26 | 82·34 | 82·27 | 84·65 | 82·97 |
| In dry matter:— | | | | | | | | | |
| Albuminoids | 11·52 | 16·74 | 12·51 | 5·16 | 8·44 | 18·71 | 7·07 | 6·57 | 7·37 |
| Fat | 6·09 | 5·15 | 8·42 | 1·[illegible] | 7·[illegible] | 6·91 | 5·73 | 3·66 | 3·86 |
| Carbo-hydrates | 47·44 | 51·49 | 50·70 | 54·[illegible] | 54·[illegible] | 52·54 | 52·57 | 54·[illegible] | 56·[illegible] |
| Fibre | 20·41 | 13·72 | 20·40 | 11·[illegible] | 22·[illegible] | 15·74 | 21·63 | 29·80 | 24·83 |
| Mineral matter (ash) | 7·51 | 7·61 | 7·83 | 7·[illegible] | 6·21 | 3·40 | 3·05 | 4·46 | 3·[illegible] |
| Nitrogen in dry matter | 1·84 | 2·68 | 2·00 | 0·[illegible] | 1·02 | 2·99 | 1·13 | 1·05 | 1·21 |

PRINCIPAL CONSTITUENTS IN THE ASH PER CENT.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Potash | 14·74 | 21·[illegible] | 20·31 | 10·73 | 14·[illegible] | 7·87 | 12·[illegible] | 11·[illegible] | 10·[illegible] |
| Soda | 7·98 | 7·61 | 4·14 | 4·43 | 2·[illegible] | 2·47 | 1·[illegible] | 3·41 | 2·[illegible] |
| Lime | 34·67 | 27·19 | 26·[illegible] | 31·[illegible] | 31·[illegible] | 48·03 | 27·12 | 22·12 | 31·[illegible] |
| Magnesia | 6·35 | 6·38 | 7·[illegible] | 24·58 | 6·[illegible] | 10·[illegible] | 8·8[illegible] | 6·24 | 11·[illegible] |
| Phosphoric acid | 4·47 | 7·86 | 5·37 | 3·18 | 2·41 | 5·53 | 4·[illegible] | 4·72 | 5·[illegible] |
| Sulphuric acid | 5·07 | 12·37 | 8·46 | 3·81 | 1·[illegible] | 5·76 | 3·[illegible] | 3·[illegible] | 4·[illegible] |
| Silica | 21·[illegible] | 5·42 | 21·84 | 3·37 | 1·[illegible] | 1·[illegible] | 22·[illegible] | [illegible] | 13·[illegible] |

A glance at these figures will show the immense variation in the constituents, and consequently in the manurial value, of different plant leaves, but it must be remembered that a few analyses of plants or their separate organs do not suffice to decide what kind and what amount of plant food a crop needs, and still less in what combination they produce the best effect; they simply tell what kind and amount the plant under examination contains at that particular moment. It is a well established fact that the same variety of plants, whether raised upon different kinds of soil or upon the same soils of a varying degree of richness, may contain a widely differing absolute amount of the same kind of organic "volatile" and inorganic "fixed" constituents.

It appears that about 3000 lb. of perfectly dry Pine timber are produced with a consumption of only 2½ lb. of potash and 1 lb. of phosphoric acid per acre per annum; with Beech trees the quantities required are rather larger. The growth of trees and shrubs, therefore, plainly less exhaustive to the soil than ordinary garden culture. The demand on the soil becomes, moreover, considerably greater if all the fallen leaves are removed. *J. J. W.*

THE AMERICAN POMOLOGICAL SOCIETY.—Colonel WILDER, now in his eighty-eighth year, has issued his annual address to the Society, in which he reviews the work of the year, and makes suggestions as to the future work of the Society, the reform of nomenclature, and the raising of new fruits. The address is in the old strain of enthusiastic eloquence, and we cannot doubt that the words of wisdom and encouragement he has uttered will bear fruit in the way the venerable President would wish, and tend towards the advance of pomology and the welfare of mankind.

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Continued from p. 557.*)

THE daylight was fast waning as we passed the sphinx-like pile of Vixen Tor, and the red Dartmoor cattle turned homeward towards Tavistock without the aid of a herdsman, separating themselves as they turned off to their respective homesteads, when a glimpse of Tavistock at the foot of the hill made us think ourselves happily near our destination. Alas! with Will-o'-the-wisp-like delusiveness Tavistock proved further and further off, and it was quite dark when we reached the Bedford Hotel, where we were informed that we had just missed the local flower show, and that the heavy rain we had experienced up on the moor had only been represented at Tavistock by a few slight showers.

### TAVISTOCK.

Viewing our position by daylight, we found ourselves literally in the middle of a Benedictine abbey. The hotel stands on the site of the chapter-house; in front is the church with a fragment of the cloister in the churchyard, erroneously termed the Tomb of Ordulf; the chief gateway is a little to the north-east, a Unitarian chapel behind the hotel was the refectory; the high-walled gardens, separated from the river only by a gravel walk, are now attached to the hotel and to the vicarage; whilst the Abbey bridge over the beautiful stream of the Tavy is now the direct road to the railway station. Considering that it is the centre of a mining district, Tavistock is a singularly clean town; and, though not having the reputation of the Dart, the Tavy, even as it passes the town, is singularly picturesque, especially below the bridge. On its left bank is a public walk with trees drooping over the water's edge; on the right bank are the gravel walk and high wall above-mentioned, and between flows the swift torrent, some forty feet across, falling over a weir provided with a salmon-ladder, and foaming between many a large grey boulder worn smooth and flat with its action. The walls of the hotel are so thick that there is actually a tiny recessed room in the thickness of that of the coffee-room, and the old gateway across the central "plaza" of the town bears witness to that considerable raising of the general street level from the accumulation of *débris* that generally characterises old places. The fine church has a double south aisle and large north and south doors, where there was formerly an open pathway in the tower. The painted alabaster tomb to Sir John Glanvil, the large pewter altar vessels and a holy-water stoup outside the north porch, are also worth notice. Outside a modern church in the suburb of Fitzford is a monument, recently unveiled, in honour of Drake, who was born at Crowndale, hard by.

### LIDFORD AND BRENT TOR.

Our destination on this day was the strangely beautiful gorge of the river Lyd and the volcano of Brent Tor. Arrived at Lydford Junction we walked about a mile to the house of Daniel Radford, Esq., in whose grounds this remarkable natural phenomenon is situated, and by whom we were most hospitably provided with luncheon. The house and garden are but newly established; but specimens of Cupressus, C. macrocarpa, Escallonia rubra, and other shrubs promise well in this favourable situation. Here, again, we found that bush fruit only had yielded anything like a crop this year; but Mr. Radford had a good show of Grapes, though grown from the old wood.

The attractive feature of the grounds, however, is the gorge—a narrow fissure in the live rock, from 15 to 40 feet or more in width above, and 30 to 40 feet in depth, at the bottom of which brawls the swift torrent of the Lyd, in places only 3 or 4 feet across, the sloping upper part of its sides planted with trees. It is in the main a perpendicular cleft in the dark greenish-grey and black slaty rocks, partially draped with Hart's-tongue and other Ferns, access having been made to its inmost recesses by a ledge of path and steps about a foot wide that has been cut for over a mile along one face of the ravine. At one point the high road crosses the cleft by a stone arch that, according to an apocryphal legend replaced a wooden one, the casual breaking down of which was the necessitating cause of one of the many Smuggler's Leaps of our south coast. What a smuggler was doing at a spot so far inland does not appear; but the leap, though a nervous one, would be by no means impossible. The water, leaping in a series of cascades into a circular basin nearly 20 feet across, whose arched roof speaks of the excavating power of its swirling motion, dashes along its narrow course in an amber stream, breaking into foam at the corners, where it is hollowing out pot-holes, until, beyond Mr. Radford's estate, it leaps over the 100-foot cascade that is said to be the finest in the South of England. After an exceptionally dry season, this sliding stream of white foam—for it is not strictly a fall—coming without any particular force over a bare ledge of reddish-grey rocks in the middle of a wooded valley, was disappointing. There are dozens of better falls in the Lake country: but comparisons are odious.

Without lingering to examine the scanty remains of Lydford Castle, or the church of the parish that, including Dartmoor, is the largest and the most thinly populated in the county, having less than 3000 souls to its 55,000 acres, we "made tracks" for Brent Tor. The three-mile walk from Lydford station to the volcano was not of particular interest. Lydford being about 660 feet above sea-level, and the summit of the Tor 1114, it involves an ascent of 450 feet, about half of which is included in the last quarter of a mile. Misled by guide books we were anathematising the vagaries of Devonshire arrangements that put inns five miles or more apart on Dartmoor, and placed the "Herring's Arms" and the "Stag's Head" within a stone's-throw of one another below Brent Tor, when we discovered that the latter, where the key of the church is kept, is merely a house, quaintly so named, and no inn. Close by is a manganese mine that has had a chequered prosperity, the ore from the 30-fathom shaft of which seemed, however, to be of a fine quality.

The climb up the absolutely treeless hill is a stiff one, but the view from the churchyard at the summit amply repays one for the trouble. The conical mass of basalt, pumice, and scoria, cannot, it seems, be truly considered as an entire volcano in miniature; but apparently the burnt appearance of its rocks gave it the name of Brent and suggested to the Normans that it might be well to curb any fiery evil spirits beneath by placing a church dedicated to St. Michael on the hill-top. This unpretentious edifice, the chief scene of Mr. Baring Gould's weird tale of "Margaret Gwither," published in the *Cornhill Magazine* for 1884, is 40 feet long and 14 in width. One bell having fallen, the rest have been removed, and the belfry tower, which is separated by but one single stone from the precipitous scarp of the hill, has been boarded up. Service is, however, performed regularly in the white-washed interior and in the summer many people drive to it, whilst the sexton bore witness to various recent marriages, and the tombstones to recent burials, at this inconveniently "high" church. Wild Thyme grew on the ledges of the rock, and Asplenium Adiantum-nigrum in its crevices; to the east stretched a panorama of western Dartmoor; whilst in the distance, in other directions, rose Brown

Willy, and many another Cornish hill, surmounted by chimney-shaft after chimney-shaft.

After tea at the "Stag's Head" we walked to Mary Tavy Station, noting Erica tetralix and plenty of Blechnum *en route*, and also that the outermost of some Larch plantations had suffered much on their windward side; and, on our arrival once more at our Tavistock hotel, though days spent in the open air are conducive to drowsiness, we beguiled an hour or two with the local guide-book (by a lady), containing a list of the "Botanical Plants of Dartmoor," and at least one autograph pencil note by Douglas Jerrold. The lady describing how a shower of rain damped the ardour of a party of archæologists discussing the Roman or Grecian origin of some remains, Jerrold writes, "It washed all the grease out of us."

*(To be continued.)*

## AMERICAN FLORICULTURE.

There are, it was stated by the President at the recent convention of the Society of American Florists, not fewer than 8000 florists engaged in the business, either growing plants or raising cut flowers for sale. Allowing 400 feet of glass-covered surface to each florist, gives us a total of 3,200,000 square feet; in other words, 630 acres. Calculating that half of the glass structures are used for growing plants, and that one-third of the space is actually covered with them, and averaging the size of pots used at 3 inches diameter, and allowing two crops each year, the number of plants would be about 40,000,000.

The remaining half of the glass structures are used for the purpose of growing cut flowers; the actual number produced is almost incredible. I can state, however, that during the past season—beginning with November and ending with April—nine large growers of Roses sent into the New York market close upon 4,000,000 of flowers, and when I state that this was not 50 per cent. of the Roses sent to New York alone, the magnitude of Rose growing will be imagined. The Roses grown around Boston, Philadelphia, Pittsburg, Cleveland, Chicago, Washington, and all other places, could not be less than twice as many as were produced for the New York market. This would bring up the number of cut Roses produced during the past season to 24,000,000. It would be very safe to multiply the number of Carnation flowers produced in the same time from all sources by at least five; this would give 125,000,000. Fabulous as this may seem, I feel that my calculations are rather under than over the actual number placed in the market. It would, moreover, be very safe to state that at least one-fourth as many Roses and Carnations are annually raised by gentlemen for their own enjoyment, which represents as much value as if thrown on the market and sold over the counter. Of various other flowers, though not in the same proportion, there are produced many millions.

The bulb trade, the bulk of which is represented by importation, has grown to be a source of great value to the business, and as there is a duty of 20 per cent. on all bulbs imported, it is a source of revenue to the country also; and, while I have no actual data to make a close estimate of the value imported last season, it is safe to say that not less than 200,000 dollars' worth were actually imported in the last twelve months — the bulk of these being Hyacinths and Tulips, more than one-half being used to force for cut flowers: this does not include more than 5,000,000 of Lilies of the Valley, which are not dutiable.

Thus far I have not said anything about a very important branch of the business, or those engaged in it. I refer to that branch known as the florists' supplies and requisites, which has grown to be a most important factor in the trade. The number engaged is estimated at 700. The most important articles are shapes for floral designs, such as ornamental baskets, vases in glass and porcelain, and other wares; wire work, holders for bouquets, tinfoil, wire for stemming, different papers for packing and wrapping flowers, and other articles used in the business. The actual amount of capital invested in this branch of our business is in the aggregate many hundreds of thousands of dollars, employing more labour in proportion than does the florist proper, paying in many cases enormous rents for their accommodation. Most of those engaged in this branch have other business relations, either as seedsmen or dealers in bulbs or cut-flowers. Then we have the army of cut-flower men, those who are not producers, but make a business entirely of selling flowers, either made into shapes or loosely. This is a growing branch, and to-day there are not less than 2000 employed in it.

The land occupied with flowering plants and bulbs of all kinds scattered over the country must aggregate at least 12,000 acres, in addition to several thousand acres used for growing flower-seeds. This is accounting only for land so occupied in America. It would not be too much to say that fully half as much land in Europe is also used in the same manner for the American trade. In addition to this there is nearly as much area of land, and as much glass, and more than half as much labour devoted to the cultivation of flowers by gentlemen who can make a pleasure of so doing; yet, with all this, the florists and gentlemen growers of America have been unrepresented by any organisation until the Society of American Florists was established. Just think of an industry of such magnitude without a voice or a word in its own interest!

## TELPHERAGE.

On the 17th ult. the first line for the conveyance of goods by the electrical system invented by the late Professor Fleeming Jenkin, and entitled "Telpherage," was formally opened at G'ynde, near Lewes. The system was fully described in a paper read before the Society by the inventor on May 14, 1884, but the details have been somewhat modified since that date. The line is a double one, nearly a mile in length, and is composed of two sets of steel rods, three-quarters of an inch in diameter, supported on wooden posts of T-shape, and about 18 feet high. The wires are supported one on either end of the cross-piece of the T, which is 8 feet long. The carriers, or skips, as they are technically termed, are iron trough-shaped buckets, each holding about 2 cwt., and suspended from the line by a light iron frame, at the upper end of which is a pair of grooved wheels running on the line of rods. A train is made up of ten of these skips, which are in electrical connection with each other, and with an electrical motor which is placed in the middle of the train, having five skips in front of and five behind it. At a point about midway of the length of the line is the engine-house, in which is a steam-engine which drives the dynamos. From these latter the current is led to the line, and thus to the electrical motor which moves the train. The use to which the line is put is to carry clay from a pit to the Glynde railway siding, whence it is delivered into trucks, and transported by rail to the works of the Newhaven Cement Company. At the charging end of the telpher line the skips are loaded each with about 2 cwt. of clay, the train thus carrying 1 ton. A labourer, by touching a key, starts the train, which travels at a speed of from four to five miles an hour along the overhead line to the Glynde station. Arrived there another labourer upsets each skip as it passes over a railway truck, into which the clay is thus loaded. This upsetting, however, is eventually to be performed automatically by means of a lever on each skip, which will come in contact with a projecting arm as it passes over the truck. *Journal of the Society of Arts.*

## FERNFIELD, BRIDGE OF ALLAN.

This small but marvellous collection of rare Orchids is well worth a long pilgrimage to see, even at this season, for if you arrive cold the Doctor will see to it that you are properly dispensed for. The following, although not a complete list of those in bloom, or coming into bloom, includes the more important species, the varieties of which have been selected with the greatest care. Dr. Paterson believes in cool treatment throughout; the three or four compartments into which his range of Orchid-houses is divided. Indian, Brazilian, Mexican, and numerous species from the South American Andes, are all thoroughly well grown in a temperature in which a weak-chested person can delight, and where the strong could take no harm. There are a few Indian species, such as Phalænopsis grandiflora, P. amabilis, &c., also various Saccolabiums, Aërides, and many others which could be named that are found from experience not to succeed here. A list of such as are grown would be a valuable and safe guide to many amateurs and others, seeing that those only are grown which succeed:—

Odontoglossum Uro-Skinneri, very large and deep in colour.
Pleione lagenaria, flowers larger and higher coloured than usual.
,, Reichenbachiana.
,, maculata.
Oncidium tigrinum, labellum large.
Odontoglossum Rossii majus, a grand form of it.
,, grande.
,, madrense (maxi'l re).
,, various plants of crispum (Alexandræ); on one strong spike we counted six lateral branches, on another twenty flowers.
Epidendrum vitellinum, a grand specimen.
Various Masdevallias, M. Davisii and M. Veitchii being in fine form.
Cypripediums were also varied, the best being C. magnificum (Spicerianum magnificum), and the true C. Maulei.
Cattleya marginata, a bright coloured form.
,, maxima, with two spikes.
Maxillaria lepidota.
Miltonia Moreliana var. atrorubens.
Stenia fimbriata.
Promenæa citrina.
Sarcanthus teretifolius?
A beautiful seedling Zygopetalum, with deeply coloured sepals, and a beautifully marked labellum, looks as if it might be intermediate between Z. maxillaria and Z. Mackayi.
Cœlogyne ocellata var. maxima, showing four spikes.
,, barbata, five spikes.
Vanda tricolor, Dalkeith variety.
,, cœrulea, Burford Lodge variety, enormous blooms.
,, Cathcartii, 5 feet high, showing three fine long spikes.
Cymbidium elegans, with five large partially pendulous spikes of lemon-coloured flowers, exceedingly fine.

*Robert Bullen.*

## THE GENUS ODONTOGLOSSUM.

(*Continued from p. 589.*)

Odontoglossum crispum Schroederianum.—I hardly know whether this grand and distinct Odontoglossum should be put with the crispums, as it shows so many strange features, the profusely maroon-spotted lip especially being so unlike any other. The sepals and petals are white, profusely blotched with purplish-crimson. This very lovely variety was awarded a First-class Certificate when Baron Schroeder sent it to the Royal Horticultural Society in January, 1885.

O. c. Goldringianum.—A superb variety, with finely-formed, broad-petalled flowers; sepals and petals snow-white, lip chestnut edged with white, column dark purple. — R. H. Measures, Esq., Streatham.

O. c. aureum.—This is a very charming plant, with all the characteristics of an ordinary crispum, except that its flowers are soft canary-yellow instead of white; the sepals are spotted with reddish-brown. F. A. Philbrick, Esq., was awarded a First-class Certificate for it at the Royal Horticultural Society in February, 1884.

O. c. aureum magnificum flowered with Mr. Dorman. It has a white ground, edged with light yellow, and having reddish-brown spots. A very distinct plant, with a light trace of O. Andersonianum in it.

O. c. flaveolum is another bright light yellow variety; it is unspotted, and can only be called a good yellow crispum. The best form I have seen is with George Hardy, Esq., at Timperley.

O. c. Lehmanii is a curious and pretty small-flowered variety, intermediate in form between O. crispum and O. Pescatorei.

The following varieties seem nearer to O. crispum than to any other species:—

O. Measuresianum.—This exquisite thing is as puzzling as it is beautiful. It is certainly one of the best marked Odontoglots; in general appearance like O. Pollettianum, but by the column and crest much nearer to crispum than that variety. O. Measuresianum has flowers of medium size with the greater part of their surface blotched and spotted with a bright vinous crimson. The ground colour is white shaded with rose. When this handsome variety gets strong it will prove wonderfully beautiful and distinct. It flowered with R. H. Measures, Esq., of Streatham.

O. Horsmanii.—This rare variety is very handsome; its flowers have a white ground changing to pale yellow, sepals and petals richly blotched with bright red. It was named after Mr. Fred. Horsman, of Colchester, who collected it,

O. SHUTTLEWORTHII.—This is a superb kind, in form a decided pure white-grounded crispum, with the pretty brown markings which give it at first glance the appearance of Wilckeanum albens. Its column and crest differ slightly from crispum. Messrs. Shuttleworth, Carder & Co. were the lucky importers of it, and they received a First-class Certificate for it at the Royal Horticultural Society, April, 1884.

O. CHESTERTONI.—This plant, which was named after the late J. H. Chesterton, the botanical collector, was awarded a First-class Certificate at the Royal Horticultural Society in March, 1876. The true variety, such as that now at Baron Schroeder's, has medium sized, rather curled flowers, white, changing to pale yellow, and prettily marked with reddish-brown.

O. PRIONOPETALON.—This is one of the grandest of Odontoglossums, and it appears to bear traces of O. triumphans on a finely formed O. crispum. Flowers very large, cream-coloured on a primrose ground, heavily barred with bright chestnut. The peculiarity of the variety is the enlargement of the petals and their saw-like edges. Sir Trevor Lawrence first flowered it, and still has the very best variety.

O. SCOTTII is something like O. prionopetalon, having also jagged-edged petals, but more irregularly marked. The crest bears traces of O. Hallii. It is moreover a grand variety. It was exhibited by G. F. Wilson, Esq., of Heatherbank, Weybridge, and received a First-class Certificate at the Royal Horticultural Society, February, 1883.

O. EUGENES.—This grand Orchid should perhaps have been placed next to O. excellens, a glance at which at p. 241 will give a good idea of its loveliness. O. eugenes has pale yellow sepals and petals marked with bright reddish-brown, lip white, with yellow and crimson at the base. It is said to be a Pescatorei hybrid, but it might easily be out of crispum by the lip and column. Mr. Stevens, of Trentham, was awarded a First-class Certificate for it at the Royal Horticultural Society, July, 1883.

O. MACROSPILUM.—I think this is close on O. crispum, although it has a suspicion of O. Andersonianum. It has large flowers, with sepals and petals of a firm texture, creamy-white to light sulphur, spotted with dark cinnamon. It is very attractive. One of Mr. B. S. Williams' introductions. *James O'Brien.*

## A COMMON EDIBLE MUSHROOM.

AGARICUS ODORUS, *Bull.*—At p. 460 a description and illustration are given of an edible Mushroom named Agaricus rubescens, P. The plant now before us, Agaricus (Clitocybe) odorus, B., is, in comparison with A. rubescens, P., very simple in structure. With a slight amount of observation it is impossible to mistake it for any other species.

Agaricus odorus, of Bulliardi, grows in woods; it is common in Fir plantations amongst Fir needles (see base of stem). Unlike A. rubescens, P., A. odorus, Bull, has neither volva at the base, collar round the middle of the stem, or patches on the top. The gills are adnate, or slightly decurrent, that is, the gills touch the stem, and run very slightly down it (see section). The stem is generally sub-bulbous. The top or pileus is not viscid; it is dull bluish-green, or dirty green in colour, the solid or stuffed stem and gills are whitish, pallid, or very pale dull green. A. odorus is highly fragrant; it smells strongly of almonds, Melilot, Aniseed, new mown hay, or Meadow-sweet. The plant may often be detected by its odour some time before it is seen, and the pleasant fragrance remains with the fungus a long time after it has been dried. The spores are white, and when magnified 500 diameters, are seen as on the left of the illustration (fig. 141.)

In cooking A. odorus it is only necessary to remove any dirt and cut and fry in butter, or with meat, in the style of preparing the common Mushroom for the table. The flesh is very tender, with a taste slightly suggestive of its enticing odour. A taste may soon be acquired for the delicious and novel flavour of this Agaric.

There are several other bluish or dull green Agarics, as A. virosus, Fries—this has an offensive fœtid odour; A. æruginosus, Curtis, this at first has a viscid, sometimes scaly top, the stem is hollow and has a collar, and the gills are deepish brown or purple-brown in colour. It has a disagreeable smell. Allied to this are A. Worthingtonii, Fries, and A. albo-cyaneus, Desm. Agaricus nudus, Bulliardi, is a large species, and not scented.

Some edible species of Russula are greenish, as Russula virescens, Fries, and R. heterophylla, Fr.; neither are fragrant.

The large subgenus to which A. odorus belongs—viz., Clitocybe—is an eminently safe one. It is probable that nearly all the species are either edible or non-poisonous. There is an edible ally in Agaricus fragrans, Sow. It grows in woods, is much like A. odorus in its forms and parts, but is pallid white in colour. It is fragrant, but not to such a high degree as A. odorus, Bull. Several other species of Clitocybe are faintly scented and edible. *W. G. Smith.*

## A GREAT ORCHID SALE.

THE disposal by auction of the superb collection of Orchids of the late Mrs. M. J. Morgan, of New York, and who had selected the very choicest varieties, has, says the *American Florist*, made one of the most important distributions in American floriculture. Many lots went for less than a quarter of their value, yet, when we consider how much spirit was displayed in bidding and the very fair prices obtained, it goes to prove that the love for Orchids is much stronger than ever. We have to admit that the plants did not realise their full value, taking into account prices obtained for such like plants in Europe. The collection cost in the neighbourhood of 200,000 dols. The total amount of the sale was about 22,000 dols. This is, of course, a great sacrifice, and may be accounted for in various ways. Many of the plants were purchased when there was not more than a dozen of each to be had at any cost, since which time importations of large quantities has reduced the value; again, there are but very few trade collections of Orchids formed in America where such valuable plants could be stored, until in turn they would again find their way into private collections.

The sale was advertised for two days, but was continued over four days. The number of lots sold on the first day was 393; the second day, 420; the third day, 620; and the fourth day, 300. The principal buyers were Jay Gould, Irvington; Erastus Corning, Albany; C. J. Osborn, New York; W. S. Kimball, Rochester; S. S. Bain, Montreal; De Witt S. Smith, Lee, Mass.; Seibricht & Wadley, New York; Wm. Matthews, Utica; George Such, New Jersey; F. L. Ames, Boston; H. G. Marquand, New Jersey; W. Barr, Orange, N. J.; Robert Garrett, Baltimore; L. Menard, Albany; John S. Bush, New York; H. Graves, New Jersey; F. Scholes, Brooklyn; J. Cockcroft, Connecticut; L. Pratt, New York; C. A. Dana, New York; W. Court, representing Veitch & Sons, London, England; and E. McKenzie, representing Sander & Sons, St. Albans, England.

The most important purchases made by Mr. Court were Aërides expansum Leonis, 70 dols.; Aërides Veitchii, 35 dols.; Cattleya Skinneri alba, the best plant in cultivation, 200 dols.; Cattleya sp., 80 dols.; Cattleya Dominiana, 55 dols.; Cattleya labiata, 90 dols.; Cattleya Mastersiana, 90 dols.; two Cattleya fausta delicata, 145 dols.; Cypripedium Morganianum, a hybrid of Messrs. Veitch, and which was presented by them to Mrs. Morgan, 750 dols. This is the largest plant in cultivation, there being only a very few of any size. When this plant was offered a supreme stillness pervaded the room. As was expected, a severe fight was made for it. Mr. Kimball started with 100 dols., he and Mr. Grey, Mr. Corning's gr., bidding by 50 dols. up to 500 dols.; Mr. Court and Mr. McKenzie then fought until the plant was sold to Mr. Court for 750 dols. Applause followed the purchase. The plant would have been purchased by Mr. Court even if the price had reached 1500 dols. The next important purchase by Mr. Court was Cypripedium Stonei platytænium, 450 dols.; C. Fairrieanum, 100 dols.; and many other very rare plants.

Mr. McKenzie, for Messrs. Sander, purchased among other rare and scarce varieties of Aërides, Schrœderii, 80 dols.; Cattleya exoniensis, 250 dols. and 80 dols.; Cattleya labiata, 160 dols., 96 dols., and 55 dols.; Cattleya fausta, 35 dols. and 95 dols.; Cœlogyne cristata alba, 210 dols.; three Cattleya Louisiana, 60 dols, 18 dols., and 16 dols.; and several others.

Mr. H. Seibrecht, of Seibrecht & Wadley, bought the first plant and the last, and the gem of the collection, Vanda Sanderiana; the final bid of 900 dols. was made by Mr. Seibrecht, and amid cheers he lifted the plant carefully and carried it off. The plant cost originally 2000 dols., and except for the delay in transit of instructions from England it would have sold for more than the original cost to have retained it here. The plant has been resold to C. J. Osborn at a considerable advance. The next lot to this, Vanda suavis, was sold to Mr. Kimball for 400 dols.; Mr. Kimball bought many plants at high figures and good bargains, as did most other buyers. So it will be seen the plants are widely scattered, many of which will be as much appreciated as ever. The pulse of the sale is that never before in the history of Orchid culture with us has there been anything like the enthusiasm. It shows that America will soon have as good collections of Orchids as of other plants, and the time is not far distant when we can say, every city has one or more representative collections of Orchids. *American Florist.*



FIG. 141.—AGARICUS ODORUS, BULLIARDI.

BOOK RECEIVED.—*Orchids, the Royal Family of Plants*, by Harriet Stewart Miner (John Slark, 12, Busly Place, Camden Road, N.W.).

# Florists' Flowers.

## THE PELARGONIUM.

THE large flowered varieties are easily managed during the winter months; and as they are now in the resting period, they must not be excited to grow freely. They have no period of complete rest, as large and small specimens will continue to grow a little all through the winter. Alluding to the large specimens first, especially those that have to be in full beauty about the end of May, these ought now to be in their flowering pots, and if they have not yet been repotted this ought to be seen to without a moment's delay.

Let the plants be moist at the roots, but they ought on no account to be very wet; when repotted place them in a position where they can have as much light and air under and over them as possible without exposing them to high winds.

Give them no water at this season for a week or perhaps ten days after repotting them; even after the roots have taken firm hold of the potting soil, water very sparingly. It is of considerable importance that the glass should be cleaned. Plants of all kinds under glass cannot get even enough light up to March. Tie a piece of tarred string under the rims of the pots, and tie the young growths down to it. This can be done with the greatest safety when the plants are dry at the roots. A word also about seedlings. They may also be shifted into their blooming pots now. Some leading men in the floricultural world have said, that the show Pelargoniums cannot be much further improved. My own opinion is that there is still great room for improvement, especially in the habit of the plants. It may be interesting to read what was stated in the *Gardeners' Chronicle* on this subject forty years ago, vol. vii., p. 763:—"Hybridising in the direction followed by the raisers of Pelargoniums has reached its limits; we have obtained all the results that are attainable. Therefore we say, gentlemen, you should now sail on another tack. Put your ship about; it is no use to cruise any longer in these seas; you have done all that men can do in this quarter, and if you are wise you will steer in another direction." The same advice has been repeatedly tendered to the florists during the period which has intervened since the learned Editor of the *Gardeners' Chronicle* thought that all had been done that man could do. The florists thought the Editor was wrong, and pursued their work steadily. If the work of seedling raising is as steadily pursued during the next forty years, I doubt not that quite as much progress will be made. If any one can "sail on another tack," only good will result from it; I had a good try to produce seeds from intercrossing the Cape species, but failed to get any.

Our winter-flowering zonal Pelargoniums are just coming into bloom, and they promise well. The temperature of the house is kept up to 50° and 55°, with a rather dry atmosphere. The plants have well filled their pots with roots, and as they are in full growth they require a good supply of water; an occasional supply of liquid-manure adds richness to the colour of the leaves and flowers. Specimen plants or plants of any size wintered in a house from which frost is just excluded will require scarcely any water during winter; give none until the soil in the pots is almost dusty dry.

The fancy or small-flowered section requires the warmest position in the greenhouse, and the potting soil ought to be rather lighter; a larger proportion of sand should be added to it, and some pounded charcoal. *J. Douglas.*



FIG. 142.—HELENIUM AUTUMNALE, WITH STALKED FLORETS, ETC.

## HELENIUM AUTUMNALE.

THE specimen here figured (fig. 142) was kindly forwarded to us some time since by the Rev. C. Wolley Dod. The outer or ray-florets were on long stalks, instead of being sessile, as usual; the corolla greenish, destitute of stamens, but with a more or less leafy pistil. In some cases within the outer corolla was a second petal-like tube, which, when cut open, revealed in the interior a small secondary flower-head raised on a short stalk, so that the general tendencies of the flower-head were to revert to the vegetative condition, as shown in the propensity to become green and to branch.

"LETTS' POPULAR ATLAS" should find a place in every garden library. The maps contain a large amount of information, are clearly printed, and issued at a low price. In one of the recent numbers is given a map of the Turkish empire, of special interest just now, and in another a good geological map of England.

# The Rosery.

## ON SOME TEA AND NOISETTE ROSES.

THERE is always danger that in the race for exhibition varieties of Roses, some kinds, that from one cause or another, especially from want of size or lack of petals, should be overlooked; and so it comes to pass that it is needful to remind lovers of a garden that there are amongst these classes, which, as I have already said, contains the best and most enduring of garden Roses, some of which are apt to be neglected; they cannot be called button-hole Roses—as some of them are too large for that, nor exactly garden Roses—as some are not quite vigorous enough for it, although there are many of them that might be classed under both these classes. They might perhaps be termed fragrant Roses; but I think that perhaps that which I have applied to them—non-exhibition Roses—will be more inclusive than any other; and under that title I shall notice them.

*Ma Capucine.*—This is a most charming button-hole Rose, the most remarkable in colour of all the Tea Roses, a bright orange-copper. The plant is not vigorous, and the buds are very small, but it is a most attractive Rose, and is an instance of how a Rose may be overlooked. Some time ago, when I had noticed it elsewhere, and several persons had desired to obtain it, I had several letters to ask me why I recommended a Rose which no one seemed to have? Since then it has reappeared in several catalogues. It must be recollected that it is almost a single Rose, and very suggestive of the Austrian Copper; but at the same time catch it in the bud state, and I venture to say ladies especially will be delighted with it.

*Madame Falcot.*—This is another very highly coloured flower, large, and more double than the preceding, but at the same time one on which no dependence can be placed for exhibition, neither has it vigour enough for a garden Rose. The colour is a deep apricot with a tinge of orange in it; it is very beautiful when in a half-open state, but woe to the exhibitor who, tempted by the beauty of its appearance, places it in a stand: he will inevitably find it staring at the judges, and wondering what they are looking at it for.

*Bougère.*—An old Rose, more than fifty years in cultivation. At one time it was considered quite fit for exhibition, but its day is past; it is, however, still a pleasing Rose, is very vigorous in growth, and deserves a place as a decorative Rose. It does best against a wall.

*Homère* comes near to being an exhibition Rose, and is quite deserving of a place in the garden; it is very vigorous, and when it its proper condition an attractive flower; the colour is white, with a pink edge, the form cupped, and the edges crimpled, which give it a very distinct appearance.

*William Allen Richardson.*—A Rose sometimes said to be of American origin, but which was, I believe, raised by the Widow Ducher at Lyons. It is of all others the most attractive as a button-hole or spray Rose, being fuller than Ma Capucine, and consequently lasting longer, while its colour is very taking; the lower half of the flower is of a deep brilliant orange, and the upper half white; sometimes the orange runs up the whole of the petals, but when in its real character the line is very distinct. Mr. House, of Peterborough, has brought it largely before the public, and the stands where it has been shown have always had a large number of persons standing round, captivated by its attractive colouring; it is very vigorous in habit, and free in blooming.

*Madame Chedane Guinoisseau*, or, as it is more briefly named in Pince's catalogue, Madame Chedane—a very bright and pretty Rose, of a bright yellow, small, and most suitable for a button-hole or spray Rose; it is not a strong grower, and cannot be called a garden Rose; but its place is unquestionably that of a button-hole Rose, for which it is admirably adapted.

The foregoing may all be fairly classed as Tea Roses, although the last-named variety comes very near to being a Noisette, but the following Roses must, I think, with the exception of the first, be classed amongst the Noisettes; I have included it with them because of its climbing character, which it shares with them, and which is one of their characteristics. There are only two Noisette Roses which are classed amongst exhibition flowers (Caroline

Kuster and Maréchal Niel) in the carefully prepared catalogue of the National Rose Society, and I know that some question whether they ought not rather to be classed with the Noisettes.

*Gloire de Dijon.*—It seems rather hard upon this, probably the most extensively grown of any Rose in cultivation, that it should be excluded from the list of exhibition Roses; for what a useful Rose it is!—vigorous in growth, enduring all kinds of treatment and all varieties of situations, forcing well, covering walls, climbing up pillars facing north, east, south, or west, it seems that old Glory of John can never be put out of countenance; it beams upon you from all quarters, and rewards its owner with abundance of blooms; it withstands the extremes of cold and heat, and is everybody's flower, and yet it came up as a chance seedling in the garden walk of the nursery of Jacotot at Dijon. Its parentage is unknown, but Mr. Girdlestone, who is no mean authority, suggests that it has a good deal of Bourbon blood in it, indeed it has been suggested that it was a cross between a Tea and a Bourbon; but, as I have said, its parentage is absolutely unknown. As a full-blown Rose it is rough, but about half or three-quarters open it is very pretty. It is a free seeder, and some of its seedlings are smoother and better than the parent, which, however, will long remain in its present position as the most popular and widely grown of yellow or quasi-yellow Roses. Its growth is straggling, and the shoots not well covered with foliage.

*Celine Forestier.*—This is a very abundant flowering and distinct looking Rose, so distinct that the merest tyro would hardly fail to recognise it; so good is it that a Portuguese Rose grower has, it is said, sent out a second edition of it, under the name of *Lusiadas*. It originated with Froulliard, the foreman of M. André Leroy, at Angers; and I remember well when with the late Mr. Standish at that charming old French town, seeing it when he introduced it, and have a lively recollection of the complimentary tea (not Rose) with which we were treated, made with cold water. The Rose is very vigorous [But tender. ED.], and continues in flower a long while.

*Aimée Vibert.*—A very old Noisette, pure white in colour, and very free flowering, and almost evergreen; one seldom sees it now, but it ought not to be neglected, for it is the purest white climbing Rose that we have.

*Lamarque.* — This somewhat tender Rose, does well in the Southern Counties, but is scarcely hardy enough for cold districts; colour white, shaded with yellow, blooming in clusters very abundantly.

*Ophirie*, another Rose that is too much neglected as a climber, for it is one that blooms abundantly in the autumn, and the colour is bright, being a deep apricot. It has so much of the Tea blood in it that it blooms profusely in the autumn, and is altogether a very desirable Rose.

*Rêve d'Or.*—This I regard, taking it all in all, as the best yellow climber that we have; it is said to have been raised in 1869, but I am inclined to think it was a year later, for it was one of a small parcel which came to me from Lyons during that terrible year, and was six weeks on the journey: it however, survived, and was planted against my house, of which, as I have said, it in a few years covered a large portion on an easterly aspect, and reached up to the very eaves. It has one great advantage over the Roses of the Gloire de Dijon type, that it is thoroughly covered with foliage up from the ground, and it is almost evergreen. In colour it approaches to Madame Falcot; the flower is not very full, and consequently it is best in a half or three-quarter opened state. I have never yet seen a climbing yellow Rose that could compare with my plant previous to those two terrible winters of 1880 and 1881, when it was cut down to the ground; it has, however, recovered itself, and will, I hope, soon occupy the same space as before.

*Solfaterre.*—An old climbing Rose, semi-double, yellow, and exceedingly free-flowering; the shoots are long and straggling, like Gloire de Dijon. A plant of it covers the south front of a house close to me, and is always early and profuse in flowering, and I adhere to my opinion that the best yellow climbing Rose is Rêve d'Or. "What about Maréchal Niel?" some one will say. Well, I do not believe in it as an out-of-doors Rose; it will only grow in warm situations, and there is very subject to mildew, and its manner of drooping its flowers detracts considerably from its effect.

I would desire to thank your correspondent "M." for bringing under our notice the new Roses of my good friends the Dicksons of Newtonards. I had, not heard of them before. The descriptions sound well, and they are honest folks, and, like St. Patrick, come of "dacent people." *Wild Rose.*

## FRUIT NOTES.

ALPINE STRAWBERRY, QUATRE SAISONS. — Mr. Roberts is now fruiting a considerable quantity of this variety within the glass-covered Peach wall at Gunnersbury. It is very useful indeed, for furnishing a supply of Strawberries at this season of the year. The fruit are of good size for an alpine, and colour well, though they would probably take on a better colour in a higher temperature. They possess an agreeable fine flavour. It is also a free bearer. *R. D.*

BEURRÉ FOUCQUERAY.

This is a newly introduced French Pear, of the first quality, ripening from the middle of October to the middle of November. The fruit measures 4½ inches in length by 4 in breadth, is pyriform, obtuse, with a short thick stalk set in a rather shallow basin. The skin is olive-green speckled with brown spots. The flesh is white, tender, melting, sweet and perfumed.

BEURRÉ DE L'ASSOMPTION.

Mr. Blackmore's description of this Pear as clumsy and ugly, with a bad habit of growth and worse texture, has always appeared to me not only happy but true. It is pleasant to hear from Mr. Wildsmith that it is not universally so. From bush trees on the Quince the majority of the fruit are irregularly shaped, not to say deformed. The flavour is sharply piquant, and there is quite enough grit at the core. In Suffolk I have seen it grown as a cordon on a south wall with very moderate results. It was a shy bearer, and the fruit not nearly so good as Williams' or even Clapp's Favourite. Tyson is another belauded early sort that falsifies its Yankee reputation in East Anglia, where also (I am speaking of the neighbourhood of Bury St. Edmund's) Monchallard, Beurré Six, Beurré de Bolwiller, Beurré Baltet père, Comte de Paris, Général de Lourmel, and others I could mention, only cumbered the ground and deserved none of the praise in the *Orchardist. C. A. M. C.*

GOLDEN NOBLE AND WALTHAM ABBEY SEEDLING APPLES.

The matter to which "P." drew attention in a former number, in reference to the coupling of these two very distinct kinds of Apples together in the Royal Horticultural Society's schedule, was commented upon last year, when it was explained that whilst no doubt existed as to the absolute dissimilarity of these kinds at headquarters, yet that having been sent out some years since somewhat mixed in nomenclature it was still held best so to class them in the schedule because of this difficulty. Probably the time has now arrived when former mistakes should be ignored, for no one who is the least familiar with Apples can be unaware which is which of the two kinds named. Certainly no two kinds can be more dissimilar in appearance of fruit and in style of tree. Both deserve to rank amongst our best kitchen kinds, for both are permanent croppers, produce good sized fruits, and both keep well. Of the two I think Waltham Abbey Seedling the most prolific and best for general culture, indeed it may be termed the cottager's Apple *par excellence*, for it never fails to fruit. The tree is compact habited, and rather handsome as a standard. Apples of the kinds under consideration are most valuable when such big kinds as Warner's King, Lord Suffield, Peasgood's Nonsuch, and many others are rotten. I would like to add that of kinds not generally grown two have fruited here with me on free grown trees most abundantly this season, the fruit literally hanging like roped Onions. These are Norfolk Bearer, medium-sized, pretty well coloured fruits, either dessert or kitchen; and American Mother, a first-rate dessert kind. Still farther, both kinds nearly always fruit well. The former especially should make a popular market Apple, as the trees do not grow large and therefore occupy but limited space. Nelson Codlin, again, is another moderate growing but even fruiting kind, which deserves a place in any garden as a fine and valuable kitchen kind. *A. D., Belfont.*

—— Permit me to inform "P." that the Royal Horticultural Society and Dr. Hogg are perfectly agreed as to the distinctive characters of these two Apples. It is notorious, however, that they are often confused the one with the other. At the Apple Congress fully one half of the examples were wrongly named. In the schedule of the Royal Horticultural Society to which "P." refers, the two sorts are invited together, so as to prevent disqualification of either if exhibited wrongly. It should read, Apple Golden Noble or Apple Waltham Seedling, so as to have saved "P.'s" peace of mind. *B.*

BEURRÉ CLAIRGEAU.

Why is prominence given to this Pear? Such of your readers as are commencing the growth of Pears will be led astray, and believe that it ought to take the lead in their selection of varieties; but is it ever eaten by a Pear grower? It ripens at the height of the Pear season with a large number of really good Pears, such as Doyenné du Comice, Maréchal de la Cour, Marie Louise, Thompson's, Van Mons' Léon l'Clerc, Comte de Flandres, Passe Colmar, &c., which are always good, while it is never tolerable. It is described in Hogg's *Manual* as of third quality in a list where hundreds are described as of first quality. A Pear of even second quality ought not to be grown now, when the best are as cheap and even more easily obtainable than the worst. The main object of a conference on Pears should be to weed out inferior varieties, not to give undue prominence to a variety absolutely worthless, and pander to a vulgar taste for size and colour, especially when the coarse appearance of the fruit is sufficient to enable a judge of Pears without tasting to form a correct opinion of its quality. In the selection of a well ordered dessert all other considerations should subserve flavour, even to the exclusion of a Pitmaston Duchess by a Marie Louise. *Edmund Tonks.*

## SOLANUM MAGLIA.

IN your observations on the experiments now being conducted at Reading by the Messrs. Sutton & Sons with a view to obtaining a race of disease-resisting Potatos by crossing Solanum Maglia with some of the forms of S. tuberosum, you mention that at Kew the former species had been cultivated for some time, but without producing much result so far as tubers are concerned. Permit me to give you in brief the history of this Potato as far as regards its cultivation at Kew. As has already been stated by Mr. Baker in his paper on the tuber-bearing species of Solanum, the present stock of S. Maglia at Kew are the descendants from small tubers presented to the garden by Dr. Sclater in 1862. It is also stated by Mr. Baker that for the first two years no tubers were produced by the plants when grown in the sandy soil of the nursery garden, but evidently this must mean no large tubers, as some, however small, must have been produced to perpetuate the plant, no seeds having ever been borne by this species under cultivation in this country till Messrs. Sutton last year fertilised its flowers with pollen from a variety of S. tuberosum. From the year 1862 till the present this Solanum has, therefore, been preserved alive at Kew, though as the species was not supposed to possess any valuable tuber-producing qualities its preservation in the collection was all that was aimed at, and consequently no attempt to develope the size of its tubers was made. It seems only fair, therefore, that Kew should be credited with having preserved for nearly a quarter of a century an annual plant which did not produce seeds, and which had long since perished in all other collections to which it had at some time been introduced.

Last year S. Maglia suddenly sprang into prominence as a tuber-bearing Potato, mainly owing to the exertions of Earl Cathcart, who called to his aid Mr. Baker's botanical knowledge. On making a careful study of the several tuber-yielding species of Solanum, Mr. Baker perceived at once that "Darwin's Potato" was not S. tuberosum, but S. Maglia, and that some valuable results might therefore follow from experiments on the tuber-yielding capacity, &c., of this plant. To this end the plants at Kew were planted in prepared soil, but not till after the season was well advanced, so that the yield of tubers was not very encouraging, so far at least as regarded size. This year, however, an early start was made, and that the result has been good you will be able to judge from the specimens of the tubers forwarded to you a day or two ago.

In taking up the plants we noticed that the tubers were none of them at a less depth than 16 inches,

whilst some of them were nearly 2 feet below the surface. In digging them out we found no Potatos of any kind in the top "spit" of soil, but on throwing out a second spit we found a good crop of tubers; some of them resting directly on the gravelly subsoil 2 feet below the surface. The six tubers sent you weighed 18 ounces, the weight of the largest one being 4½ oz. You will observe that the roots on the plants sent along with the tubers are some of them 3 feet long, and that they gradually thicken towards their extremities instead of becoming attenuated, as in the cultivated Potato. These thick roots or "runners" grow in an oblique direction, and from them spring thinner roots, upon which the tubers are developed. This habit of sending its roots down to a much greater depth than is done by S. tuberosum, and, as it were, burying its tubers out of the reach of harm from excessive drought or the diseases which attack Potatos, will probably be of importance in the cultivation of whatever forms may result from Messrs. Sutton's experiments; for on the assumption that the Jensen method for the prevention of the Potato disease is of value, a Potato which naturally buries its tubers a foot or so in the soil would be of importance in the amount of labour it would save, as well as in other ways. In conclusion I may note that I had a few tubers of Darwin's Potato cooked on the same day as they were taken out of the ground, and found them watery, rather "sticky," and with a very perceptible earthy taste. I did not consider them good eating. *W. Watson, Kew.*

## The Flower Garden.

The flower beds will have been put in order for the winter, and, where bulbs have been planted, will require a sharp look-out for rats and mice, or they will soon destroy them before it is noticed. I find by experience it is far best to put down mouse-traps as soon as the bulbs are planted, prevention being better than cure, for once they get a taste of the bulbs they are not so easily caught in traps. Any beds that are not intended to be furnished for the winter should be manured and dug or trenched, so that the soil may get the full benefit of the frost. All the turf should be levelled and re-turfing done where required; it should be rolled as often as time will permit, and if lime and wood ashes are strewn over it the turf will be greatly improved next season. This dressing will kill the moss and destroy grubs, and the grass will come finer, and keep a good colour. Leaf raking and sweeping occupy the greatest part of the time till the leaves are all down. The leaves should be taken care of for leaf-mould, as it is of great value. When the leaves are all down, the shrubbery beds and borders should be dug or forked over. Sickly plants, if any, should be looked to, and fresh soil or manure added as the case may be. American shrubs thrive best in peat and leaf-mould mixed. *W. Smythe, Basing Park, Alton.*

## Fruits Under Glass.

### PEACHES AND NECTARINES: STARTING THE HOUSE.

If these fruits, which rank so high in the limited number of choice kinds for the dessert in the months of May and June, are to be ripe by that period, it will soon be time to encourage growth in the trees that are intended for the purpose. My custom is to close the early peachery about the middle of November, and during the first fortnight to use no fire-heat whatever, unless frost should demand it, which is not very often the case at this time of the year; on favourable occasions the house is freely aired, and the surfaces about the house, if they get dry, are moistened occasionally, and the trees on sunny days are sparingly syringed. About December 1 we begin with the usual course of forcing operations, and keep the house as near to 50° as possible at night, and 55° or 60° during the day by artificial means, if necessary; and if this is increased by solar aid we ventilate slightly at 65°, and let it range to 75°, and close up when it falls to 65° again. At this time the trees are lightly syringed; the practice of syringing the trees often and heavily before growth is excited I am strongly opposed to, as being somewhat detrimental in its effects; a proper state of salubrity had far better be maintained by moistening available surfaces about the house than by the other means. It is very essential that the roots of the trees should be thoroughly moist now, and if any doubts exist on this matter it should be ascertained practically. The foregoing treatment should be enforced until the close of the current year, by which time the trees will be fast unfolding their blossoms. *G. T. Miles, Wycombe Abbey.*

## The Hardy Fruit Garden.

### PLUMS.

Plums are at all times a welcome addition to our dessert fruit, therefore I would advise every one to plant a number of these on a south wall, also some of the fine later varieties on east walls, and the latest varieties on a north aspect. I would recommend cordon trees of these being planted, as they come quickly into bearing, and occupy little space on the walls; they may be planted 18 inches apart. For a north wall I should advise such varieties as Wyedale, Belle de Septembre, Reine Claude de Bavay, and other late keeping sorts. For growing on a south wall, Green Gage, Oullin's Golden Gage.

Fruit stores should be looked over twice a week, and all decayed fruit at once removed; air may be admitted on fine warm days. All vacant spaces on the walls should be filled up at once with young trees; these cost little when bought small, and they can be trained in any form desired. *J. Smith, Mentmore, Bucks.*

## The Kitchen Garden.

### SEED POTATOS AND FORCING.

The general stock of tubers should occasionally be examined, in order to ascertain that none of the early varieties are making injurious growth, through being stored too thickly, or through being in a too warm and close atmosphere. Tubers of early varieties which show signs of commencing growth, and which will soon be required for forcing in pots and frames, may now be placed in shallow boxes in light soil in order to make a little corresponding root-action. The boxes can either be placed in a light airy frost-proof house, or be put into a little warmer temperature to start into steady growth to supply the sets for pots or frames as soon as it is thought fit to start an early batch. Even where pot cultivation is relied on to produce the first supply, it is best to start the tubers in boxes in the same way as is usually done for frame-grown Potatos, as by so doing the tubers with the strongest growth may be selected, and another important point can be attended to prior to potting, *i.e.*, the reduction of the growth on each tuber. Two growths are quite sufficient for a 10 inch pot, which should be only half filled with soil to commence with. The best guide to successful work with pot cultivation (the same as in frames), is to start gently, aiming at short sturdy growth, and keeping the pots as near the glass as possible.

When the growths are about 1 inch above the rims of the pots, they should be earthed-up, leaving half an inch for watering. If well grown one tuber with two shoots in a 10-inch pot will produce a dozen young ones of an equal size. If more than two growths are allowed, the young tubers may be more numerous, but not so profitable in the long run, neither will they be fit for use quite so early, which is a consideration in favour of restricting the amount of haulm.

The beginning of December is a good time to plant an early frame, which at that early date for planting should be heated by hot-water pipes. The sets for such a frame may be placed in boxes as before recommended, at once, and started in the early vinery. The materials to form the hotbed should be collected, and should consist of leaves and short litter, which must be turned several times before it enters the frame. After the hotbed has been made several days, place on it 1 foot of light soil a couple of days before planting the tubers, which should be planted 4 inches deep. Nothing will be gained by crowded planting; the sets may be placed 1 foot apart, in rows, from 14 to 16 inches asunder.

In some establishments early forced Potatos are appreciated quite as much as any kind of forced fruit, and where a heated frame cannot be devoted to them at least a limited supply may be obtained from pots grown in early vineries and Peach-houses, and the haulm of the Potato is not so subject as many other plants to the attack of injurious insects, which are at times so difficult to prevent from infesting the permanent occupants of the houses.

### GENERAL WORK.

When frost threatens, the plots of early Broccoli should be looked over, and any with the hearts well formed, and likely to be injured, should be lifted with a good ball of earth, and placed under glass, or in some position where they can be effectually protected from injury.

Endive now out-of-doors three-parts grown should be lifted without further delay, and placed in frames or cool houses or boxes, from whence a few roots at a time should be placed in the Mushroom-house, or dark warm cellar, to blanch as required. Young plants of Endive are perfectly hardy, but when the hearts of the plants begin to develope they soon get browned by sharp frosts. Mustard-and-Cress should now be sown under glass at intervals as required.

Where young Onions are required for salad purposes through the winter, and the autumn-sown Tripolis are not thick enough to allow of much thinning out, some should now be sown in boxes in light fine soil in a brisk heat near the glass. By this method a supply, just the proper size, may be easily kept up, by sowing once a fortnight or three weeks until the spring Onions come in out-of-doors. The China Rose Radish is now coming in well out-of-doors; the beds should be protected with mats on the approach of sharp frosts.

Some Chicory (a few roots are sufficient at a time) should be lifted, and introduced into the Mushroom-house to blanch. It will now be advisable to lift the whole of the crop of roots, and relay them thickly together a little deeper in the soil in a well-drained part of the garden. *G. H. Richards, Somerley.*

## The Apiary.

### WAX EXTRACTING.

In all apiaries, even in small ones, there will always be more or less of comb which is unfit to use again. Do not waste a bit of it, and do not lay it about, as it will only harbour the wax-moth. If you have a large apiary it is quite well worth the money to have a machine. The quality of the wax obtained from a machine is very superior, and a good price can always be got for it.

If a machine is used you cannot do better than have one of Gerster's, or one made after his pattern. This consists of a perforated tin basket standing on three pieces of metal in a metal dish, and about an inch from the bottom of it. All this is put into a cylinder not perforated, and there is a spout connected with the dish. When you want to melt some wax, take the perforated cylinder and fill it with wax, and insert it in the other cylinder, and put the cover on. Then place this over a vessel with water, and put it on a fire. The steam passes up from the water when it boils, and the heat of the steam penetrates the basket and the wax oozes through the basket, and runs down into the dish, and out at the spout mentioned before. Nothing can be purer than the wax which comes out, and all useless refuse is left in the basket.

If you have not enough wax for a machine, or do not wish to buy one, there are various other ways of getting the wax out, but there is none better than Mr. Hooker's. Take all the comb you want to melt, and put into the copper, and ram it down tight. Take a hoop that will fit into the copper, and fit a cheese-cloth over it. This must be kept down by some means or other, and is best done with sticks wedged against the ceiling. Then fill your copper with water and light the fire. When the water boils the wax will ooze through the cloth and rise to the surface. You must use a little judgment not to boil the water longer than sufficient to melt the wax. Let the fire go out, and when the water is cool a cake of beautiful wax will be found on the surface. This can be taken up and melted again in some vessel, and poured into moulds or basins. There will be nothing but refuse at the bottom of the copper. Throw this right away, some distance from the hives, as it might lead to robbing. This is a much better way than boiling the wax in bags, and it is done much quicker. *Agnes.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Nov 16 | Sale of Plants and Bulbs from Holland, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Tewkesbury Chrysanthemum Show (two days) |
| TUESDAY, | Nov 17 | Grand Show of the Royal Botanic and Horticultural Society, at Manchester.<br>Yeovil Chrysanthemum Show<br>Sale of Roses, Plants, Bulbs, &c., at the City Auction Rooms, by Protheroe & Morris |
| WEDNESDAY, | Nov 18 | Burton-on-Trent Chrysanthemum Show (two days).<br>Bristol Chrysanthemum and Fruit Show (two days).<br>Birmingham and Midland Counties Chrysanthemum Show (two days)<br>Sale of Plants and Bulbs from Holland, at Stevens' Rooms. |
| THURSDAY, | Nov 19 | Colchester and East Essex Chrysanthemum Show (two days).<br>Hull and East Riding Chrysanthemum Show (two days).<br>Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Sale of a Collection of Orchids in Flower, at Stevens' Rooms |
| FRIDAY, | Nov 20 | Ealing Chrysanthemum Show (two days).<br>Sheffield and West Riding Chrysanthemum Show (two days).<br>Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Nov. 21 | Derby Chrysanthemum Show, and 23d.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Sale of Plants and Bulbs from Holland, at Stevens' Rooms. |

THE adjourned meeting convened by the Council of the Royal Horticultural Society to consider the propriety of inaugurating an INTERNATIONAL EXHIBITION on a large scale in 1887 was held on Tuesday last under the most depressing conditions. Soil and atmosphere alike seemed muddy. Fog prevailed, light was not, drizzling rain fell without intermission. To add to these uncheering surroundings the place wore an appearance of general dismemberment and dilapidation. The "Inventions" Exhibitions was closed the night before, and already confusion seemed to reign supreme. Disjointed machinery, dismantled stalls, engines swathed in wrappers, old packing-cases, others new, some in process of construction, and *débris* of all kinds cumbered the ground. Rolling trollies, ceaseless hammers, grating saws, contributed their share to the general din, broken now and again by the discords elicited from some musical instrument thus audibly complaining of the indignities to which it was subjected. Amid such surroundings was the meeting held. In one sense it was cheering. The ideas of continuity and rejuvenescence suggested themselves amid the gloom and clatter, just as they did when the citizens of Chicago met amid the smoking ruins of their destroyed city to enact that it should rise from its ashes. It was hardly to be expected under such conditions that the meeting should be enthusiastic, but at any rate it was unanimous, and no voice was heard to deny the proposition that it was desirable to hold such an exhibition as proposed in 1887; no alternative proposition was offered, and no objection was raised to the plan of action proposed. The Council attended in full force, headed by its President, Sir TREVOR LAWRENCE. The meeting, if not large, was at least more representative than on the former occasion. Representatives of metropolitan and provincial societies were present. Men of leading in the provinces were there in considerable numbers, some of whom, as Mr. FINDLAY of Manchester, Mr. HARRISON of Leicester, Mr. WATTS, and Mr. CHEAL of Crawley, took part in the discussion, and, as we have said, though some did not vote at all, not a dissentient voice was raised. The metropolitan nurserymen, with few exceptions, held their peace and made no sign. We do not blame them for this. So much work and anxiety must necessarily fall on them, if the proposal is carried out, that we are not surprised that they should hesitate. But we do feel strongly that if any present entertained serious objections to the proposal, they should at once have given expression to their opinions. The meeting was called for that very purpose, and by their silence, by their abstention from active participation, they have lessened their power to object to whatever may be done in future. An honest display of negative opinion would have been as valuable in its way for the purpose of the meeting as any manifestation of approval. Be this as it may, the general principle, that it is desirable to hold such an exhibition, may now be held to be established beyond dispute. The explanations given by Sir TREVOR LAWRENCE as to the negotiations with the Commissioners, and as to the relative position of the Council and the Commissioners, were clear and to the point. They did not pledge anybody to anything, but they showed that the interests of the Commissioners were bound up in the success of the scheme, and that both Commissioners and Council believe and are desirous that something should be done. The scope of the exhibition was defined in general terms in the same lines as those we had already sketched out in our previous articles on this subject, and the difficulties in the way of finance and organisation were shown not to be insuperable. After Sir TREVOR LAWRENCE'S explanations the coast seemed clear for a public avowal that such an exhibition was desirable, and this accordingly was the text of the first resolution, proposed by Dr. MASTERS, seconded by Mr. WATTS, and carried without a dissentient voice, after some remarks by Mr. HARRISON, of Leicester, and others. The second resolution, proposed by Mr. SHIRLEY HIBBERD—to the effect that, provided the Commissioners gave adequate assurances of harmonious co-operation and support, the gardens at South Kensington were the most suitable locality for the purpose—was also carried unanimously. The seconder, however, Mr. BRUCE FINDLAY, after saying that he would promote the object to the best of his power in his own neighbourhood, very properly pointed out the risks attaching to a system of dual control—a warning which those who remember the misfortunes of the Society, in its relations to the Commissioners in past years, will do well to bear in mind. The existing Council as a Council is hardly aware of the fact that the present condition of the Society is really due to the ill-assorted union of the two bodies in past years. Still, as we have before said, circumstances are widely different now, and the Council, the strongest and best for many years, is not likely to be kept in the dark as to facts of past history, and the necessity for caution in the future.

The remaining resolutions, spoken to by Mr. W. PAUL, Mr. FRASER, Mr. ELWES, and others, with incidental suggestions as to the method of carrying out the proposal, were the necessary outcome of the adoption of the preceding resolutions; and before the resolution was adopted to adjourn the meeting, in order to allow of further negotiations between the Council and the Commissioners, was put to the meeting, the present state of the case was most lucidly put by Professor MICHAEL FOSTER, so that there might in future be no misunderstanding as to the feeling of the meeting and its knowledge of the bases of negotiation with the Commissioners. After Professor FOSTER'S clear statement of the state of the case, there was ample opportunity for any objection to be raised, but as no dissentient note was sounded, it may be taken for certain, as we have stated, that the general body of horticulturists, as represented at the meeting, are pledged to the general principle, but in nowise tied to details; and that the Council, backed by the unanimous votes of the meeting are empowered to open up further negotiations with the Commissioners if assurances on either side are forthcoming.

Sir TREVOR LAWRENCE, in bringing the proceedings to a close, replied to a few objections that had been raised in the course of the debate, and pointed out the great advantages to the trade of the country that must ensue from such an exhibition; and expressed his belief that if the horticultural body could now lay a foundation there would be no lack of guarantees as to finance. As to organisation, the last three exhibitions had been worked under a system of dual control without friction, and as the interests of all parties in this matter were identical and all were interested in its success, he did not apprehend any serious difficulties on that score. In point of fact, the difficulties and obstacles which look formidable at a distance seem no greater than Englishmen are accustomed to surmonnt, without much fuss, any month in the year. The meeting was ultimately adjourned to allow of further negotiations being entered upon with the Commissioners, no one being in the meantime pledged to anything more than the assertions that such and such things, under such and such conditions, are desirable.

—— THE PROPOSED INTERNATIONAL EXHIBITION.—The following is the text of the resolutions carried at the meeting on the 10th inst. Dr. MASTERS, who had moved the adjournment of the last meeting, moved the first resolution, which was as follows:—

"That in view of the great and increasing importance of horticulture, and in order to preserve the high reputation in which British horticulture is held by other nations, it is desirable to hold at no distant date an International Show and Congress of Horticulture in the widest sense of that term; and that the year 1887 being the jubilee year of Her Most Gracious Majesty the QUEEN, would be the most fitting time for such an undertaking."

This was seconded by Mr. WATTS, of Wiltshire, and carried unanimously. The second resolution was proposed by Mr. SHIRLEY HIBBERD:—

"That should Her Majesty's Commissioners of 1851 be prepared to afford adequate facilities, such a show and Congress would be most advantageously held on some of the Commissioners' grounds at South Kensington, provided that any use which the Commissioners propose to make of the rest of the grounds during the year 1887 be found to be in harmony with the character of the projected show and Congress."

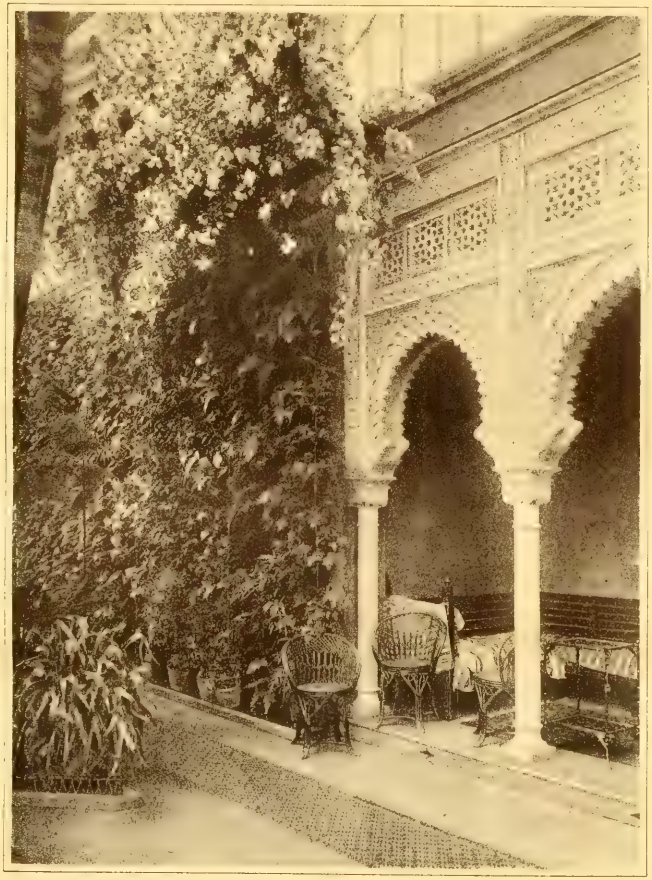
This was also carried unanimously. The third resolution was proposed by Mr. WM. PAUL, seconded by Mr. A. H. SMEE, and carried unanimously:—

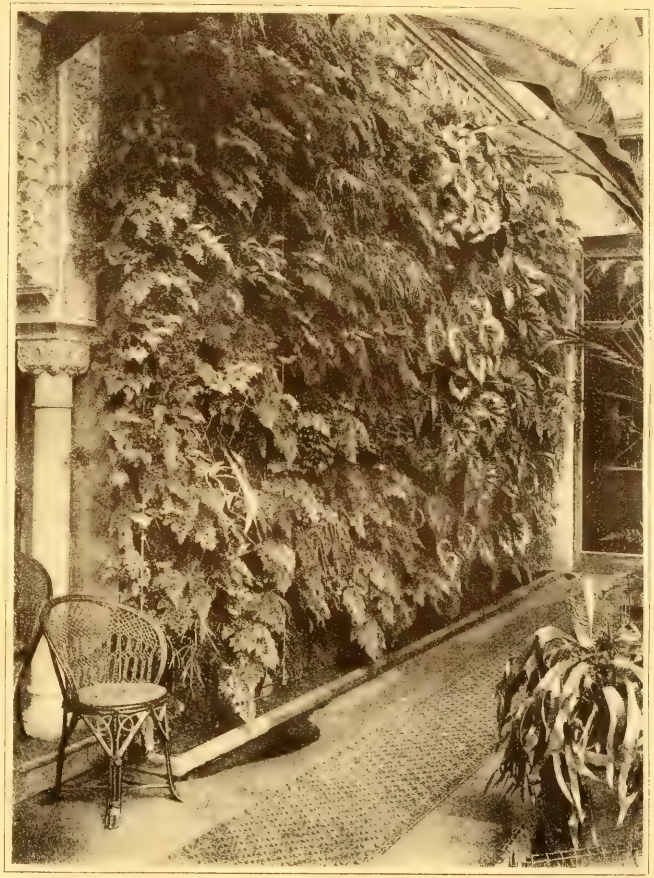
"That this meeting requests the President and Council of the Royal Hoticultural Society to take measures to ascertain the views of the Commissioners of 1851 on the matter, and assures the President and Council that should the proposals of the Commissioners be of such a nature as to afford reasonable hope that the show and Congress may be carried out in a manner worthy of British horticulture, no effort shall be wanting on the part of those present to secure the success of the undertaking."

The fourth resolution, moved by Mr. HARRISON of Leicester, and seconded by Mr. CHEAL of Crawley, was as follows:—

"That this meeting do now adjourn till such time as it shall be summoned by the President and Council of the Royal Horticultural Society, in order that the results of the negotiations with the Commissioners of 1851 may be laid before it."

—— CONSERVATORY AT CHERKLEY COURT.—In our number for June 13 of this year, in which we gave a view at Cherkley Court, Leatherhead, the residence of ABRAHAM DIXON, Esq., and also one of the fine conservatory, we drew attention to the pleasing manner in which the walls on the one side were clothed with Ferns and foliage Begonias; we now avail ourselves of the opportunity to illustrate this rather difficult subject, as we are sure many of our readers will be able to find in their greenhouses and conservatories, walls and odd corners which they would fain change from their present blank state into as near an approach as possible to those lovely combinations of foliage the subject of our illustration (see supplement). The arrangements for producing such effect are not difficult to command—an open wire trellis fixed 2 or 3 inches away from the wall, and filled in with peat or other fibry soil into which the plants are to be planted. Maidenhairs of all kinds take well to such culture, and the foliage Begonias assume a much more beautiful aspect and exhibit their lovely metallic





INK PHOTO SPRAGUE & Co LONDON

VIEWS IN THE CONSERVATORY AT CHERKLEY COURT, LEATHERHEAD.

colours much better when grown in this way than they do in pots; some of the oldest varieties, such as Rex, Marshalli, and Queen Victoria, are still unsurpassed for massive foliage, but Louise Chrétien, Berthe Frontier, Fire King, and others of their section among the newer introductions, are very lovely. At the top of our illustration showing the models of Alhambra arches, the Bougainvillea glabra will be seen in flower; grown as it is at Cherkley Court, it is one of the brightest and most lasting trailers we have.

—— Sclerotia of Penicillum.—We are requested by Mr. W. G. Smith to publish the following letter, the transmission to us of which has been accidentally delayed :—

"I am asked on p. 305 to describe with as much detail as possible how I obtained these structures. I have found them produced spontaneously, and I have had no failures. I saw them first inside Gorgonzola cheese, and in this material it was easy to make sections. I afterwards twice saw them inside very old and dry Potatos. I last saw them inside a dry capsule of Papaver somniferum. I obtained them artificially as follows (I think the plan is not the same as Brefeld's, but I have not Brefeld by me for reference) :—I took six slices of coarse crummy bread for three experiments. These six slices I dried in an oven, with the idea of killing any spores that were not wanted, and that might possibly be in the cavities of the bread. When the slices of crummy bread were quite dry, I slightly damped one surface only of each with distilled water; on the damp surfaces I placed (with a dry camel-hair brush) spores of Penicillum. I then placed the damp spore-infected surfaces together and made three Penicillum sandwiches, quite dry outside and slightly moistened inside. Each sandwich was wrapped in tissue paper tied with twine and then shut up for a week in a box in the dark. This was with the idea of getting rid of any superfluous moisture. After a week, and when the spores had germinated, I took six pieces of thick glass and squeezed each sandwich as tight as possible between two pieces of the glass in a carpenter's vice. I then glued paper over the ends of the glasses, so that the slices of bread looked like pictures in air-tight frames—a picture behind and a picture in front. The frames were then put in a dark box again and kept in a dry place. They were opened at the end of one, two, and three weeks, and the sclerotia were found abundantly in the bread cavities of the examples which had rested longest."

—— Potatos.—Mr. Thiselton Dyer exhibited at the Linnean Society, on November 5, specimens of Darwin's Potato (Solanum Maglia), grown at Kew, the weight of twelve tubers being 28 oz.; also the "Papa del oso," Bear's Potato (S. tuberosum var.), grown out-of-doors, from tubers received from Dr. Ernst, of Caracas, who obtained them from Merida, where they are found wild.

—— "The Asclepiad" is a quarterly journal entirely written by Dr. B. W. Richardson. It is devoted particularly to medicine and allied subjects. Dr. Richardson's biographical notices are well written. In the present number the life of Leeuwenhook is sketched. The Dutch physiologist was one of the first to use the microscope, and but little has been generally known of his career. From what Dr. Richardson tells us he was Bedell or Town Sergeant of Delft, and occupied his leisure with those experiments and researches that have made his name famous.

—— Kohler's "Medicinalen Pflanzen."—The last part of the reissue contains coloured figures of Cochlearia officinalis, Malva silvestris, Lavandula vera, Platanthera bifolia, Digitalis purpurea, Rhamnus cathartica, Matricaria Chamomilla. The plates are so superior to any hitherto published in this country, and so much less expensive, that we call attention to them as very serviceable even to those not familiar with the language of the text.

—— "Popular Gardening" is the title of a new American publication issued at Buffalo every month at the cost of 6 cents (3*d.*) for each number. Its contents are varied and bright, and the paper looks as if it meant to succeed, and we have no doubt it will.

—— "The Covent Garden Gazette."—This new venture, to be published at one penny weekly, is announced as a representative journal for agriculturists and fruit-growers, and for florists and market salesmen. It is intended to give "actual practical information on current prices and supply and demand, so that he [the grower] may not be in the dark when sending consignments to market." As this information is much needed, but in our experience not easy to get, we shall rejoice if our new contemporary succeed in satisfying the natural requirements of growers and consigners in this matter. The French correspondent notes that "if trade in England, owing to Free Trade, is bad, in France, with Protection, it is a thousand times worse." In spite of the depression, our contemporary writes upon most topics in a cheerful frame of mind, and we can but wish that it may be maintained.

—— Our Almanac for 1886.—Secretaries of provincial and town horticultural societies are invited to send us, as soon as possible, the dates of their meetings and exhibitions during the ensuing year, so as to ensure their insertion.

—— Apple and Pear Congress, Edinburgh.—At a meeting of the Congress committee of the Royal Caledonian Horticultural Society, held on the 11th inst., it was announced that intimation had already been received from many contributors throughout the United Kingdom of their intention to exhibit at the Congress, and that the number of dishes already promised, amounted to upwards of 7000, although many of the largest contributors have not yet made their entries. These entries close on Monday, the 16th inst., and all those who intend to send contributions of Apples and Pears should forward the same without delay, so as to enable the committee to make proper arrangements for the display of the exhibits; which promise to be so numerous as to tax even the immense capacity of the Waverley Market.

—— Ghent Horticultural Society.—At a meeting held last Monday the following awards were made :—First-class Certificates to MM. Jacob-Makoy & Co., Liège, for Bouvardia Hogarth fl.-pl.; to MM. Vervaet & Co., for Cypripedium vexillarium and Odontoglossum vexillarium; to M. Aug. Van Geert fils, for Ptychosperma Van Geerti. Cultural Certificate to M. Jules Heye-Leysen, for Cypripedium Spicerianum. Commendations for novelty to M. L. Spae-Van der Meulen, for Encephalartos *Katzeri;* to M. Ed. Pynaert, for Anthurium Prochaskyianum; to MM. Desbois & Co., for Begonia Madame Henri Gache. Cultural Commendations to M. Ad. d'Haene, for Dracæna Baptisti; to M. Bernard Spae, for Ruckia Ellemetti.

—— New Sweet Pea.—In addition to the new varieties of Sweet Peas of Mr. H. Eckford's raising which Mr. W. Bull will distribute, Mr. J. C. Schmidt, of Erfurt, announces one of his own raising, named Vesuvius. It is described as being quite distinct in character, the large upper petals are brilliant carmine-rose, shading to a deeper hue, till it ends in a glowing purple throat; the whole is sprinkled with dots of crimson. The lower petals are of a dark velvety violet, shading off into lilac towards the edge.

—— Phylloxera Laws.—The following official document has been forwarded to us for publication :—

"Bucharest, October 15, 1885.

"My Lord,—I have the honour to report that a notice has been inserted in the *Official Monitor* to the effect that, in consequence of the appearance of Phylloxera in Roumania, the Hungarian Minister of Commerce has forbidden, until further notice, the importation into Austro-Hungary of Vines, Grapes, trees, shrubs, and other plants, and generally of all green or dried plants, fruits, vegetables, and other horticultural products of Roumania.—I have, &c.,

(Signed) "Percy Sanderson.

"The Marquis of Salisbury, K.G., &c."

—— Influence of Light on Transpiration.—On December 3 Rev. G. Henslow is expected to make a communication to the Linnean Society, on the influence of the different rays of the solar spectrum on the transpiration of plants, a subject on which he has been known to have been experimenting for several years.

—— Passiflora kermesina.—This is a charming subject just now in one of the plant-houses at Gunnersbury Park, Acton. It is trained along a bar in the apex of the span of the roof, and its bright and attractive blossoms are particularly attractive and numerous. It is a lovely free growing slender kind, with trilobed dark green leaves; the flowers are abundantly produced. As an autumn and winter flowering type it can be highly commended.

—— Linnean Society of London.—A meeting will be held on Thursday, November 19, at 8 P.M., when papers on the following subjects will be read :—1. "On the Perignathic Girdle of the Echinoidea." Professor P. M. Duncan. 2. "Anatomy of Sphærotherium." Geo. C. Browne. 3. "Immature Stages of Tegeocranus cæpheiformis." A. D. Michael.

—— Flora of the Peruvian Andes.—A paper on this subject by Mr. John Ball was read at the Linnean Society, November 5. His statements referred chiefly to the western slope of the Cordilleras. From the collections made and other data so far as this region of Peru is concerned, it may confidently be answered that the limit of alpine vegetation has been placed by previous writers on the subject as far too low. In the present instance there can be no serious error as to heights, seeing these are based on those of the railway engineers. The explanation of this relatively high extension of the temperate flora depends on the peculiar climatical conditions. Rain occurs but sparingly, the nights are cool, but frost scarcely known; whereas in the plateau region eastward storms, heavy snow and frost are frequent. The vegetation of the region visited Mr. Ball divides into a subtropical dry zone from coast to 8000 feet, a temperate zone reaching to 12,500 feet, and an alpine zone upwards to 17,000 feet above the sea-level. As regards the proportion in which the natural families of plants are represented in the Andean flora, the Compositæ amount to nearly one-fourth of the whole species, next to these the grasses about one-eighth, the Scrophularineæ supply 5 per cent., while Cruciferæ, Caryophylleæ and Leguminosæ each are represented by about one-thirtieth of the whole. The Cyperaceæ are conspicuous by their absence. A remarkable feature is the presence of four Crassulaceæ. If the proportions of the endemic genera and species be taken as criteria, then, as far as materials admit, the Andean flora appears to be one of the most distinct existing in the world. Mr. Ball agrees with those who think it probable that the south polar lands constitute a great archipelago of islands. To the region in question he is inclined to refer the origin of the so-called Antarctic types of the South American flora.

—— Royal Meteorological Society. — At the ordinary meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 18th inst., at 7 P.M., the following papers will be read :—"The Helm Wind of August 19, 1885;" by William Marriott, F.R. Met. Soc. "The Typhoon Origin of the Weather over the British Isles during October 2, 1882;" by Henry Harries. "Note on the Principle and Working of Jordan's Improved Sunshine Recorder;" by J. B. Jordan and F. Gaster, F.R. Met. Soc. A committee has been appointed to take into consideration the question of the supposed diminution of water supply and the suggested increase of floods. The committee is desirous of obtaining as much information as possible, and will therefore be very glad to receive any data that may have any bearing upon the subject, and showing the past and present state of the water supply, either from gaugings of wells or springs; the height of flood marks in rivers, streams, and lakes; the records of low-water periods; or any historic data which may have been collected relating to the subject. Information relating to the period between 1825 and 1835 would be extremely valuable, in order to enable the committee to fill up a gap in the diagram accompanying the report in the *Quarterly Journal* for July, 1885. All communications should be addressed to the Assistant Secretary, Mr. W. Marriott.

—— "Vorlesungen über Bacterien."—Botanists and others interested in the study of Bacteria, whether as lowly organised fungi assuming various forms, according to the condition in which they grow, or in relation to the various diseases known or suspected to be connected with their presence, will be glad to hear Professor De Bary's views on the subject. His lectures are published separately, and may be had of Williams & Norgate. Plant diseases attributable to these organisms occur in the Hyacinth (the yellow rot, described by Wakker, see *Gardeners' Chronicle,*

vol. xxiii., p. 14); the Pear blight, described by BURRILL, *Gardeners' Chronicle*, November, 1885; the erosion of Wheat grains, observed by PRILLIEUX, and the "Nass faule" of the Potato, described by REINKE and BERTHOLD: see *Gardeners' Chronicle*, p. 14, vol. xxiii.

—— DR. CARPENTER.—The announcement of the death of this gentleman, under very painful circumstances, will be read with general regret. Dr. CARPENTER'S career is an instructive one. Educated as a physician he early in life renounced the practice of his profession for the pursuit of pure science. His works on the Physiology of Men and Animals and on the Microscope and its Teachings gained for him a high reputation, but little profit. Hard work of excellent quality brought but little remuneration, even although he became as well known to the general public as to the scientific few. After several years he obtained the office of Registrar to the University of London, a position which, while it afforded him an adequate income, brought him into contact with a large number of influential men, and most of the foremost of their time in matters intellectual. Easy circumstances by no means benumbed his faculties so far as scientific work was concerned, and Dr. CARPENTER continued to the end to work in his favourite departments of research, and took a leading part in the dissemination of scientific truths among the public. His services to the University in particular, and to science in general, were such as to ensure for him the respect due to high principle and honest, conscientious work.

—— "HORTICULTURAL DIRECTORY" FOR 1886.—We notice with much satisfaction this useful publication for next year, published by Dr. HOGG, at the *Journal of Horticulture* Office, 171, Fleet Street, E.C. The book contains the usual information with regard to gardeners addresses, brought as far as possible up to date.

—— ANEMONES. — Messrs. J. CARTER & Co. have sent us some flowers of the strain of Anemone "St. Bridget Crown," cut from plants grown in the open ground from seed sown in March. The flowers were of bright colours and large size. Certainly it is pleasing to be able to have Anemones in flower at this season, especially with such a variety of colours as we noticed in these flowers. There were purple, crimson, and other shades of red, whilst one had petals of delicate pink finishing off in white, and another had this order of the colours reversed.

—— ANGRÆCUM LEONIS. — Some uncertainty prevails as to the mode of spelling this word. We have seen it spelt Leoni, Leonei, and Leonis. As the name was given in compliment to M. LEON HUMBLOT, we imagine Leonis to be the more correct form.

—— PASSIFLORA VIOLACEA. — This beautiful Brazilian Passion-flower is figured in the *Revue Horticole* for October 16. It has palmate, three-lobed leaves and very long peduncles bearing a large flower about 3 inches across, the petals lilac, the coronal threads as long as the petals, curved, blue at the base, white at the tips. The sepals are provided with long, leafy points. It is remarkable that so beautiful a species should not have been introduced previously. It will be distributed by M. BRUANT, nurseryman, Poitiers.

—— BULB CULTURE IN HOLLAND.—We quote the following details from the *Illustration Horticole*: —In thirty parishes in the neighbourhood of Haarlem alone, an area of upwards of 595 hectares is devoted to cultures of this kind, viz., Hyacinths, 231 hectares; Tulips 205, Crocus 74, Spiræa, Hoteia, and Dicentra collectively, 22 hectares; Narcissus, 9; and miscellaneous bulbs, 52 hectares. A hectare is about equal to 2½ acres.

—— We hear that the whole of the stock of plants of the Cape Wax Climber, Macroloma lineare, has passed into the hands of Messrs. J. CARTER & Co. for distribution.

—— CHESTER.—The new Mayor of this ancient city is Mr. GEORGE DICKSON, senior partner in the old firm of JAMES DICKSON & SONS, nurserymen.

—— GARDENING APPOINTMENTS.—Mr. W. A. COOK has been appointed Gardener to W. WILLS, Esq., Holme Wood House, Peterborough.—Mr. R. H. HOLLOWAY, late Foreman at Headfort House, Kells, Co. Meath, has been appointed Gardener to Lord CASTLETOWN, Granston Manor, Abbey Leix, Queen's County.—Mr. HENRY REED, late Foreman to Mr. OLLERHEAD, Gardener at Wimbledon House Gardens, has been appointed Gardener to Mrs. MEINERKZHAGEN, Belmont, Wimbledon, Surrey.

## CHRYSANTHEMUMS, ETC., AT MESSRS. VEITCH & SON'S, CHELSEA.

THE display of Chrysanthemums at this nursery is very fine, and although the majority of the plants require a little more time to perfect their blooms, the collection will repay a visit from now till some time to come. Only the most approved varieties are grown, and of these the following were the best:—Cullingfordii, the new crimson, orange centred variety, was in fine order, and proved itself worthy of a place in the best of collections; Flambeaux, somewhat similar, but hardly so large in the bloom; Mrs. J. Crossfield, a most attractive incurved pink-blush; La Charmeuse, a pretty light purple flower, with tips of petals forked; Francis Delaux, a grand dark crimson; Carpet, deep brick-red, bronze centre; Isidore Feral, bright pink—Japanese; Mons. Henri Jacotot and Mons. Mousillac, Boule d'Argent, a pleasing pink variety; Beauté des Jardins, a good crimson; Mons. Roux, somewhat similar to F. Delaux; Brise du Matin, beautiful flesh-pink; F. A. Davis, the best dark; La Tendresse, orange-pink, small but distinct; William Robinson, bright orange; Bronze Jardin des Plantes, a grand old variety that ought to be in every collection; George Gordon, a good dark, Mons. Burnet, a large light pink flower; Mons. Burnet, a large light pink flower; J. Laing, a fine flower, brick-red, with orange; Perle des Beautés, a pretty llittle dark symmetrical variety; Criterion, fine large orange-yellow; some fine blooms of Dr. Sharpe.

Amongst the new Continental varieties the following were the best. The colours of new varieties are becoming so varied that one is quite at a loss to satisfactorily describe them. The best of these were Mdlle. Melanie Fabre, deep lilac, good petals; M. Freeman, somewhat similar, but lighter; l'Aube Matinale, a fair sized flower, resembling no colour in our vocabulary, but corresponding to the "crushed Strawberry" of milliners, &c.; Lakine, a good deep orange; l'Adorable, large bronze; Souvenir de Haarlem, a most beautiful flower of a deep flesh-pink colour, finely curved petals, lying well together, and forming a compact bloom of great excellence; M. A. Vilmorin, a good flower, introducing a new shade amongst the "Buffs." While visiting the Chrysanthemums time should be found for a run round the houses devoted to Carnations, Bouvardias, &c., where the visitor will be amply repaid. In an intermediate-house was a large batch of those old attractive favourite plants Lasiandra macrantha and L. macrantha floribunda, the latter being the more prolific in bloom and dwarfer and of better habit, most of the plants being about 8 inches high with at least five fully developed buds on them. In the cool hard-wooded houses too was a fine lot of Crowea, a greenhouse plant of great value for the present season, its pretty pink star-like flowers and fine dwarf compact habit stamping it as a grand decorative plant. The greenhouse Rhododendrons were as usual in vigorous health with a fair sprinkling of bloom.

To describe the collection of Orchids would occupy too much space, many fine varieties being in bloom, and the Pitcher-houses were a sight worth travelling a long way to see.

### W. CUTBUSH & SONS, HIGHGATE.

A remarkably fine collection, neatly arranged in an improvised canvas house, the soft light inside of which shows the colours of the blooms off to perfection. The plants for the most part are very dwarf, with abundance of robust dark green foliage, but we were rather too early to see them at perfection, the cold bracing air of Highgate Hill having delayed the progress of most of the varieties considerably. The display of bloom is, however, very good, though nothing to what it will be in a week or two. A glance at the following list of names will indicate better than words the choice character of the collection:—Margot, White Globe, Julia Lagravere, one of the best of the old darks when well done; J. Delaux, Nil Desperandum, Lady Margaret, Prince of Wales, Gloire de Toulouse, Orach, Peter the Great, James Salter, Geo. Glenny, Baronne de Prailly, Golden Rhine, a very pretty little yellow; grand examples of Elaine, Mons. Astorg, Triomphe du Nord, Mrs. Dixon, Lady Talfourd, Mrs. G. Rundle, Source d'Or, very fine in form and colour; Dr. Macary, a very pleasing variety, pink with white; Henry Jacotot, Golden Jardin des Plantes, a fine yellow; Duchess of Albany, La Charmeuse, Heloise, L'Africaine, Golden Christine, Lord Beaconsfield, R. Ballantine, very fine. Fine blooms of Prince Alfred, Dr. Sharpe, General Bainbridge, a very fine, slightly incurved bronze, though rather flat; Madame B. Rendatler, Flambeau, a grand dark; Striatum, Perfection, Marquis of Lorne, a distinct orange-bronze; Albert, fine bright brick-red coloured flowers; Japanese Venus, Meteor, Garnet, Helvetia, a very lively light crimson; Cherub, a good bronze-yellow; Bronze Dragon, good; Barbara, and Golden Queen of England. This collection will last for some time, as the major portion of the plants are yet to bloom, but are giving promise of a grand show by their numerous large, plump, rapidly unfolding buds. *C. J.*

### MR. B. S. WILLIAMS.

Here is a fine collection staged in the large conservatory, where they are shown off to advantage by the overhanging Palms, Free Ferns, &c. A praiseworthy feature is also introduced in a row of stands containing cut blooms along the staging, neatly covered with verdant moss, by which there is a good opportunity of comparing the qualities of the blooms for show or other purposes. Only varieties that are in demand or have some special quality to recommend them are grown, and the following were the most noticeable as suitable for decorative purposes:—Mrs. Dixon, Sœur Melanie, a fine dwarf floriferous white; Chinaman, Comte de Germiny, Dr. Sharpe, in grand condition; Triomphe du Nord, a fine dark; Peter the Great, a lively yellow; Prince of Wales, Simon Delaux, L'Ile des Plaisirs, Soleil Levant, Madame Deveril, a very distinct and pretty variety for grouping; also Red Dragon, Virgin Queen, a showy white; Gloire de Toulouse, Glück, Thunberg, Lady Selbourne, still, and likely to be a great favourite; Bend Or, a grand yellow; Fulton, another good yellow; Princess Royal, a very pretty Anemone-scented variety; Beauté des Jardins, and J. Delaux.

## Notices of Books.

The House Sparrow. (London: William Wesley & Son, Essex Street, Strand.)

This is an exhaustive little treatise, containing a paper on the house sparrow, Passer domesticus, by an ornithologist, J. H. Gurney, jun.; one by a friend of the farmers, Colonel C. Russell; and another entitled "The English Sparrow in America," by Dr. Elliott Coues.

"There's a special providence in the fall of a sparrow."
*Hamlet.*

Thus reads the motto on the title-page of this pretty book, bound delicately in green, and adorned with a golden sparrow. There is no separate memoir by a friend of the sparrows; indeed, the book is not at all from the sparrow's point of view, but is a very one-sided affair altogether. There is a full account of the life-history of the bird, his deeds, and his misdeeds, and we regret, but are not surprised, that the summing-up of his judges is dead against him. It appears that only in his very early stage of existence is he fed upon grubs and insects. No sooner can he fight for himself than he betakes himself to the farmers' fields, where he not only devours his grain, but spoils more than he devours. His domestic character is of the worst possible kind; he robs chickens, and chases from his neighbourhood birds of a more peaceful nature.

In America, where the sparrow has been introduced, it has become a perfect pest, and those who were at one time anxious to see it established there are now only too anxious to pay for its destruction.

The sparrow increases rapidly and we think there is no doubt whatever as to the advisability of diminishing its numbers in localities where it is superabundant. We are not, however, prepared to advocate its extermination, as some do, for in London and other large and grimy towns, it is almost the only wild (?) bird that will make itself at home, that it has chased away from the towns many wild birds has not yet been sufficiently proven—the cat has in this respect much to answer for also, we think. In spite of its sins (and in towns it offends mainly by robbing chickens and blocking up gutters with its nests), its tameness, the amazing

impudence and boldness of so small a creature (see it in the Tuileries gardens in Paris for instance) its liveliness and even its shrill chirp are of interest to many who never see a "bit" of the country from one year's end to another. As a remedy against the evil of too many sparrows Mr. Gurney suggests that "sparrow pie is a toothsome dish," also that the bird is very good "cooked and eaten in the same way as larks." Certainly where both birds are numerous let us save the larks, and devour the sparrows! We think, however, that the most humane way of lessening the numbers of this little pest where it is superabundant, is, as is suggested, to "destroy the eggs and nests whenever it is possible to do so."

## NOTES FROM MESSRS. CLIBRAN & SON'S, ALTRINCHAM.

Microlepia hirta cristata.—This very beautiful Fern, when grown in a pot, is apt to lose a good deal of its distinct character unless stood on a stand above its surrounding fellows, so that its dense tassels may be seen to the greatest advantage. Calling at the Messrs. W. Clibran & Son's, Oldfield Nursery, Altrincham, a few days ago, I was pleased to find they were growing it with others of a somewhat pendulous habit in baskets suspended from the roof. Under these conditions the whole of the plant can be seen to advantage, and a well grown plant with dense tufts and tasselled pinnæ hanging round the sides of the baskets gives a much better idea of worth and beauty than when grown with others on the stages or tables. This is one of those that require a little more heat during the winter than some that will grow and succeed well with it during the summer. Its fronds, which are of a soft downy texture, are very liable to damp and rot if exposed to much cold and wet. It would seem to prefer a temperature where Davallia Mooreana does well—where, in fact, the thermometer does not often get below 55° during the winter months.

Rhododendrons.

For forcing Rhododendrons one of the best and earliest is Cunningham's White. It will soon be time to mark those that can be lifted from the borders for this purpose; where, however, they must be procured from the nurseries, this and Jenny Lind and caucasicum roseum are such as come on quickest, and can more confidently be reckoned upon. A splendid stock of these useful sorts are grown, and are now full of bud; potted up and gradually put into a little heat they may be had in bloom by the time the last of the Chrysanthemums are over, and so obviate that tiresome break that so often takes place during the latter part of January and beginning of February.

Maréchal Niel Rose.

This grand Rose receives special care and treatment here. There is at the present time a fine stock of plants, with shoots from 12 to 15 feet long. These are now stood outside, to ripen and mature, and can confidently be expected to produce a fine lot of flowers in the coming spring. The plants are about twelve months old; grafts during the past summer have had every attention given them in one of the light structures here, kept free from filth and mildew, and now have shoots stout and strong, that will certainly harden and be sure to give satisfaction to all who may procure them. It is just one of those things that should be in every garden, not merely singly, but where space can be spared another should be planted out to take the place of the older one. *W. Swan.*

When to Eat Fruit.—Fruits, to do their best work, should be eaten either on an empty stomach or simply with bread—never with vegetables. In the morning, before the fast of the night has been broken, they are not only exceedingly refreshing, but they serve as a natural stimulus to the digestive organs. And to produce their fullest, finest effect, they should be ripe, sound, and every way of good quality; moreover, they should be eaten raw. What is better than a bunch of luscious Grapes or a plate of berries or Cherries on a summer morning, the first thing on sitting down to breakfast? Or a fine ripe Apple, rich and juicy, eaten in the same way? In our climate Apples should constitute not the finishing, but the beginning of the meal, particularly the breakfast, for at least four months in the year; and fruits, raw or cooked, should make a part of the morning and evening meal (provided suppers are eaten) during the entire year. *Farm and Home.*

## Home Correspondence.

Vanda cœrulea.—it is amusing to see practitioners in their long clothes talking about mastering the culture of Vanda cœrulea after eighteen months' experience. A writer at p. 563 says:—"I bought seven plants of it seven months ago," and then goes on to give a history of his cultural success. But, pray, what does that amount to? So far as these particular plants are concerned he is not out of the alphabet of cultivation. When he has grown the plants, say, ten years, and can produce them well clothed with leaves without speck or blemish, flowering periodically, then there will be room for a little "crowing." It is only misleading beginners to tell them that because one man or a dozen of men can grow, say, Epidendrum bicornutum, E. nemorale, Cattleya superba, Ionopsis paniculata, Galeandra Devoniana, Oncidium Lanceanum decently for eighteen months that the same cultural routine will hold good for ten years! Just let your ambitious correspondents who are wanting to take a first-class certificate for cultural skill have a try at these species, and if they are not very much superior in practical skill to those who have had a twenty and thirty years' try at them, they will break down with the most of them before half the decade has been run. I do not want to freeze the ardour of any collector or cultivator, but I like to see difficult subjects fairly assessed. In times gone by we had to be contented with "singles" of many of those species, now they are imported in such numbers that the price paid then, £3 for, say a single plant, is now sufficient to buy a score. Any one now-a-days can afford to have a variety of practice, and it would be a pity for horticulture if some cultural progress could not be recorded. But I want to ask any successful cultivator of Vanda cœrulea—I mean one who has grown and flowered the species for the past ten years—whether he has got over the conditions of atmosphere that creates that spot which so disfigures the leaves, which the writer and the Rev. M. J. Berkeley some eighteen years ago simultaneously detailed in the *Gardeners' Chronicle* of that time, and what these conditions are? I am sure it would greatly interest and educate more than *James Anderson, Meadow Bank.*

Single Dahlias and Marguerites.—The most effective ornaments of my garden for the past two months have been single Dahlias and the white Marguerites. The latter were struck from cuttings taken in March, a dozen in a small box; they were planted out in June, and have been till lately quite a conspicuous feature in an oval bed; hundreds of their showy discs of snow and gold might be gathered to-day. I moved a few plants to the greenhouse a fortnight ago, and they promise to furnish cut blooms up to Christmas. As for the single Dahlias they have been charming; they were raised from seed which I gathered from some of Ware's fine varieties last autumn. Most of the flowers are yellow, but there are also half-a-dozen whites. It would appear from this circumstance that the lighter coloured varieties ripen their seeds most perfectly. I do not know of any garden flower at the dull time of the year so elegant and effective for vases, &c. There are various shades of yellow among the seedlings, but one of them is a pure bright primrose. *T. W., Harrow.*

Hedychium flavescens.—This species, under similar conditions and grown freely, always exceeds the more universally grown H. Gardnerianum in stature, but has narrower, paler coloured leaves. The stems attain a height of 4 to 6 feet, and being less robust than those of the last named species, spread about rather loosely if unsupported. As a flowering plant, however, it excels the common species both in the relative size of the flowers and their delicious perfume; for while the odour of H. Gardnerianum is by no means inviting; in the other case it is not only powerful, especially if the sun is shining and the temperature rather high, but is equally agreeable. In this respect it agrees with another closely allied congener, also flowering at Kew, namely, H. coronarium, whose flowers are pure white with a faint blotch of greenish-yellow on the broad deeply bifid lip. The flowers of H. flavescens have relatively longer petal-like staminodia than those of the last-named species, and pale yellow fading to white at their tips. The true petals or rather perianth-segments of this order of plants are usually if not always small, narrow, and insignificant or so inconspicuous as to deserve little attention for decorative purposes. Hedychiums as a rule delight in a liberal supply of water while making their growth, and H. flavescens is grown in a pot partly plunged in the tank of the Water Lily-house. A figure of it is given in Loddiges' *Botanical Cabinet*, 723, while another is given of H. coronarium at 507 of the same work. *J. F.*

Dianthus japonicus.—In general appearance this species may be said to resemble in a measure that of D. barbatus, but is botanically very distinct. The flowers are about the same size, and pink when first expanded, deepening to a uniform red, or reddish-purple, and the inflorescence is more decidedly cymosely panicled than corymbose, as in D. barbatus. The leaves are ovate or oblong, of a dark green colour, and present a stout leathery appearance, quite unusual in the genus. It was originally introduced to British gardens in 1804, and is stated to be a half-hardy perennial, flowering in June. Thunberg, who figured it in his *Flora Japonica*, t. 23, says it grows in the neighbourhood of Nagasaki, Japan, and flowers in the month of August. A strong plant has been flowering for many weeks on the rockery at Kew, and in spite of the cold, foggy, and rainy weather continues to expand its flower-buds and make itself conspicuous when the great majority of herbaceous plans begin to look ragged, except the usual autumnal display of North American Composites and a few stragglers, such as Lobelias of the L. splendens, cardinalis, and syphilitica type. The plants in question were raised from seeds recently reintroduced, and which it is to be hoped will prove sufficiently hardy to resist ordinarily severe winters. *J. F.*

Narcissus viridiflorus.—This plant seems still to defy all attempts to cultivate it successfully in England, and indeed it is hardly worth the trouble taken with it, except as a curiosity. All to whom I sent it two years ago tell the same story: the bulbs continue sound, and occasionally throw up a leaf, but seem to have lost all reckoning of times and seasons. No doubt, bulbs, if dug up when dormant, may be persuaded to flower once, the flower germ having been formed in their home near Gibraltar. In this way I have at present two bulbs flowering in my greenhouse. About a dozen bulbs were sent to me in May, of which I distributed all but four, which I potted, and baked all summer, and in September removed into a hot-bed for a month, watering them well. The flowers are very fragrant, the scent resembling that of Chimonanthus fragrans. *C. Wolley Dod, Edge Hall, Oct. 30.*

Impatiens glandulifera not Eaten by Rabbits.—In planting some Rhododendrons last year (spring of 1884), in a wood very much infested with rabbits, a small plant of Impatiens glandulifera happened to be growing on the ball of earth attached to one of those shrubs. It grew and flowered, and remained throughout the season unmolested. This year a number of plants of this Balsam were transplanted both in the wood and in open places in which rabbits were numerous and hungry, and I still find the plants untouched. Impatiens glandulifera is a free growing and flowering plant, and looks well in masses in woodland scenery, and when other plants cannot be grown, on account of rabbits, it may be introduced with advantage. It grows from 4 to 5 feet in height, and should be sown in the spring of the year. *W. Ingram, Belvoir.*

Treatment of Carnation Layers at Present.—From this forward is the time to remove rooted layers, and to get them ready for the winter, in private collections, and also for purchasing the splendid recently introduced new varieties for adding thereto. I am reminded of this by a large box of three dozen "pairs," in splendid condition, from a certain well known "Home of Flowers," I was brought to see yesterday, just received by a friend. How to treat them? This was a material point, and upon which I beg you to invite discussion. My friend does not exhibit, and grows all his flowers, as far as possible, in the open air. How to do this, and yet run no risk of losing any of the splendid collection of Carnations and Picotees he had been purchasing was the crux. At last we came to the conclusion to get ready a large frame and fill it with tan, which was easily accessible—to give a mild bottom-heat—and to

transplant the rooted layers in boxes, and put them therein. The 2° or 3° of heat generated by the tan and leaves will induce slight root action during November, but artificial heat is not at all necessary. A cold frame, kept dry rather than moist, answers admirably. If at all moist after the layers are put in, the dreaded "spot" makes its appearance on the leaves, and the collection will soon be seriously thinned out. Carnations and Picotees are like Pansies—once root-action has commenced they continue moving whenever the temperature is above the freezing point. To induce this root-action after the reception of the plants at this dull cool season, when the atmosphere is generally damp and foggy, is most material, and hence my recommendation to my friend. He believes in growing these useful and brilliant flowers in the open air, as I do, and he would not hear of potting them, as he wants them for beds next spring. That the very best varieties can be thus grown even in the heart of London smoke, has been proved by the bedding-out success Messrs. Veitch have had at Chelsea. No person, therefore, who has the smallest patch of town garden, and a cold frame to keep his plants (layers) during the alternate frosts and moisture of the winter and spring—dry cold they do not mind any more than the Auricula—may at once procure rooted layers of the choicest kinds and transplant them into a bed next February, with the certainty that he will be able to cut a bouquet of blooms from July to November during 1886: with my limited collection, which contains a few dozens of the perpetual kinds, especially the crimson selfs and yellow grounds, I can do so even to-day. But they must be fed, or the September and October blooms will not be worth cutting; however, this point another time. As I said, my friend did not want to pot up seventy-two plants, and they could not be planted out, so we decided to get suitable boxes and put in the "pairs" of each variety across, and easily accessible, so as to be readily lifted out with the trowel and transplanted into the beds when the time came. I mention this plan in detail because it is not usually adopted, and because it has many things to recommend it to amateurs and suburban villa gardeners. The soil or compost is of some consequence; give, therefore, a preference to old pasture sods (loam), pulled asunder. If a field is near that was ploughed up last season, the sods will suit admirably, and, what is very important, the larvæ of the click-beetle—the dreaded wireworm—is rarely found in those sods the second year, probably having assumed another form. In any case, the soil should be examined for it; if present it will find your Carnation root-stems, and make the centre its new home, until eaten through. Lime and brick rubbish, say an eighth part, will be useful to mix with the soil, and if sea shells are convenient pound some up and add a small portion. I do not give water if the soil around the roots of the new layer is at all moist, for the present, and during the winter your frameful of Carnations, Picotees, and the choicer Pinks will have more to dread from dampness than drought. *W. J. Murphy, Clonmel.*

**Solanum Maglia.**—We had Darwin's Potato yesterday to dinner—pure Maglia, untouched by hybridisation. Our vote was that it could not be called first-rate in its present phase of development, but that it would pass muster as a fair average eatable Potato, and that there was no trace of bitterness in its taste. After one year's cultivation in prepared soil at Kew a dozen tubers which I exhibited on behalf of Mr. Thiselton Dyer at the Linnean Society on Thursday night weighed 28 oz. *J. G. Baker.*

**Fruiting of Yucca** (p. 598).—Mr. Morse asks for records of Yucca fruiting in England. In 1876 Y. recurva fruited here, and I sent fruit and seeds to Kew and to Dr. Engelmann. I believe it has fruited since, but I have no record of it. This year a few abortive fruit appeared, but soon fell off. I suppose any of the species might be artificially fertilised, but I have never tried the experiment. *H. E. Ellacombe.*

—— These plants associate well with Tritomas, and impart quite a special feature to the border they occupy. For landscape gardening they have certainly few equals when well placed, the rigid leaves and large terminal panicles of white flowers giving so distinct an appearance to these noble plants. In Y. recurvifolia we have a most desirable plant, with gracefully recurved leaves and an abundant supply of greenish-white flowers. The panicles are more branched than in the nearly allied Y. gloriosa, and the leaves differ considerably in being less concave and not nearly so sharp-pointed. Y. filamentosa is another very ornamental plant, with creamy-white flowers which are shown off to advantage by the well branched panicle and large stout scape. The leaves are broad and arranged in a dense rosette. There are several other species in cultivation, but for ordinary gardening purposes the above are about the most floriferous and easy of cultivation. *X. Y.*

**Galanthus nivalis var. Octobrensis.**—Through the kindness of Mr. Barr I have received a living specimen sent to him by Mr. James Allen of this autumn-flowering Snowdrop. It does not agree with the description of the autumn-flowering Galanthus Olgæ of Orphanides from Mount Taygetus, and, indeed, presents no obvious botanical difference, so far as flower goes, from the typical spring-flowering Galanthus nivalis. The outer perianth segments are oblong-spathulate, about three-quarters of an inch long, the inner deeply emarginate, with rounded lobes, with a green line at the top on the outside, and abundant green longitudinal streaks inside. The stamens are half as long as the inner perianth-segments, with short filaments and anthers lengthened out into a long point. *J. G. Baker.*

**Rainfall at Methven Castle, Perth.—**

| | 1884. | 1885. |
|---|---|---|
| January | 3·62 | 5·09 |
| February | 4·52 | [illegible] |
| March .. .. | 2·31 | [illegible] |
| April .. | 1·52 | 0·76 |
| May .. | 4·08 | [illegible] |
| June .. .. .. .. | 5·24 | 0·57 |
| July .. | 0·82 | [illegible] |
| August .. | 3·41 | 2 |
| September .. .. | 1·31 | 1·[illegible] |
| | 26·42 | [illegible] |

*Peter Whitton.*

**Cotton Wool for Packing Peaches.**—This has been unfavourably spoken of several times lately, for the above purpose; but however good dry moss may be, it is not every one that can obtain it in sufficient quantity, and the following facts will show that cotton wool may be used without danger if used carefully. On October 12 I packed in a small box in the usual way, a dish of fine Salwey Peaches, that were ripe enough for dessert, for exhibition at South Kensington Fruit Show. Owing to urgent matters I was not able to leave home; they were therefore sent enclosed in a large box with other things, and delivered by the railway company. I am told they were duly staged, but without any exhibitor's card attached, at any rate I did not expect they would be of any use after the show was over, but contrary to my expectation, they were repacked and returned, this time by luggage train, and reached me on the 19th. As we were very busy the box was not opened until the 21st, when I was very much surprised to find they were still fit for exhibition. *W. H. Divers, Ketton Hall.*

## AERIDES VANDARUM.

IN the *Gardeners' Chronicle* of September 28, 1867, Professor H. G. Reichenbach says:—"It is astonishing how long an error may last. A single glance at the figures in the *Botanical Magazine*, and in Wight's *Icones*, vol. v., t. 1740, shows how different the plant above named is from A. cylindricum. A. Vandarum has very pretty white flowers, reminding one of Vanda flowers by the reflexed petals and by the undulation of both sepals and petals." Kept up by the great resemblance of the plants in their habit of growth, and by the few opportunities there have hitherto been of seeing them in flower, the error is as widely spread now as ever, and we are therefore glad of the opportunity of illustrating both the plants, and thus affording an easy means of putting the matter right in the future (fig. 143). Aërides Vandarum and A. cylindricum have been called shy flowerers, but their better culture in a few of our gardens of late years proves them to be free enough to produce their blooms if properly grown. In Lord Rothschild's garden at Tring Park Mr. Hill grows all the terete-leaved Aërides and Vandas to perfection in a warm and rather sunny house. There—planted out in sphagnum moss, Vanda teres may be seen with hundreds of flowers open at one time; V. Hookeri in pots and fastened to blocks blooming equally well but in less numbers, and both the Aërides we here notice flowering as well as could be desired. Mr. Hill thinks the nearer the tops of the plants are to the glass the better their chance of producing flowers, provided the temperature be kept regular and not allowed to get below 60° in winter. *J. O'B.*

# Reports of Societies.

## ROYAL HORTICULTURAL:

November 10.

THIS meeting, almost the last of the year now drawing to its close, was held in the conservatory of the Royal Horticultural Society's Gardens.

Some groups of Cyclamen, one of Bouvardias, a few cut blooms and pot Chrysanthemums, chiefly new, or newish varieties, and some few Orchids and seedling Apples, comprised the main portion of the exhibits, the conservatory presenting rather a dreary look after the animated and crowded days of the past season.

### Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. J. James, J. Hudson, W. Bealby, H. Herbst, J. Walker, J. Fraser, Shirley Hibberd, G. Duffield, H. Williams, J. Dominy, J. O'Brien, H. Turner, E. Hill, Dr. M. T. Masters.

A pretty collection of Barkerias in bloom, including B. Lindleyana; Odontoglossum Krameri var. alba, and the small-flowering Oncidium retusum, a yellowish-white flower of small beauty, came from Dr. Deeke, The Glen, Lewisham (gr., Mr. Norky). The interesting lot received a Cultural Commendation.

Colonel T. Clarke, Daventry, showed Pourettia flexilis, a Bromeliad with recurved foliage, narrow, and serrated, the central portion of the heart-leaves being of an intense scarlet colour.

The New Plant and Bulb Company, Colchester, had again several varieties of Nerine, the best being N. Fothergilli, a brilliant scarlet, of much usefulness at this season; a new form of Cypripedium insigne named Wallaceii, in which the dorsal sepal is spotted a dark brown, and margined with a distinct white band, the whole flower having the peculiar varnished look of this section of Cypripedia; a noteworthy plant.

Messrs. J. Veitch & Sons, Chelsea, sent a collection of Cyclamen in good bloom and of rare quality; another, of Bouvardias, as noticed in our report of the last meeting; several new Chrysanthemums, as M. Freeman, a soft rose-coloured Japanese kind; La Japonaise (Delaux), orange-coloured; M. Vilmorin, a reddish-copper, fine in hue and form; M. Paul Fabre, red-brown; and a few others of Japanese incurved and thread-petalled of lesser merit. A useful autumn flowering Amaryllis, Autumn Charm, a rose-coloured flower of medium size and good form. A Silver-gilt Banksian Medal was awarded for the various exhibits.

Mr. W. Bull, Chelsea, sent Pancratium fragrans macrophyllum in good bloom, Dendrochilum Cobbianum giganteum, the most robust variety, and showing the longest racemes of bloom, which are French-white and yellow. Other plants shown, as Mormodes pardalinum unicolor, Barkerias, Vanda Sanderiana, V. coerulea, Oncidium Forbesii, Trichosma suavis, Cattleya aurea, and Lælia autumnalis atrorubra, are specified in our notice of plants in bloom at this nursery, in another page. A fine piece of Tillandsia Lindeni vera, dwarf-habited, much more so than T. Lindeni, the bracts rose-coloured, and the flower of the loveliest shade of blue imaginable; Alocasia Sanderiana, green digitate foliage, white margined and ribbed; and Eucharis Mastersii, nicely flowered, a mass in a broad pan, the flowers thrown well above the leaves. A rose-coloured, tasselled and quilled Chrysanthemum, M. Ghys, was also shown by Mr. Bull.

Messrs. Page & Sons, Grove Nursery, Teddington, received a Silver-gilt Medal for an excellent collection of Cyclamen, showing great variety in colouring, and, for the season, unusual size and substance in the flowers.

A very fine Gymnogramma schizophylla superba, in a 10-inch pot, came from Mr. Wright, gr. to J. A. Whillard, Esq., Roydon Mount, Streatham Hill, S.W. This Fern, seldom seen so large as this, should, with a continuance of good treatment, make a fine show specimen. It was Culturally Commended.

Mr. Owen, Floral Nursery, Maidenhead, showed the unusual feature, at this period of the year, of a collection of fresh-looking single-flowered Dahlias, presumably from plants in pots; a good white Pelargonium, Duchesse de Carrs; a yellow Marguerite, and a collection of Japanese Chrysanthemums, cut from plants struck in June this year.

Mr. Martin, Blexfield, Henfield, Sussex, showed a yellow sport from the Chrysanthemum White Globe, a broad petalled incurved flower, the best point in it being the clear canary-yellow colour; and fine Chrysanthemums in pots came from the same exhibitor.

Mr. Stevens, nurseryman, Putney, showed a plant of Chrysanthemum Maiden's Blush, a large, almost white flower, broad petalled and of great substance, possibly an exhibition variety of merit.

CERTIFICATES.

To Messrs. J. Veitch & Sons, for Chrysanthemum M. A. Vilmorin; and for Amarylis Autumn Charm.

To Mr. Stevens, for Chrysanthemum Maiden's Blush.

To the New Plant and Bulb Company, for Cypripedium Wallacei.

### Fruit Committee.

Present: R. Gilbert, Esq., in the chair; and Messrs. J. Taylor, G. F. Pritchard, J. Noble, — Harrison, A. Miller, A. Lancaster, F. T. Rivers, B. S. Williams, and Rev. H. H. D'Ombrain.

Mr. B. S. Williams showed again his black Grape, Winter King, well coloured, but barely ripe. This should be a deserving sort under good treatment, but as shown it was acid to a disagreeable degree.



FIG. 143.—AËRIDES VANDARUM. (SEE P. 628.)

Mr. Rivers showed a seedling from Gansel's Bergamotte Pear, called The Parrot—perhaps from its imitating the qualities of the parent in a minor degree.

Mr. A. Miller, Rood Ashton Park Gardens, showed seedling Apples, large culinary, which, probably from want of variations from old kinds, received no recognition. Messrs. Harrison & Sons, nurserymen, Leicester, showed seedling Apples Lord Melbourne, a fruit resembling Blenheim Orange, and dishes of Apple Annie Elizabeth, one of their own raising. A few fruits came from Mr. Lancaster, Holkham; Mr. Noble, Fortis Green; Mr. Pritchard, Sittingbourne; and Mr. Taylor, Soham; but nothing of especial merit.

## GRAND CHRYSANTHEMUM EXHIBITION AT THE CRYSTAL PALACE.

*Nov. 6 and 7.*—This excellent show was held in the central nave of the building, tables for cut bloom and dwarf plants occupying the centre of the eastern half, the various groups having been disposed at wide intervals in front of the bordering beds and statuary—a method of arrangement that admitted of close inspection, and of which the general effect, especially under the electric lighting, was very satisfactory.

In an average season this date is fully two weeks too early; it is therefore very pleasing to record the fact that the exhibition was an exceedingly good one, the entries being very numerous and quite up to the best standard of recent years in quality. In some of the classes the competing stands were very close to each other, and the judges did not arrive at a decision without a careful comparison of the individual blooms. The principal class was an open one for cut flowers.

Twenty-four incurved and as many Japanese, not less than eighteen varieties of each, nor more than two of one variety.—For the four prizes offered in this class there were eleven competitors, the 1st prize being awarded to Mr. E. Molyneux, gr. to W. H. Meyers, Esq., Swanmore Park, Bishops' Waltham. His flowers were much in advance of those exhibited by the other competitors: they were in fact wonderful examples of good cultivation. The incurved flowers were, back row—Queen of England, Lord Alcester, Queen of England, Alfred Salter, Empress of India, Alfred Salter, Lord Alcester, Empress of India; second row—Jean d'Arc, Princess of Wales, Emily Dale, Lord Wolseley, Princess of Wales, Emily Dale, John Salter, Golden Empress; third row—Empress Eugénie, Jardin des Plantes, Prince Alfred, Princess Beatrice, Refulgence, Lady Hardinge, Mr. Bunn, Nil Desperandum, Japanese: back row—Madame C. Audiguier, Fair Maid of Guernsey, Belle Pauline, a charming variety; Val d'Andorre, Baron de Prailly, Vald'Andorre, Meg Merrilies, Madame C. Audiguier; second row—Sceptre, Toulouse, Jeanne Delaux, Criterion, very fine; Madame Deveille, Meg Merrilies, Madame Bertie Rendatler, Belle Pauline, Criterion; third row—Yellow Dragon, Mdlle. Lacroix, Margaret Marrouch, Elaine, Duchess of Albany, Madame de Sevin, Soleil Levant, and M. Astorg; 2d, Mr. Gibson, gr. to J. Wormald, Morden Park, Mitcham; 3d, Messrs. Dover, florists, Fareham, Hants; 4th, Mr. F. Holmes, gr. to A. B. Hill, Esq., Clapham Park.

EIGHTEEN INCURVED.

In this class Mr. Molyneux was again 1st, with nearly similar varieties to those already named; Cherub, Sir Stafford Northcote, and Novelty, were additional. Mr. Berry, Roehampton House, S.W., was 2d: Jeanne d'Arc was fine in this stand, as it was throughout. Mr. J. Holmes, gr. to G. M. Storey, Esq., Nightingale Lane, Balham, was 3d, with smaller flowers.

TWELVE INCURVED.

Mr. J. Wyatt, gr. to J. Perry, Esq., Braddenhurst, Caterham Valley, was 1st; he had good blooms of John Salter, Empress of India, Prince Alfred, White Venus, &c. Mr. E. Smith, gr. to T. Nye, Esq., Oakville, Castle Bar Hill, Ealing, was 2d.

SIX ALFRED SALTER CLASS.

Mr. Molyneux was awarded the 1st prize for six splendid blooms of this kind. Mr. Thomas Sadler, gr. to C. Lambert, Esq., was disqualified, because one of his blooms of Prince Alfred had sported to another shade of colour. The 2d prize was withheld.

EIGHTEEN JAPANESE BLOOMS.

The class brought out an excellent competition. The 1st prize was awarded to Mr. John Ridout, gr. to T. B. Haywood, Esq., Woodhatch Lodge, Reigate. Amongst other fine blooms the best were Dr. Macary, pale rose; Japonaise, Jeanne Delaux, The Daimio, and Madame de Sevin, rich rosy-purple; Mr. J. W. Springbett, Holly Nursery, Cheshunt, was a good 2d; he had Madame de Sevin and Mons. H. Jacotot, very fine. Mr. Jas. Brown, gr. to A. J. Waterlow, Esq., Great Doods, Reigate, had the best twelve Japanese blooms, and Mr. Molyneux the 2d best.

SIX JAPANESE BLOOMS OF ONE VARIETY.

This brought out a much better exhibition than the six incurved. Mr. Molyneux obtained the 1st place easily with six remarkably large and fine blooms of Madame C. Audiguier, large even for that variety; Mr. C. Orchard, gr. to J. Galsworthy, Esq., Combe Warren, Kingston-on-Thames, was 2d with fine blooms of Mons. Jacotot; Mr. Burnett, gr. to Mrs. Fenton, The Grange, Hillingdon, Uxbridge, was 3d, with only moderate blooms of Triomphe du Nord. Excellent blooms of Elaine were exhibited by Messrs. Berry & Sadler.

TWELVE BLOOMS OF REFLEXED VARIETIES.

In this class Mr. Molyneux was easily 1st with a splendid bloom of Cullingfordi, rich crimson-scarlet; Phidias, Félicité, white: Mdlle. Madeline Tezier, &c.; Mr. Sadler was 2d; Mr. E. Chadwick, gr. to E. W. Nelson, Esq., Ealing, being a good 3d.

TWELVE LARGE-FLOWERED ANEMONES.

Mr. E. J. Cole, gr. to W. Pethick, Esq., J.P., Sneyd Park, Bristol, gained the 1st prize—Empress, Lady Margaret, and Glück, very old varieties, were the best of them. Japanese Anemones were not admissible, and Mr. Gibson was disqualified owing to two blooms being in his stand. Mr. J. T. Salter was 2d, and Mr. E. Chadwick 3d.

Mr. Molyneux gained the 1st prizes for twelve pompons, three blooms of each variety, and also for twelve Anemone pompons, exhibited in the same way. La Pureté was very fine in the former, Antonius and Madame Montels in the latter class.

SIX JAPANESE ANEMONES.

This class was not well contested. Mr. E. S. Cole gained the 1st prize. He had Madame B. Pigny, very fine, rosy-purple; also Sœur Dorothée Souille and Madame Closs; Mr. Springbett was 2d.

NEW VARIETIES.

Messrs. Laing & Co., Stanstead Park, Forest Hill, exhibited a considerable number of the best new Continental Japanese varieties, and many good seedling forms raised in their own nursery. First-class Certificates were awarded to John Laing, a large full flower, a rich reddish colour, tinged gold, the centre petals incurved, showing the reverse of a golden colour, and Madame Laing, a large flower with broad petals of a straw colour, the centre petals tipped yellow. Alpha, a seedling raised by Messrs. Laing, is very promising, but the First-class Certificate which it will probably receive some day was withheld, owing to one bloom only being exhibited. The seedling plant, Bronze Queen of England, shown by Messrs. Carter & Co., was, as it well deserved to be, Commended.

GROUPS.

Plants in pots arranged for effect, not less than 100 square feet, of incurved varieties, were staged by Mr. G. Stevens, St. John's Nursery, Putney; Messrs. Laing & Co., Forest Hill; and Messrs. Carter & Co., High Holborn, who received the awards in the order of their names, old well known kinds forming the majority of those shown.

Groups of Japanese varieties of the same extent of superficial area were staged by Messrs. J. Laing & Co., 1st; Mr. Stevens, 2d; and Mr. G. Edwards, Balham Nurseries, 3d. In the winning group were nice specimens of Hy. Jacotot, rich brown; Alpha, pale lilac; La Reine Marie, deeper lilac; Dormillir, the broad petalled white Madame Astorg, as well as many of the now well appreciated varieties of French origin.

GROUPS BY AMATEURS.

Groups of plants of similar extent to the foregoing were shown by Mr. C. Orchard, gr. to J. Galsworthy, Esq., Combe Warren, Kingston, 1st, whose plants were well assorted, conspicuous being the new variety

Cullingfordi and Sulphur Gem, both fine in their way; 2d, Mr. W. Webster, gr. to Mrs. Scott, Mavis Bank, Grange Road, Upper Norwood; 3d, Mr. C. S. Bowman, London Road, West Croydon.

Six trained incurved, amateurs.—1st, Mr. Cherry, gr. to Mrs. Gabriel, Norfolk House, Streatham, S.W., for smallish plants, fairly bloomed; 2d, Mr. J. Weston, gr. to D. Martineau, Clapham Park.

Four trained incurved.—Mr. W. Clarke, gr. to T. Bass, Esq., 15, Christchurch Road, Streatham, S.W., 1st; Mr. J. Howe, gr. to Mrs. F. Bennett, Tulse Hill, 2d.

For six trained specimens of Japanese kinds there was no competition. Mr. C. Portway, gr. to B. H. Portal, Esq., Daventry House, Upper Tooting; Mr. C. Orchard, and Mr. A. Luff, gr. to R. R. Hyatt, Esq., Leigham Court Road, Streatham, were respectively 1st, 2d, and 3d, all these exhibits being of medium size, and in the main well bloomed, but wanted more time to expand their blooms.

Six trained pompons.—Mr. E. Cherry was 1st, with pretty, medium sized specimens of such as Brilliant, La Vogue, St. Michael, and Perle; Mr. J. Weston 2d, having plants of 3 feet in diameter, full of bloom; Mr. C. Portway 3d.

## THE NATIONAL CHRYSANTHEMUM:

### November 11 and 12.

THE chief show of this Society was held at the Westminster Aquarium on the above given dates. Here, as elsewhere, the blooms were not so large and fine as usual, owing to the inclement weather in early autumn; but the various plants of Chrysanthemums shown as pot-grown specimens left nothing to be wished for either in flower or foliage; so abundantly, indeed, had many of the new forms of Japanese hybrids flowered, and so marvellous was the variety of rich colours, that it was a surprise even to *habitués* of such shows. Nothing seems to have given so much zest to Chrysanthemum growing as the ability to grow these gems of the genus; and there are many, doubtless, who are induced to commence their culture, easy as it is, in almost any place, by what is witnessed at these meetings. The various special manures now before the horticultural public may be credited with some of the general excellence of the exhibits, and a few growers were at this meeting so candid as to mention the sort of fertiliser employed, although of not much weight, the productions not being of superlative merit.

#### CUT BLOOMS.

Taking the best classes of cut blooms first (open), we have that of forty-eight Japanese, in not less than twenty-four varieties, Mr. Lowry, gr. to J. MacAndrew, Esq., Belmont, Mill Hill, was 1st, all the blooms being of great merit, and very much so were Madame de Sevin, Boule d'Or, H. Jacotot, Mr. J. Laing, Elaine, Criterion, Japonaise, Val d'Andorre, Soleil Levant, and Album plenum, the chief weight being found in the new varieties mentioned, older ones being quite up to the mark likewise; 2d, Mr. Ridout, gr. to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, who had put up an almost equally fine collection.

Twenty-four Japanese, distinct.—1st, Mr. T. Bettworth, gr. to R. Ewing, Esq., Cheshunt, who had amongst other fine specimens of Japanese kinds, Oracle, Grand Monarch, Garnett, Triomphe du Nord, Red Gauntlet, H. Jacotot, Soleil Levant, Elaine, Fulgore, M. Taria, and Duchesse de Maury; 2d, Mr. J. J. Lowry, with M. Hubert, Belle Paulne, Thunberg, still one of the best yellows; Comtesse de Beauregard, M. Delaux, and Japonaise; 3d, Mr. Downie, Ely, Cambs.

Twelve Japanese, distinct.—Mr. Shoesmith, gr. to Rev. Canon Hodgson, Saltwood Rectory, Hythe, was 1st, with very beautiful blooms, that would have been improved by some more attention in dressing, his best being Soleil Levant, Ferand Feral, Jeanne Delaux, Elaine, Mr. J. Laing, Agrement de la Nature, Meg Merrilies, and Madame Clémence Audiguier; 2d, Mr. G. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, fine blooms, but rather wind-torn and rough; 3d, Mr. C. Maxted, gr. to the Marquis of Ely, Kearsney Abbey, Dover.

Six Japanese, one variety only.—1st, Mr. J. R. Wildman, gr., The Oatlands, Clapham Park, whose full blooms of Elaine were even in size and well shown; 2d, Mr. S. Pratt, gr. to Mrs. Anderson, Wavertry Abbey, with beautiful blooms of Madame C. Audiguier; 3d, Mr. C. Herrin, gr., Chalfont Park, Bucks, with the same variety as the last named.

Six Japanese, distinct (for those who have not taken a prize for cut blooms of Chrysanthemums).—1st, Mr. Shoesmith, with very nice blooms of Jeanne Delaux, Meg Merrilies, Madame C. Audiguier, Triomphe du Nord, Agrement de la Nature, and Ferand Feral; 2d, Mr. D. Philips, gr. to R. H. Mann, Esq., Langley Broom, Slough, whose best were Thunberg, Triomphe de la Rue des Chartres, Mons. Ardennes; 3d, Mr. Browne, gr. to A. Waterlow, Esq., Great Doods, Reigate.

Twelve reflexed blooms in not less than six varieties.—1st, Mr. Bettworth with the following fine sorts—King of Crimsons, Golden Christine, Peach Christine, Pink Christine, White Christine, and Cloth of Gold, an even lot as regarded quality and choice; 2d, Mr. G. Wills, Bassett, with Dr. Sharpe, King of Crimsons, Peach and Pink Christines, and Cloth of Gold; 3d, Mr. C. Maxted.

Twelve large-flowered Anemone-flowered, distinct (Japanes Anemones being excluded).—1st, Mr. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton; beautiful flowers of this section were observed in this lot of the following—Lady Margaret, Empress, George Sands, Glück, Louis Bonamy, Queen Margaret, Acquisition, and Mrs. Pethers. E. Jukes, Esq., Hope House, Winchmore Hill, was 3d, with a pretty lot of well developed blooms.

Six large-flowered Anemone blooms, one variety only.—Mr. Bettworth was 1st, with the fine white Lady Margaret; Mr. M. Sullivan with the same was 2d; and Mr. Berry, gr. to the Countess of Leven, Roehampton House, Roehampton, 3d, with Glück.

Six Japanese Anemone-blooms, in not less than three varieties.—1st, Mr. M. Sullivan, having the sorts Fabian de Madrenaz, Sœur Dorothée Souille, Madame Closs, and Madame Cabrol; 2d, E. Jukes, Esq., with nearly similar kinds; 3d, Mr. G. Wills.

Twelve Anemone-pompon, distinct, three flowers of each in bunches with foliage.—In this minor class Mr. Butcher, gr. to G. Cusins, Esq., Priory, Hadley, was 1st.

Twelve pompons, distinct, shown in the same way.—1st, Mr. Butcher.

#### INCURVED FLOWERS.

Forty-eight blooms in not less than twenty-four varieties, and not more than three of any variety.—No 1st was awarded; 2d, Mr. C. Penford, gr. to Sir F. Fitzwigram, Leigh Park, Havant, his finest flowers being Pink Venus, Golden Empress, Alfred Salter, Jardin des Plantes, Mr. Howe, Madame Cobay Barbara, Dr. Sharpe, Mabel Ward, Miss M. Morgan.

Thirty-six incurved blooms, in not less than eighteen varieties,—1st, Mr. Gibson, gr. to T. Wormauld, Esq., Morden Park, Surrey, who showed flowers of much substance, and generally were the perfection of form; extra were A. Salter, Empress of India, Lord Wolseley, Princess of Wales, Golden Empress, Prince Alfred, John Salter, Golden Eagle, Lord Alcester, Nil Desperandum, and Lady Hardinge; 2d, Mr. Berry, whose best were Prince Alfred, Lord Wolseley, Jeanne d'Arc, Empress Eugénie, Emily Dale, and Queen of England; 3d, E. Jukes, Esq., with perfect blooms, much smaller.

Twenty-four incurved varieties, distinct.—1st, Mr. E. Sanderson, St. Mary's Road, Willesden, with a very superior even stand of perfect form, and to which a Silver Cup, in addition to the prize of money, was awarded. The best where all were fine were Golden and White Queens of England, Nil Desperandum, Empress Eugénie, Princess Beatrice, Lord Alcester, Jardin des Plantes, Lady Hardinge, and Empress of India; 2d, Mr. M. Sullivan, Lord Alcester, Mr. Bunn, and Queen of England being very superior; 3d, Mr. Wildman.

Eighteen incurved varieties, distinct.—Here Mr. Berry was a good 1st, Emily Dale, Refulgence, Lord Wolseley, Jeanne d'Arc, Alfred Salter, Lord Alcester, and Golden Empress being the finest, the whole stand being good, few weak points being noticeable. 2d, Mr. Major, gr. to J. P. Redstone, Esq., Wyn Park, Potter's Bar. This stand was rather unequal as to quality, the best specimens being Queen of England, Lord Wolseley, Alfred Salter, and Empress of India; 3d, Mr. E. Sanderson, with flowers of excellent finish but small.

Twelve incurved varieties, distinct.—1st, Mr. Shoesmith, with magnificent blooms of Queen of England, Golden Empress, Empress of India, Mrs. Heale, John Salter, and Princess of Wales; 2d, Mr. C. Broom, gr., Nazeing Park, Waltham Cross, with small but perfectly finished examples; 3d, Mr. E. Smith.

Six incurved blooms, for those who have not taken a prize for cut flowers of Chrysanthemums in previous years.—1st, Mr. Shoesmith, with very fine blooms of Princess of Wales, Mrs. Heale, J. Salter, and Empress of India; 2d, Mr. W. Payne, gr., Grenville, Upper Clapton, with flowers much less large.

Six incurved blooms, one variety only.—1st, Mr. Burnett, gr. to Mrs. Foster, The Grange, Hillingdon—a capital lot of Golden Empress; 2d, Mr. C. Herrin, with Jeanne d'Arc, much smaller; 3d, Mr. Sullivan, with Queen of England.

#### AMATEURS.

Twelve incurved blooms, distinct.—1st, Mr. Hillier, 13, Priory Road, Wandsworth, with perfect blooms of Nil Desperandum, Mrs. Heale, Queen of England, John Salter, Princess of Teck, Golden Empress, Mrs. Brunlees, Lord Alcester; 2d, Mr. Bingham, 22, Manor Road, Stoke Newington; 3d, Mr. Wildman.

Six incurved blooms, distinct.—1st, Mr. Wildman—Lord Alcester, Mrs. Bunn, Prince of Wales, Empress Eugénie, and Lord Wolseley being his finest blooms; 2d, Mr. Bingham.

Twelve Japanese, distinct.—1st, Mr. J. J. Hillier, Wandsworth; fine were T. Todman, Madame Candrynier, Flamme de Punch, M. Delaux, Fair Maid of Guernsey, Golden Dragon, and Val d'Andorre; 2d, Mr. Walker, 12, Lingfield Road, Wimbledon—F. A. Davis, Criterion, Val d'Andorre, Cry Kang, and Peter the Great being meritorious flowers.

Six Japanese, distinct.—1st, Mr. Hillier, with Criterion, Madame Marouche, M. Delaux, and Mdlle. Lacroix; 2d, Mr. H. Downie; 3d, Mr. G. Walker.

#### METROPOLITAN CLASSES.

Twenty-four incurved, in not less than eighteen varieties.—1st, Mr. G. Langdon, gr. to Messrs. Monroe & Adams, Brook House, Clapton—a fine stand of standard kinds, even in quality, and with few weak points; 2d, Mr. Gibey, The Cazenoves, Upper Clapton, with a good stand; 3d, Mr. Nichols, gr. to J. Ogden, Esq., Verandah House, Clapton Common.

Twelve incurved varieties, distinct.—1st, Mr. G. Langdon, a first-class stand, the only weak ones being those which usually are undersized, and which therefore meet with less favour; 2d, Mr. Martin, gr. to H. Mathews, Esq., The Cedars, Woodbury Down, a good stand of blooms; 3d, Mr. W. Payne.

Six incurved, distinct.—1st, Mr. Langdon, with excellent blooms of old favourites; 2d, Mr. W. Payne; 3d, Mr. Gilbey.

Twelve Japanese, distinct.—1st, Mr. Gilbey, with blooms of medium dimensions; 2d, Mr. Langdon; 3d, Mr. W. Martin.

Six Japanese, distinct.—Mr. W. Martin 1st, Mr. W. Payne 2d.

#### POT PLANTS.

A group of Japanese varieties only, 60 square feet.—1st, Mr. Stevens, Nursery, Putney, put up an attractive group of the newer kinds, well assorted and abundant in leaf; the plants had been grown in Crute's concave pot. 2d, Mr. Davis, Nursery, Camberwell, also a fine group, ranging from 2½ to 5 feet high, and the kinds the popular new ones.

Group of Chrysanthemums, excluding Japanese kinds.—Here again Mr. Stevens was 1st with an excellent lot, the blooms even in size and plenty of them, yellow predominating; 2d, Mr. Davis, plants as large as the foregoing, but with smaller blooms.

Nine trained specimens, large flowered.—1st, Mr. Monk, Forest House, Leytonstone, a capitally flowered group of plants, averaging 3 feet in diameter; 2d, Mr. C. Cherry, gr. to Mrs. Gabriel, Norfolk House, Streatham, clean, vigorous, semi-globular plants; 3d, Mr. Clarke, gr. to J. Bass, Esq., Roupell Park, Streatham, medium-sized plants.

Four trained specimens, large-flowered varieties.—1st, Mr. F. Moore, gr., Blendon Hall, Bexley Heath; these were very fine plants, globular in form, on 4 feet stems, and as full of bloom as it is possible to have them, the sorts being Chinaman, Roseum superbum, Curiosity, and Elaine. 2d, Mr. Gilbey, equally as well flowered; 3d, Mr. Monk.

Six trained Japanese varieties in pots, not larger than 12 inches.—1st, Mr. Monk, with nicely-flowered pyramids; 3d, Mr. Lovegrove, gr. to H. Spicer, Aberdeen Park, Highbury.

Four trained specimens, Japanese or pompons, in pots not exceeding 12 inches.—1st, Mr. Gilbey, with Bouquet Fait, Dr. Macary, and Dr. Sharpe, splendid specimens, seldom if ever equalled for colour and floriferousness; 2d, Mr. F. Moore, but little less good, of Hiver Fleur, Elaine, and Bouquet Fait; 3d, Mr. W. Clarke.

Six trained pompons.—1st, Mr. E. Cherry, with pyramidal bushes, well bloomed.

Single specimen Chrysanthemum, any variety, and in any form.—1st, Mr. Monk, with robust, massive plant of the deep coppery-red George Gordon, well foliaged, and covered with blooms; 2d, Mr. Wills, with a plant of 6 feet in diameter, flowered profusely, of La Nymphe; 3d, Mr. Gilbey, with a good specimen of l'Ile des Plaisirs. An extra prize was awarded to Mr. Howe, for a specimen of Sœur Melanie.

#### MISCELLANEOUS.

Mr. Robert Owen, nurseries, Maidenhead, showed boxes of single Dahlias and Chrysanthemums; as did also Messrs. Cannell & Sons, Swanley, making a fine show with nine boxes of Chrysanthemums of all sections, put up with their foliage in bunches of three or more blooms.

Mr. Springbett, nurseries, Cheshunt, had likewise a great quantity of similar stuff, but not for competition.

Mr. Crute, the inventor of the concave-bottomed flower-pot, had a large pyramid formed of these pots, in all the various sizes in which he makes them. His other exhibits were rustic upright boxes for balconies and windows, made to resemble wood, but which being of clay and very massive, are much to be preferred to cork, wood, and the like; likewise an urn, of a rustic pattern, to hold plants which are used in rooms; the upper half is in two, and removable when the plant is required to be put into it. Various other designs in useful domestic garden pottery were to be seen in this stand.

Mr. T. Ware, Tottenham, exhibited a box of new single-flowered forms of Chrysanthemums.

Mr. Wright, gr., Middle Temple, showed a stand of well-finished blooms of the bright red-brown Chrysanthemum Cullingfordii, but which was not specially recognised by the committee. He was, nevertheless, awarded a Silver Medal for six new forms—Jupita, a red Japanese; Madame J. Laing, M. Freeman, M. Vivian Morel, a pale primrose; Belle Etoile, bronze; and Souvenir d'Haarlem, bright pink.

#### CERTIFICATES.

To Mr. Davis, Camberwell, for Dr. Burrell, a golden-bronze; Madame Fabola, and for the same kinds as those for which Mr. Wright received the Silver Medal of the Society.

To Messrs. J. Carter & Co., High Holborn, for bronze sport from Queen of England.

To Mr. Stevens, Putney, for Maiden's Blush.

#### FRUIT.

Rarely at this show have Grapes been so admirably represented as on this occasion, for there were, to begin with, no less than eight collections each of twelve bunches, and the class included many first-class samples. Mr. Pratt, gr. to the Marquis of Bath, Longleat, was 1st here, with four grand clusters of Black Alicante, four good bunches of Lady Downe's, and four superb Muscat of Alexandria. It was unfortunate in the interests of Mr. Wallis, Keele Hall Gardens, that the term collection should have been interpreted to be met with three kinds only, although they were of superb quality. Mr. Wallis, holding that variety was required sent twelve kinds in twelve bunches, and a most meritorious and interesting lot they were. It comprised, of blacks, Burchard's Prince, Mrs. Pince's Black Muscat, Barbarossa, Black Alicante, Lady Downe's, Gros Maroc, Gros Colmar, and Alnwick Seedling; and of whites, Muscat of Alexandria, White Tokay, Mrs. Pearson, and Royal Vineyard. Mr. Osman, Ottershaw Gardens, Chertsey, was 3d, having four kinds only.

In the class for white Grapes, three bunches, Muscat of Alexandria, were shown the best; very well finished samples coming from Mr. S. Castle, gr. to F. J. Cooke, Esq., West Lynn; Mr. Wallis coming 2d, and Mr. Perkins, gr. to the Right Hon. W. H. Smith, M.P., Henley-on-Thames, was 3d.

Eight lots of three bunches of black kinds were staged, the finest, huge massive clusters of Black Alicante, weighing 15½ lb., from Mr. Howe, gr. to H. Tate, Esq., Streatham Common, coming 1st; and some superbly finished, though medium sized bunches, of Gros Colmar, from Mr. Castle, being placed 2d; Mr. Osman coming 3d, with good Pince's Black Muscat. The other lots were chiefly Black Alicante.

Pears made a good show, as might have been expected, some eleven lots of six dishes being in competition. Of these the best came from Mr. Goldsmith, gr. to C. A. Hoare, Esq., Beckenham, who had good dishes of Beurré Clairgeau, Beurré Superfin, Duchesse d'Angoulême, Durandeau, Pitmaston Duchess, and Doyenné du Comice; Mr. G. Duncan, Warnham Court Gardens, Horsham, was next, with good Doyenné du Comice, Flemish Beauty, Beurré Diel, and sorts named above; whilst Mr. Waterman, gr. to H. A. Brassey, Esq., Maidstone, had capital Chaumontel, Glou Morçeau, Triomphe de Jodoigne, Hacon's Incomparable, &c.

Dessert Apples were a remarkable feature, as no less than fifteen collections, each of six dishes, were staged, and generally the samples gave rich colour and good quality. Mr. Jacob, of Petworth, Sussex, came 1st, with good samples of Ribston, Cox's Orange, and King of the Pippins, Lewis' Incomparable, Nancy, and Winter Traveller, the latter kind not being much known. It much resembles the Ribston. Mr. F. Miller, of Margate, was 2d, with pretty Blenheim, King, Ribston, and Fearn's Pippins, Scarlet Pearmain, full of colour, and Cornish Aromatic; Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, was 3d. In the other collections were good Cornish Gillyflower, Adams' Pearmain, Aromatic Russet, Winter Pearmain, Welford Park Nonsuch, &c.

Kitchen Apples were represented by eleven collections of six dishes, Mr. Ross coming to the front with good-sized, even, and very handsome samples of Mère de Ménage, Cox's Pomona, Peasgood's Nonsuch, Stirling Castle, Lane's Prince Albert, very good; and Waltham Abbey Seedling. Mr. Miller, who was 2d, had this latter kind very fine indeed in his six dishes, as also Emperor Alexander, Blenheim Pippin, Anne Elizabeth, Peasgood's Nonsuch, and Kentish Fillbasket. Mr. Waterman was 3d. Lord Derby, Wellington, Alfriston, Hoary Morning, and Striped Beefing were also shown very finely.

### POTATOS.

Four collections of twelve kinds only were staged; the finest, certainly rather large samples, though handsome also, coming from Mr. Howard, of Bridge, Canterbury—a veteran grower, who had of coloured kinds, Vicar of Laleham, The Dean, Reading Russet, Beauty of Hebron, and Brownell's Best; and of white kinds, Snowflake, Ashtop Fluke, Radstock Kidney, and Schoolmaster, good; Mr. R. Dean, Ealing, came 2d with very pretty samples of The Dean, Rosebud, Edgecote Purple, Cardinal, and Vicar of Laleham, coloured sorts; and of white kinds, Magnum Bonum, Chancellor, Prime Minister; Lily White, and Recorder.

Mr. C. Wiles, Edgecote, Banbury, was 3d in the class for six dishes—five lots competing. The places were taken in the same way by the same exhibitors; and kinds above named were chiefly shown. Mr. Howard had The Dean and Chancellor in fine form; and Cosmopolitan in the second lot was admirable.

### SPECIAL PRIZES.

Thanks to the generosity of Messrs. Sutton & Sons, of Reading, who offered liberal prizes for a collection of six kinds of vegetables, there was a fine show of these, the quality being generally excellent.

Mr. Miller, gr. to W. H. Long, Esq., Rood Ashton, was 1st, having handsome Rousham Park Onions, Autumn Giant Cauliflowers, Stamfordian Tomatos, Schoolmaster Potatos, Aigburth Brussels Sprouts, and excellent Carrots. Mr. Haines, Coleshill Gardens, Wilts, was 2d, having superb Rousham Park Onions, Autumn Giant Cauliflowers, Lyon Leeks, and Carrots, but his Tomatos and Potatos were a little weak; Mr. May, gr. to Captain Le Blanc, Barnet, was 3d; Mr. Waite, Glenhurst, Esher, 4th; and Mr. Waterman, who had dwarf Beans, good Asparagus, and Mushrooms, 5th.

Messrs. Webb & Sons, Wordsley, offered prizes also for six kinds of vegetables, but the competition was limited to six collections. Here Mr. Haines was 1st, with Cauliflowers, Student Parsnips, Leeks, Anglo White Onions, Carrots, Potatos, &c.; Mr. May was 2d, having fine stems of his selected Brussels Sprouts, a perfect strain; and Mr. Waite was 3d.

Messrs. Sutton & Sons exhibited a large and varied collection of Potatos; Messrs. C. Lee & Sons a very fine and interesting collection of Apples and Pears, some hundred dishes; Mr. T. Laxton had samples of new Apples and Potatos.

## RICHMOND HORTICULTURAL: November 5 and 6.

THIS popular Society held its fifth annual Chrysanthemum Show in the spacious rooms behind the "Castle" Hotel, Richmond, on the above dates, and was enabled to present a first-class display of autumn produce in plants, flowers, fruits, and vegetables to its patrons, amongst whom was the President, the Duke of Teck, who, with the Duchess of Teck and their elder daughter, visited the show early on the 5th inst. A class for decorative groups of the usual mixed order afforded Mr. Bruchehaus, manager to the Messrs. Hooper & Co., Twickenham, opportunity to display his admirable ability in the arrangments. The usual base of Ferns edged with Panicum variegatum, and topped with Palms, Crotons, Dracænas, Caladiums, &c., was richly lit up with flowering plants, Tree Carnations, Gloxinias, Gesneras, Cyclamens, &c. Mr. W. Brown was 2d in this class; and Mr. J. R. Chard, Clapham, had a very meritorious arrangment of Palms and Ferns, the former being elevated on mounds of moss, while Ferns were dotted and irregularly placed with much taste. The Palms were scarcely good for the purpose, and for the time of year some life was wanting in the group, but still the effort at some originality was of so meritorious a kind as to evoke high praise

### GROUPS.

The finest group of Chrysanthemums in pots came from Mr. W. Campion, gr. to Thomas Cave, Esq., Richmond. It was of the usual solid, massive character, the plants well grown and foliaged, and the blooms of the finest quality, including considerable variety; Mr. J. Munro, gr. to E. D. Paul, Esq., Cambridge House, Twickenham, came 2d with large tall plants, Japanese kinds preponderating. Mr. Brookes, gr. to J. B. Hilditch, Esq., Richmond, was 3d. The only six trained plants came from Mr. Sallows, gr. to J. J. Flack, Esq., Twickenham, and included some good specimens of Hiver Fleur, L'Ile des Plaisirs, admirably bloomed, and the usual trio of the Rundles. The three latter again appeared, *ad nauseam*, in the class for three trained standards, the best coming from Mr. H. Elliott, gr. to Mrs. Harrison, Richmond; Mr. Sallows coming 2d with the same kind. I hope the day is not far distant when only one of this trio will be admitted into any small collection.

### TABLE PLANTS.

A fine line of some three dozen of table plants were staged, the best half-dozen coming from Mr. Chard, who had pretty and rich coloured Crotons, Dracænas, and Palms. The best six Chinese Primulas, all single whites, came from Mr. Garrod, gr. to J. M. Lindell, Esq., Twickenham, and the best six berried plants for table decoration were from Mr. Newell, gr. to Mr. E. Saunders, Wimbledon, and were charmingly fruited, Prince of Wales, yellow, pendent fruited, and Sutton's Scarlet Tom Thumb, erect-fruited Capsicums. A prettily arranged basket of decorative plants won the 1st prize in that class from the Messrs. Hooper & Co.; Mr. A. Bates, gr. to Mrs. Meek, Poulett Lodge, Twickenham, coming 2d, with some admirably flowered plants. A noticeable feature among honorary groups was a fine collection of pot Cyclamens, from Messrs. Page of Teddington, who now take high rank amongst market growers of these winter flowers.

### CUT BLOOMS.

The chief attraction of the show was no doubt found in the classes for cut blooms of Chrysanthemums, which were all well filled, and there were no less than five entries for the premier class of forty-eight blooms, half incurved and half Japanese, wherein Mr. Gibson, gr. to J. Wormauld, Esq., Wimbledon, was 1st, with some good blooms, though not equal to what may be looked for at later shows. His Japanese included good Jeanne Delaux, Elaine, Mr. Delaux, Peter the Great, Flamme de Punch, &c., and of incurved were Lord Wolesley, Refulgence, Empress of India, Novelty, Prince Alfred, Alfred Salter, and Midshipman; the 2d and a fine lot of blooms came from Mr. Sullivan, gr. to D. B. Chapman, Esq., Roehampton; and Mr. Elphick, gr. to J. Chetton, Esq., Reigate, was 3d.

With twenty-four incurved flowers, Mr. Sullivan was 1st, his stand including fine Prince Alfred, Alfred Salter, Lord Wolseley, Madame Madeline Teizer, John Salter, Princess Beatrice, &c.; Mr. J. Bennett, Wimbledon, was 2d.

A fine lot of blooms were shown in the class for twelve incurved flowers, the finest, from Mr. Coombs, being Queen of England, Empress of India, Golden and White, Lord Alcester, A. Salter, Prince Alfred, Prince of Wales, Lord Wolseley, Jeanne d'Arc, Mr. Bunn, and White Beverley. Mr. Elliott was 2d in this class, and Mr. Woodgate, gr. to Lord Wolverton, Coombe Wood, 3d.

The class for twenty-four Japanese was a good one, the best lot coming from Mr. Bennett, who had in good form F. A. Davis, Roseum superbum, M. H. Jacotot, Diana, Criterion, Mdlle. Lacroix, Madame C. Audiguier, &c.; Mr. Woodgate was 2d, with small but exceedingly fresh blooms; and Mr. Monro came 3d.

With twelve Japanese, Mr. Benson, gr. to W. H. Roots, Esq., Kingston, was 1st; Mr. Monro 2d, and Mr. Coombs, Teddington, 3d.

Mr. Benson had the best six Japanese blooms in Criterion, M. Lacroix, Soleil Levant, Val d'Andorre, Comte de Germiny, &c.; Mr. Bennett was 2d.

Mr. Munro had the finest six Japanese of any one kind in Madame C. Audiguier, and Mr. Brown the finest six incurved of one kind in grand blooms of Jeanne d'Arc; Messrs. Sullivan, Bennett, and Gibson having the best twelve Anemone flowers in the order placed.

### BOUQUETS.

Bouquets were found in two classes. In the one the best came from Messrs. Martin & Co., of Kensington, and in the other from Mr. W. Brown, of Richmond. Both were chiefly composed of white flowers relieved by small ones of mauve, and Cattleyas, Pleiones, &c., with Fern fronds. Some of the competing bouquets were too flat and stiff, others too much overdone with variety in flower and colour.

The prettiest six buttonhole and ladies' bouquets came from Mrs. Skewes Cox, of Richmond, whose arrangements were perfect, each pair matching—white Tuberoses and Blue Violets in one case, and Safrano Rosebuds and scarlet Bouvardias in another were charming. Miss H. B. Smith, Ealing Dean, showed here two superb bouquets, a floral fan, and several sprays for ladies, as described in our Ealing show report last week. These arrangements elicited much admiration.

### TABLE STANDS

were largely shown in several classes—one for Chrysanthemums and Ferns, of which Mr. Chard had the best; one for vases adorned with hardy foliage and berries, the best coming from Mr. Tipping, of Richmond; and a class for three stands, the 1st prize going to Mrs. Ashby, Richmond, but rather overdone, the colour of the scarlet Anthurium spathes killing Poinsettias.

### FRUITS.

A fine collection of twenty dishes was shown by Mr. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, who had superb Black Alicante, Gros Maroc, Muscat of Alexandria, and Alnwick Seedling Grapes, Pine, Apples, Pears, Medlars, &c.

The best six dishes of fruits in two separate classes came in each case from Mr. Bates, who had capital Muscat of Alexandria and Alicante Grapes, Pine, Apples, Pears, &c. Mr. Campion was 2d in one class, and Mr. Munro in the other.

Mr. Campion had the best two bunches of black Grapes in finely finished Gros Colmar, almost blue; Mr. Howe, gr. to H. Tate, Esq., Streatham, coming 2d, with fine Alicantes.

Mr. Bates had the best pair of bunches of white Grapes in superbly finished Muscat of Alexandria, Mr. Osman, Chertsey, coming 2d, and Mr. Campion 3d, with same kind.

There was a large competition in that for four dishes of Pears, Mr. W. Davis, Teddington, having the best in Louise Bonne, Flemish Beauty, Doyenné du Comice, and Beurré Bosc.

The best four dishes of Apples, two to be of dessert kinds and two of kitchen kinds, came from Mr. Coombs, Sheen House Gardens, who had fine Ribston and King Pippins, Nelson's Glory, and Reinette du Canada. Mr. Chadwick, gr. to E. M. Nelson, Esq., Ealing, was next, with good Hanwell Souring, and Warner's King and some dessert kinds. There were fourteen lots in this competition.

The best Tomatos, Stamfordian, came from Mr. Waite, gr. to the Hon. Colonel Talbot, Esher, who also had the best collection of six kinds of vegetables in fine Rousham Park Onions, Magnum Bonum Potatos, Brussels Sprouts, Giant Cauliflowers, Intermediate Carrots, and Tomatos—a first-class lot of vegetables.

There was a capital competition in the cottagers classes also. *A. D.*

## KINGSTON AND SURBITON CHRYSANTHEMUM: November 10 and 11.

THE ninth annual show of the above Society was held in the Drill Hall, Kingston, on Tuesday and Wednesday last, and, as is its wont, proved equal to the best display of the kind previously held during the season. An especial interest attaches to this exhibition, owing to the fact that a Challenge Cup, value 25 guineas, is annually offered in open competition, and when it has been won by the same exhibitor on two separate occasions it becomes his absolute property. The Kingston Drill Hall is especially adapted for show purposes; comprising a single span-roof of large extent, it admits of the grouping of plants in every form around the walls. The several cross tables were embellished with dinner-table plants of a small size: and ample room was allowed for the arrangement of cut blooms in classes, and for their examination by all. The present display, when compared with those held by this Society in past years, was fully equal to the best of them, one exception being a falling off in the matter of pot-grown pompons, —entirely due to the frosts experienced during the early autumn. Most of the groups arranged for effect were of a very high order of merit, giving the judges some trouble to adjudicate upon them.

### CUT BLOOMS.

The forty-eight blooms, Japanese and incurved, the trial for the Challenge Vase, consisting of as many as six lots, found W. H. Myers, Esq. (gr., Mr. Molyneux), the winner, and a finer collection of forty-eight blooms, consisting of twenty-four Japanese varieties and twenty-four incurved, taken altogether, it is difficult to conceive. Mr. J. Wormauld, Morden Park, was a good 2d, his Japanese varieties being equal to the best, but his rival had much the best incurved flowers; W. Furze, Esq., Teddington (gr., Mr. E. Coombes), was 3d; and C. S. Wild, Esq. (gr., Mr. W. Rogers), 4th.

Twenty-four blooms, incurved, were also warmly contested, with the result that Mr. Molyneux was again winner of the 1st prize; Mr. G. Woodgate, gr., Warren House, Kingston, was 2d; W. Furze, Esq., 3d; and Mr. W. G. Drover, florist, Fareham, a good 4th.

Mr. Alderman and Sheriff Evans (gr., Mr. A. Carter) was 1st with twelve incurved blooms, staging a very neat stand; Mr. R. Few, Walsley Grange, Esher, 2d; and Captain Cundy (gr., Mr. J. Watson), a good 3d; Mrs. Dunnage, Surbiton Hill (gr., J. Crossford), 4th.

Twenty-four Japanese blooms was an excellent class, and Mr. Molyneux again carried off 1st prize, with a uniformly fine lot, comprising varieties similar to those shown by him in the 48's; Mr. R. Few was 2d, and Mr. G. Woodgate 3d; Mr. J. Munro, Cambridge House, securing the 4th.

Twelve Japanese varieties again found Mr. A. Carter

1st; Messrs W. & G. Drover, Fareham, 2d; and Mrs. C. Izod (gr., Mr. Holden), 3d.

Twelve Anemone-flowered varieties was not so formidable a competition as usual, nevertheless a neat display was made by Lady Bowater, Richmond (gr., Mr. C. Slade), and Mr. J. Wormauld, the latter of whom won the 1st prize.

Twelve reflexed.—The blooms from Mr. Molyneux were at the head of the prize list, his Cullingfordi being very fine; Mr. Furze was 2d, and Lady Bowater 3d.

Six Japanese varieties.—Mr. Molyneux was also the winner of the premier prize for blooms of one variety, staging Belle Pauline in grand style; to this bloom the judges subsequently awarded a First-class Certificate.

Six incurved.—As with the preceding so with this class, Mr. Molyneux was 1st; Mr. T. A. Benson 2d, with good blooms of Jeanne d'Arc.

Twelve Japanese Anemones.—The 1st prize was awarded to Mr. Molyneux, the variety Fabias de Maderanaz being the best shaped of his group.

Anemone pompons were a pretty display, the 1st prize being won by Mr. W. H. Roots, with Mr. Molyneux 2d.

Many minor classes were ably filled by amateur growers, and some promising seedlings staged by Messrs. Jackson & Son, Kingston, two or three of which received certificates, but were unfortunately unnamed.

Flowering plants, not Chrysanthemums, were exceptionally good, a group shown by W. Evill, Esq. (gr., Mr. T. A. Glover), consisting mainly of Ferns, Palms, and Orchids in flower; and another by Mr. J. R. Greaves (gr., Mr. G. Filsell), made up of Palms and flowering plants, of low stature, arranged on a groundwork of Maidenhair Ferns, proved so equal in point of merit that, although possessing very distinctive features, the judges awarded them equal 1st prizes.

The best group of Chrysanthemums arranged for effect, quality of bloom to be taken into consideration, was won by A. S. Price, Esq., Parkside House, Ewell (gr., Mr. J. Bass), the quality of the blooms, and in some instances the dwarfness of the plants, being all that could be desired; Mr. W. Ewell, Worcester Park, was an admirable 2d.

Other plants deserving of notice were three trained Japanese, Mr. Few showing the best. For three standards, L. Harrison, Esq. (gr., Mr. H. Elliott), was 1st; J. Shand, Esq. (gr., Mr. H. Trussler), 2d; and with six trained incurved Mr. Few was 1st and Mr. Shand 2d.

MISCELLANEOUS.

There was in addition a neat display of epergnes, button-hole bouquets, &c., and collections of fruit, amongst the latter being a fine display comprising collections of Grapes and hardy fruits by Messrs. Jackson & Son, the former being sufficiently good to receive recommendation from the judges. Besides neat displays of table plants, Cyclamens, Chinese Primulas, &c., in the classes set apart for them. Messrs. H., Page & Sons, Grove Nursery, Teddington, staged a large bank of Cyclamens, which were exceptionally fine in bloom for so early a date. *W. E.*

## HIGHGATE, FINCHLEY, AND HORNSEY CHRYSANTHEMUM.

THE above Society inaugurated its first exhibition in Northfield Hall, Highgate, on Thursday and Friday, Nov. 5 and 6, and achieved a success sometimes not obtained by more important societies in a financial sense, and the hearty support received from the neighbouring gentlemen and their gardeners, providing one of the prettiest floral treats that has been seen in the locality. Although the exhibition was not large the exhibits were excellent, many of them being of a stamp that would place their fortunate owners in the front rank at Chrysanthemum shows. In the hall the vivid colours of the Chrysanthemum flowers were set off by the choice table plants, Primulas, &c., and further enhanced by two fine groups of plants from Messrs. B. S. Williams and W. Cutbush & Son. Amongst the groups Mr. James Brooks, gr. to W. Reynolds, Esq., The Grove, Highgate, whose exhibits generally were of the first order of merit, staged a group, not for competition, which received a Certificate of Merit of the National Chrysanthemum Society, which was well merited, a large percentage of the blooms being up to "stand" form. Several baskets of plants were suspended from the roof.

There were also several collections of fruit, vegetables, &c., which afforded a welcome contrast to the other exhibits.

PLANTS.

The principal awards were:—For the best single specimen plant.—1st, Mr. J. Brooks, gr. to W. Reynolds, Esq., The Grove, Highgate, with a good plant of Elaine; 2d, J. Keller, Esq., Middle Lane, Hornsey; 3d, Mr. Hodges, gr. to Mrs. Crossley, Copley Dene, Highgate.

For the best group of Chrysanthemums.—1st, Mr. Theobald, gr. to A. Gosslet, Esq., with a group almost painfully regular and exact, but composed of a number of good plants well bloomed; 2d, Mr. John Henry Wilty, Highgate New Town, with a group of well cultivated plants, dwarf, and fair as to blooms; 3d, Mr. Hodges, with what we considered the neatest group of the lot, as the formality which prevailed in the others gave way to freer arrangement, the whole group sloping more gradually, and was margined with pompon and Anemone varieties; the individual blooms were not so fine as the others, though the difference was not very marked.

The rest of the plant classes were not so good as those mentioned.

CUT BLOOMS.

For twenty-four incurved.—1st, Mr. J. Brooks, with really fine blooms of Beethoven, White and Golden Empress of India, Golden Beverley, A. Salter, Lord Alcester, White and Golden Queen of England, Mr. Bunn, White Globe, Prince Alfred, Bronze Jardin des Plantes, John Salter, Mrs. Heale, Barbara, White Venus, Refulgence, and Imogene; 2d, Mr. B. Calvert, gr. to G. Kent, Esq., Highgate, with good Guernsey Nugget, Princess of Wales, and White Globe; 3d, Mr. J. H. Wilty.

For twelve incurved, Mr. Hodges was 1st, with a clean lot; 2d, Mr. W. Theobald.

For twenty-four Japanese Mr. J. Brooks was also 1st, with a grand lot, for which he was awarded the National Chrysanthemum Society's Certificate of Merit. His stand contained the following:—Madame C. Audiguier, Baron de Prailly, Fair Maid of Guernsey, Elaine, Japan Fleuri, Bouquet Fait, Monsieur Astorg, George Gordon, Duchess of Albany, Chinaman, Thunberg, L'Incomparable, James Salter, Peter the Great, J. Delaux, Mastic, &c.; 2d, Mr. J. H. Wilty, with a neat lot, but far behind the former; 3d, Mr. W. Theobald.

For twelve Japanese Mr. Hodges was 1st, with a nice lot; 2d, Mr. J. Brittain, gr. to F. Rickett, Esq.; 3d, Mr. H. Neary, gr. to Rev. R. W. Powell, Hornsey.

For six incurved.—1st, Mr. Thomas Caryer, gr. to Mr. A. G. Meissner; 2d, Mr. H. Neary; 3d, Mr. H. Rowson, gr. to H. R. Parkinson, Esq., Hampstead Heath.

For six Japanese.—1st, Mr. T. Caryer; 2d, Mr. H. Neary.

For twelve Anemone-flowered.—1st, Mr. Theobald; 2d, Mr. A. R. Rundell.

For twenty-four incurved.—1st, Mr. B. Calvert. For twelve ditto.—1st, Mr. Jas. Brooks; 2d, Mr. Thos. Taylor, gr. to J. Johnstone, Esq., Hampstead; 3d, Mr. B. Calvert.

For twelve Japanese.—1st, Mr. J. Brooks; 2d, Mr. J. Brittain; 3d, Mr. Thos. Taylor.

Several "half-dozens" of table plants were shown.

SPECIAL PRIZES, &c.

Mr. J. Brooks was 1st for three plants of Lady Selborne. Mr. J. Wright, of the Middle Temple, had a good stand of twenty-four, twelve each incurved and Japanese. Messrs. Dixon, of Hackney; T. S. Ware, Tottenham, and others, showed neat stands of bloom or plants.

## STOKE NEWINGTON CHRYSANTHEMUM: November 9 and 10.

THE above Society held its annual exhibition in the Assembly Rooms, Church Street, Stoke Newington. This is the place where the improved cultivation of the Chrysanthemum had its birth, and which has still one of the best shows in London, and visitors this year would not be disappointed in this respect, as the exhibits were quite up to previous good quality, if (?) they are a little deficient in quantity. Chrysanthemum shows, as a rule, are arranged so as to have a pleasing effect, and this one, under the able superintendence of Mr. Goldsmith and Mr. Hicks, is no exception to the rule. The space at disposal was just sufficient to allow of all the exhibits being seen to the best advantage, which is not the case where "crowding" has to be resorted to.

PLANTS.

Nine Chrysanthemums in pots.—Mr. W. Monk, gr. to W. Fowler, Esq., Forest House, Leytonstone, was 1st, with plants quite up to Mr. Monk's well known form. The varieties were Tokio, Mrs. G. Rundle, Triomphe du Nord, Mrs. Dixon, La Nymphe, G. Glenny, Dr. Sharpe, John Salter, and Sœur Melanie; 2d, Mr. G. Davey, gr. to C. Paine, Esq., Cedar House, Stamford Hill, whose best were Madame B. Rendatler, Mrs. G. Rundle, and Mr. Drain; 3d, Mr. H. Lovegrove, gr. to H. Spicer, Esq., 14, Aberdeen Park, N.

Four standard pompons in pots.—Mr. H. Lovegrove was 1st.

Three standards, large-flowering varieties.—1st, Mr. R. Bass, gr. to Miss Cotton, Davis Lane, Leytonstone, with John Salter, Guernsey Nugget, and Prince of Wales; 2d, Mr. H. Lovegrove. For four ditto.—1st, Mr. S. Gilbey, gr. to B. Booth, Esq., The Cazenoves, Upper Clapton, with good examples of Bouquet Fait, Gloire de Toulouse, Cossack, and Cry Kang; 2d, Mr. W. Monk, with Madame B. Rendatler, Mrs. Dixon, Mrs. G. Rundle, and Prince of Wales; 3d, Mr. H. Lovegrove.

Four plants, large-flowering varieties.—1st, Mr. S. Gilbey, with a grand exhibit of L'Ile des Plaisirs, Dr. Macary, Dr. Sharpe, and Bouquet Fait; 2d, Mr. W. Monk, with Lord Derby, Venus, Prince of Wales, and M. C. Hubert; 3d, Mr. J. Harding, gr. to F. Wright, Esq., Rosslyn, Stamford Hill.

Six foliage plants.—Mr. E. Easey, gr. to W. Vokings, Esq., 22, Aberdeen Park, N., was 1st; and for six plants suitable for table decoration Mr. W. Challis, gr. to G. Dare, Esq., Albion Lodge, Stoke Newington. These two last classes, which were well contested, materially helped the attractiveness of the exhibition.

CUT BLOOMS.

Twenty-four incurved (nurserymen and gardeners of Hackney and Finsbury only).—Mr. S. Gilbey was 1st; he also with this collection gaining the prize of £4 for the best twenty-four incurved in the show. He staged grand examples of Empress of India, Alfred Salter, Golden Queen, Jeanne d'Arc, Hero of Stoke Newington, Jardin des Plantes, Mr. Bunn, John Salter, Mr. Shipman, Bronze Jardin des Plantes, and Prince and Princess of Wales; 2d, Mr. W. Payne, gr. to W. A. Mitchell, Esq., Greenville, Upper Clapton, whose best were Alfred Salter, Princess Imperial, Golden Empress, and Guernsey Nugget. Twelve ditto.—1st, Mr. W. Payne; 2d, Mr. W. Martin, gr. to H. Matthews, Esq., The Cedars, Woodbury Down. Six ditto.—Mr. S. Gilbey, 1st; 2d, Mr. W. Payne; 3d, Mr. G. Whitehouse, gr. to Dr. Reynolds, Stamford Hill.

Twelve incurved (amateurs).—1st, Mr. F. Bingham, 22, Manor Road, Stoke Newington, with a very creditable fresh-looking lot; 2d, Mr. W. Goldsmith, Grove Road, Stamford Hill; 3d, Mr. F. France, 82, Park Road, Ground End, Hornsey. Six ditto.—1st, Mr. F. Bingham; 2d, Mr. W. Holland, Grove Lane, Stamford Hill; 3d, Mr. F. France. Six Japanese ditto.—1st, Mr. W. Holland; 3d, Mr. F. France; 2d withheld.

Twenty-four incurved blooms, open.—Mr. Monk, 1st, with good Mrs. Heale, Nil Desperandum, Golden Empress, Refulgence, John Salter, Lord Alcester, Lady Harding, Empress Eugénie, Mr. Bunn, Baron Beust, and Geo. Glenny; 2d, Mr. Peers, gr. to F. Cater, Esq., Enfield Highway, with good Queen of England, Prince Alfred, Jeanne d'Arc, and Mr. Bunn; 3d, Mr. Calvert, gr. to G. Kent, Esq., Southwood, Highgate. Twelve ditto.—1st, Mr. Monk; 2d, Mr. Peers; 3d, Mr. Calvert.

Twelve blooms of Japanese, distinct.—1st, Mr. Monk, with good Sarnia, Val d'Andorre, Comte de Germiny, Fair Maid of Guernsey, Golden Dragon, Elaine, Madame B. Rendatler, Peter the Great, Madame de Sevin, and Fulton; 2d, Mr. Peers, with good Comte de Germiny, Madame C. Audiguier, Thunberg, Mons. Tarin, Hiver Fleur, and Peter the Great; 3d, Mr. Calvert. Six blooms ditto.—1st, Mr. Calvert; 2d, Mr. Monk; 3d, Mr. Gilbey.

Thirty-six blooms, twelve Japanese, twelve incurved, and twelve large Anemone.—1st, Mr. Martin, whose best were Fair Maid of Guernsey, Sultan, J. Delaux, and Elaine; Emily Dale, Prince Alfred, John Salter, Lord Alcester, and Lord Wolseley; and Prince of Anemones, Glück, Lady Margaret, Minnie Chate, and Georges Sands; 2d, Mr. Harding.

The best vase of twelve Chrysanthemums.—Mr. Jones, gr. to E. C. Goble, Esq., Stoke Newington.

NOT FOR COMPETITION.

A magnificent stand of twenty-four distinct incurved sorts, shown by Mr. T. Cochrane, Superintendent of Finsbury Park, were very highly commended, and well deserved it. Mr. W. S. Smith, of 128, High Street, Stoke Newington, staged a very showy table of choice fruits and flowers, which could not fail to be much admired. *C. D.*

## GUADALUPE ISLAND, LOWER CALIFORNIA.

TEN years ago "This sweet lone isle amid the sea"—I am not responsible for the application of this line—was first visited by a naturalist, in the person of Dr. Edward Palmer, well known from the important botanical collections he has made in Northern Mexico and in the southern territories of the United States. There is something like a charm attaching to the animal and vegetable life of the remote islands of the great oceans, for most of them support plants and birds and other organisms peculiar to themselves, often, however, associated with plants, at least, of almost world-wide littoral distribution; but the presence of the latter element is due to situation and the nature of the shores, concerning which I have something more to say later on. Guadalupe Island is about the size of the Isle of Wight, and is in 29° north latitude, about 100 miles from the western coast of Lower California, lying in the course of the great ocean current which flows southward from Alaska. It consists of a large tableland about 3000 feet high, its volcanic rocky sides being in most places too precipitous for even a goat to climb, and almost wholly barren. The plateau is interrupted by a central ridge, some points of which rise 1000 feet higher; but the tableland portion of the island is pleasant, with a considerable breadth of open grassy plain, some miles of Cypress woods, and several springs of excellent water; although there are no streams that flow after the winter rains have ceased.

The climate of Guadalupe is described as colder than that of the coast regions of even the central part of California, a circumstance due to its position in the direct path of winds and currents that sweep down from the arctic regions. Fogs are heavy and prevalent, especially in the northern and in the higher parts of the island; yet the south is sunny and excessively hot and dry in the summer, so much so that all vegetation is in some seasons completely scorched up. As already mentioned, it is colder than the opposite coast, especially in the northern exposures; ice an inch in thickness has been observed in the middle of the island, and snow to the depth of 2 inches, followed by several days of cold rain. Yet in the northern extremity it keeps clear and warm, and it is warm in the lower cañons or ravines.

Dr. Palmer collected 110 species of flowering plants, which are communicated by Mr. Sereno Watson in the eleventh volume of the *Proceedings of the American*

*Academy of Arts and Sciences*. Omitting a species of Heuchera, the specimen of which was insufficient for determination, Watson classifies them in five groups, namely:—1, introduced species, twelve; 2, species ranging from the Atlantic to the Pacific States of North America, nine; 3, species found throughout California, or at least as far north as San Francisco, forty-nine; 4, species found in Southern California, below Los Angelos, or in Arizona, eighteen; and, 5, species peculiar to the island, twenty-one.

Last spring Mr. E. H. Greene visited the island, and he publishes the particulars of his week's sojourn there, together with the botanical results, in the *Bulletin* of the Californian Academy of Science, from which it appears that he collected fourteen species that were not in Dr. Palmer's collection. Of these seven are Californian, some of them having a wider distribution; four are common European weeds, and two are described as new species; whilst one, a seedling Arctostaphylos, is indeterminable.

Guadalupe has never been inhabited, according to Greene, except very temporarily, by shipwrecked or seal-hunting sailors, or fugitives from Mexico. But since the beginning of 1884 a small band of some forty Lower Californian soldiers has been stationed there by the Mexican Government, "to prevent the wholesale slaughter of the goats, of which there are many thousands still on the island, notwithstanding the fact that for some two or three years prior to 1884 many a cargo of goat skins and tallow had been taken to San Diego."

In this, as in so many other remote islands, goats were originally introduced for the purpose of supplying food to shipwrecked or passing mariners; and the effect in many instances has been the almost complete extirpation of the indigenous vegetation. How long ago goats were first introduced into Guadalupe is uncertain, though probably towards the end of the last century. Dr. Palmer mentions them among the agents affecting the vegetation, yet without any specific account of their having proved destructive. Greene, however, specially alludes to the favourable effect on the vegetation "in the very best part of the island" the small garrison has had, as the goats, in consequence of being constantly hunted, avoid the part where the soldiers encamp.

From the figures given above, and the relationships of the endemic species, it is evident that the flora of Guadalupe Island is essentially Californian, as distinguished from the Mexican flora, to which belongs the vegetation of the intervening peninsula of Lower California. Respecting the plants which by their abundance or prominence gave character to vegetation, Palmer says:—"The 'Sage-brush' and 'grease-woods' of the Basin [the 'Great Basin' of California] are represented by an Artemisia and an Atriplex, which share with a Franzeria in covering large tracts, and in protecting the soil and the smaller animals from the winds and sun. Trees are numerous over much of the island, chiefly coniferous: a Pine, a Juniper, and a Cypress, and a small Oak. To these is to be added the Palm, which is frequent in the southern cañons, growing to a height of 40 feet." Among introduced plants Erodium cicutarium was more abundant than any other plant in the island, being found everywhere. The herbaceous and shrubby endemic plants belong to genera represented in California, or exclusively Californian and eastward of it, and the species are most closely allied to those of the Californian region. The Pine is a two-leaved variety of Pinus insignis; the Cypress, Watson describes as a new species (Cupressus guadalupensis), but it is very closely allied to the beautiful Californian C. macrocarpa; and the Juniper is referred to Juniperus californica. The Oak (Quercus tomentilla, Engelmann) is endemic, and allied to the common Californian Q. chrysolepsis; and the endemic Palm (Erythræa edulis) is represented on the mainland by a second species recently discovered in the Tantillus Mountains, Lower California.

It is interesting to compare Mr. Greene's observations on the various elements of the vegetation ten years later than Dr. Palmer, especially in relation to the very rapid disappearance of some of the endemic species and other formerly prominent indigenous ones. Palmer found the Cedar in irregular groups in the middle of the island, apparently common enough; now it is already becoming rarer, and Greene says he cannot guess at the cause of its destruction. It would seem, however, that the existing trees have mostly reached the limit of their age, and the species is disappearing because the numerous goats prevent seedlings from growing up and replacing the older generations. Formerly, Greene supposes, it must have occupied almost the entire plateau of the northern half of the island; but now upon the greater part of this tract only the fallen decaying trunks remain. It is a pity so noble a tree should die out. It has the conical-shaped head of C. macrocarpa, as it grows in this country, not as it grows in its home, where its habit is Cedar-like, and reaches a height of 50 feet, with a trunk sometimes as much as 25 feet in circumference.

The Juniper in Palmer's time was all over the middle of the island and occasional at the south end, in the ravines and valleys, forming groves about 15 feet high. Now, we are informed, it is on the verge of extinction—"in the middle of the island only three trees that were not quite dead; and on these three only a few tufts of green twigs gave the feeble sign of exhausted vitality. Only on a south-eastern cliff, hanging over the sea, did I find a tree vigorous enough to be bearing some well-formed fruit."

The Pine still exists in groves of considerable extent on the high narrow ridge forming the north-eastern extremity of the island; but the handsome Oak, a spreading tree 50 feet high, has dwindled down to about half-a-dozen individuals; whereas Palmer states that it was frequent at the north end and occasional in the cañons on both sides of the island. Concerning the Palm Greene is silent. On the ascent from the narrow beach to the plateau the most conspicuous plants at the time of his visit were Senecio Palmeri, a handsome shrub, 3 or 4 feet high; Sphæralcea sulphurea, Hosackia ornithopus, and Convolvulus macrostegius, all endemic species, associated with the Californian Brodiæa capitata, which was also exceedingly common on the tableland itself.

The very widely spread littoral element alluded to at the beginning of this sketch is wanting in the shores of Guadalupe; whether this is wholly due to the nature of the coast, or partly due to the direction from which the oceanic currents come that touch the island, is not clear from the information available. In the *Botany of the "Challenger" Expedition* I have brought together all the trustworthy evidence I could find bearing upon the dispersal of seeds and plants by oceanic currents, &c., and I have there pointed out that many of the plants thus conveyed are not exclusively littoral, but actually grow and thrive equally well inland. More evidence is wanted on this subject, and that is my reason for mentioning it here; but there can be no doubt that the sea has played a most important part in covering the distant coral islands of the Pacific and Indian Oceans with vegetation, thereby rendering them inhabitable.

In conclusion, I may, perhaps, be permitted to repeat a curious fact concerning the Cocoa-nut, recorded in Mr. H. O. Forbes' book on the Malayan Islands. It is very well known how widely the Cocoa-nut Palm is dispersed on tropical sea-shores, both insular and continental; and the question has often been discussed how far oceanic currents have been instrumental in effecting this wide distribution. Some writers maintain that it is mainly, if not entirely, due to human agency; and one argument employed against oceanic agency was that the Cocoa-nut would not germinate unless buried. This is very likely correct, as to bare ground, at all events; but, as I have stated elsewhere, the waves often bury the objects they cast ashore; and Mr. Forbes observed that the burrowing crabs, so numerous in the Keeling and other islands, sometimes perform the operation when burrowing very near the surface. *W. Botting Hemsley*.

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A METHOD OF WATERING PLANTS IN INDIA.—At a meeting of the committee of the Agri-Horticultural Society of Madras, Deputy-Surgeon-General John Shortt, concerning watering in India (on the Shervaroy Hills) said:—"I also resort to the *Gurrah* mode of watering plants, that is, the common water-pot styled *codum* on the Madras side, having a small mouth. It has a small hole knocked into the bottom, and the pot is buried to a depth of one-third its size, as near to the stem of the plant as possible, and it is kept constantly filled with water, which very gradually oozes into the soil through the minute opening at the bottom, giving moisture to the roots of the plants without causing waste by spilling or evaporation. I find this method a great success."




*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 11, 1885.

| MONTH AND DAY. | BAROMETER. Mean Reading Reduced to 32° Fahr. | BAROMETER. Departure from Average of 18 years | TEMPERATURE OF THE AIR. Highest. | Lowest. | Range. | Mean for Day. | Departure of Mean from Average of 30 years. | HYGROMETRICAL Deductions from Glaisher's Tables 7th Edition. Dew Point. | Degree of Humidity Sat = 100 | WIND. Average Direction | RAINFALL. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 5 | 29.46 | —0.33 | 45.5 | 37.5 | 8.0 | 42.0 | —2.5 | 34.3 | 72 | S S W. | 0.02 |
| | | | | | | | | | | N N W | |
| 6 | 30.07 | +0.27 | 42.0 | 30.3 | 11.7 | 36.6 | —8.5 | 32.2 | 86 | N N W. | 0.00 |
| | | | | | | | | | | S S W. | |
| 7 | 30.17 | +0.37 | 50.8 | 37.0 | 13.8 | 44.3 | —0.4 | 38.1 | 81 | S W. | 0.00 |
| | | | | | | | | | | S E. | |
| 8 | 30.14 | +0.33 | 45.0 | 31.9 | 13.1 | 39.4 | —4.9 | 37.6 | 95 | N W. | 0.10 |
| | | | | | | | | | | N N W | |
| 9 | 30.13 | +0.33 | 45.0 | 41.5 | 3.5 | 43.0 | —0.9 | 41.2 | 98 | E N E | 0.00 |
| 10 | 30.14 | +0.34 | 47.5 | 42.0 | 5.5 | 44.5 | +1.0 | 42.7 | 95 | E S E. | 0.05 |
| | | | | | | | | | | E N E | |
| 11 | 30.10 | +0.30 | 44.2 | 40.5 | 3.7 | 42.0 | —1.2 | 41.6 | 98 | E N E. | 0.09 |
| Mean | 30.03 | +0.23 | 45.7 | 37.2 | 8.5 | 41.8 | —2.5 | 38.2 | 89 | Variable | 0.24 |

Nov. 5.—Very dull day.
" 6. Dull morning, fine afternoon.
" 7.—Dull day.
" 8.—Very dull day, little rain in afternoon.
" 9. Dull day.
" 10.—Drizzling rain from early morning nearly all day.
" 11.—Drizzling rain throughout the day.

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LONDON: *Atmospheric Pressure*.—During the week ending November 7, the reading of the barometer at the level of the sea increased from 29.34 inches at the beginning of the week to 30.15 inches by 9 A.M. on the 2d, decreased to 29.86 inches by 9 A.M., increased to 29.87 inches by 1 P.M. on the 4th, decreased to 29.58 inches by 1 P.M. on the 5th, increased to 30.36 inches by 9 A.M. on the 7th, and was 30.35 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.04 inches, being 0.49 inch higher than last week, and 0.08 inch above the average of the week.

*Temperature*.—The highest temperature in the shade in the week was 53°.5, on the 2d; on the 6th the highest temperature was 42°. The mean of the seven high day temperatures was 49°.1.

The lowest temperature was 30°.3, on the 6th, on the 4th the lowest temperature was 48°. The mean of the seven low night temperatures was 38°.9

The greatest range of temperature in one day was 18°, on the 2d; on the 4th the smallest was 4°.3. The mean of the seven daily ranges was 10°.2.

The mean temperatures were, on the 1st, 42°.7; on the 2d, 45°.5; on the 3d, 48°.8; on the 4th, 48°; on the 5th, 42°.9; on the 6th, 36°.6; and on the 7th, 44°.3; of these the 3d and 4th were above their averages by 3° and 2°.4 respectively, and the rest were below by 3°.5, 0°.5, 2°.5, 8°.5, and 0°.4 respectively.

The mean temperature of the week was 44°.1, being 1°.2 lower than last week, and 1°.4 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 83°.5, on the 2d. The mean of the seven readings was 62°.9.

The lowest reading of a minimum thermometer placed on grass was 23°.3, on the 6th. The mean of the seven readings was 29°.1.

*Rain*.—Rain fell on three days, to the amount of 0.56 inch.

ENGLAND: *Temperature*.—During the week ending November 7, the highest temperatures were 62° at Newcastle, 60° at Leeds, 59°.2 at Liverpool; the highest at Brighton was 53°.2, at Blackheath 53°.5, at Bristol 54°. The general mean was 56°.7.

The lowest temperatures were 29° at Hull, 29°.2 at Wolverhampton, 30°.3 at Blackheath; the lowest at Truro was 44°, at Plymouth and Liverpool 38°.2. The general mean was 34°.1.

The greatest ranges were 28° at Newcastle, 26°.2 at Cambridge, 26° at Hull and Leeds; the least ranges were 13° at Truro, 16°.9 at Plymouth, 18° at Bristol. The general mean was 22°.6.

The mean of the seven high day temperatures was highest at Truro, 54°.4, at Leeds 53°.5, at Plymouth 52°.5; and was lowest at Bolton, 48°.3, at Wolverhampton 48°.8, at Preston 48°.9. The general mean was 50°.9.

The mean of the seven low night temperatures was highest at Truro, 45°.6, at Liverpool 43°, at Plymouth 42°.5; and was lowest at Wolverhampton, 35°.8, at Bolton 37°.7, at Brighton 38°. The general mean was 40°.3.

The mean daily range was greatest at Wolverhampton and Leeds, 13°, at Brighton, Hull, and Newcastle 12°.3; and was least at Truro, 8°.8, at Liverpool 8°.9, and at Bristol 9°.1. The general mean was 10°.6.

The mean temperature was highest at Truro, 49°.4, at Plymouth and Liverpool 46°.9; and was lowest at Wolverhampton, 41°.7, at Bolton 42°.4, at Brighton 43°.5. The general mean was 44°.9.

*Rain.*—The largest falls were 1.80 inch at Bolton, 1.67 inch at Preston, 1.32 inch at Truro; the smallest falls were 0.24 inch at Sunderland, 0.29 inch at Hull, 0.38 inch at Sheffield. The general mean fall was 0.89 inch.

SCOTLAND: *Temperature.*—During the week ending November 7, the highest temperature was 62°.1 at Leith; at Greenock the highest temperature was 56°.7. The general mean was 58°.8.

The lowest temperature in the week was 27°.5, at Aberdeen; at Paisley the lowest temperature was 35°.3. The general mean was 32°.7.

The mean temperature was highest at Leith, 48°.5; at Perth the lowest 44°.4. The general mean was 46°.2.

*Rain.*—The largest fall was 1.58 inch, at Greenock; the smallest fall was 0.14 inch, at Edinburgh and Leith. The general mean fall was 0.60 inch.

JAMES GLAISHER, F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, November 9, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been very dull and damp over the whole kingdom, especially over the southern, south-western, and western districts. Rain (and in some places hail) has fallen very generally, but in most localities the amount has been rather inconsiderable.

The *temperature* has been higher than of late in all parts of the country. In "England, E." and "England, S." the values for the week have again been slightly below the mean, while in the Channel Islands the mean has been equalled; but in all other districts the readings show an excess varying between 1° and 4°. The maxima were generally recorded on the 3d, when the thermometer rose to 63° in "Scotland, E.," 62° in "Ireland, S.," and to 60° in "Ireland, N.," whilst elsewhere they ranged from 53° to 59°. The minima, which were registered in most places on the 6th, ranged from 27° in "Scotland, E.," and 29° in "England, E.," to 35° in "Scotland, W.," and "Ireland, S.," and to 40° in the "Channel Islands."

The *rainfall* has been rather more than the mean in the east of England, but less or about equal to it elsewhere.

*Bright sunshine* shows a slight increase in "Scotland, E.," but a decided decrease in most other districts. The percentages of the possible duration ranged from 8 in "England, N.W.," and 9 in "England, N.E.," to 25 in "England, S.W.," and 30 in "Scotland, E."

*Depressions observed.*—During nearly the whole of this period depressions have skirted or passed over our extreme north-western and northern coasts, bringing moderate to strong south-westerly or southerly winds to all our stations. During the earlier part of the week some subsidiary disturbances, which passed more directly over us, caused the wind to vary somewhat in direction. At the close of the period, however, the conditions had become anticyclonic, and the winds on our southern coasts light from the eastward.

## Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

DISEASES OF CONIFERS.—Can any of your readers tell me the name given by English foresters to the disease on Pinus sylvestris, P. Larix, and other Coniferæ, as well as on many of our deciduous trees, which is caused by Rhizomorpha, the sclerotioid condition of Agaricus melleus? R. Hartig proved (1873) that this fungus is the cause of the "Harzsticke," "Harzbeerfulle," or "Erdkrebs." I want the English equivalent of the disease so named. *B. B.*

GRAVELLING KITCHEN GARDEN WALKS.—Can any of your readers inform me with regard to the best means of setting Buxton gravel? Admirable as it is for the above purpose, it has the disadvantage of taking a long time to set. Watering and rolling is advocated for most gravels, but this can scarcely be called even a partial remedy in the case of Buxton gravel, on account of its being crushed rock, and consequently destitute of the binding properties which are more or less contained in most other gravels. The walks here have been previously done with Buxton gravel, which I thought of turning and adding a surface dressing of the same sort, mixed with a little cement to make it set. If any of your readers have made any experiments in this direction I would be glad of their advice, particularly in what proportion the cement is to be used, and what thickness the layer would have to be put on in order to stand the ordinary wear and tear that is required in a kitchen garden. Any information on this subject would, I am sure, be of great advantage to others besides myself. *K. L.*

## Answers to Correspondents.

*.* OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARDCHRON, LONDON," GARDCHRON *being written as one word. Telegrams (but not letters) thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

BALLS FROM A SCOTCH LOCH: *H. O. H.* The balls fished up from a Scotch loch are composed of the threads of a Conferva, Cladophora ægagropila. *M. C. C.*

BOOKS: *R. Bullen. Tropical Agriculture* is published by E. & F. N. Spon, 48, Charing Cross, London. The author is P. L. Simmonds, F.R.C.I.

CUCUMBER LEAF: *J. B.* The leaf seems to have suffered from scalding. The little insect which we discovered was red-spider, so be on your guard, or there will be no Cucumbers at Christmas.

DYING TREES: *K. H.* The only verdict we can give on the specimen sent is "found dead." It is impossible, with no other evidence before us, to say why. From what you say, it seems most likely that the cause is in the soil. Can there be fungus mycelium in it?

FUNGI: *J. S., Edinburgh.* 1, Nectria cinnabarina; 2, some Myxomycetous fungus reduced to the dust condition; 3, probably some small Agaric arrested in growth by frost or some other cause.

FUNGUS ON RUBUS: *Jamaica.* Uredo ruborum. *M. C. C.*

NAMES OF FRUITS: *T. Kennedy & Co.* 1, Brownlee's Russet; 2, Cellini; 4, French Crab; 5, Court of Wick; 6, Round Winter Nonsuch; 7, Winter Strawberry; 8, Ribston Pippin; 9, Cox's Orange Pippin; 10, Red Quarrenden; 12, Mannington's Pearmain; others unrecognised.—*C. H.* 1, Beurré Diel; 2, Passe Colmar; 3, Beurré d'Amanlis (bad); 4, Marie Louise; 5, Napoleon; 6, rotten.—*A. Chalmers.* 1, Cat's-head; 3, Emperor Alexander; 4, probably Northern Spy. These Northern Apples are so different in appearance that we cannot recognise them.—*J. K. B. Apple:* Rymer.—*Sydenham.* Very inferior specimen—may be Beurré Bachelier.—*W. P. Pear:* Comte de Lamy.—*J. S. Apples:* 1, New Hawthornden; 2, Cox's Pomona; 3, Grange's Pearmain; 4, Cat's-head; 5, Round Winter Nonsuch; 6, Reinette de Canada. *Pears:* 2, Bowood; 4, Knight's Monarch; 5, Comte de Lamy; 6, Fondante d'Automne; others unrecognised.—*W. Knight. Pears:* 1, Maréchal de la Cour; 3, British Queen. *Apple:* 5, Northern Spy. Others unrecognised.

NAMES OF PLANTS: *C. W.* 1, Cotoneaster Simonsi; 2, the seed-vessel is Iris fœtidissima.—*F. H. C.* 1, Pilosporum tenuifolium; 2, Cornus mas; Schinus Molli.—*L. Hartley.* Pleurothallis sp.—*P. Hiern.* Cattleya Loddigesi.—*Bolton.* 1, Eucharis Mastersi; 2, too far decayed to recognise; 3, a small roundish pinnuled form of Adiantum cuneatum; very pretty, of course, but one which we should think scarcely distinct enough from that and other recent acquisitions to make it desirable that it should be introduced to cultivation under a distinctive name.—*H. J. Ross.* 1, Cymbidium ensifolium.

PRIMULAS DYING-OFF: *J. C.* The plants are rotting away at the root, probably from somcthing in the soil. Have you used strong manures? Send more particulars.

SCIENCE OF HORTICULTURE: *Scions.* Read the chapters on the "Life History of Plants," in Cassell's *Popular Gardening*, which contain the most recent information on the subjects you name, also Burbidge on the *Propagation and Improvement of Cultivated Plants.*

### CATALOGUES RECEIVED.

THOMAS KENNEDY & CO., Dumfries—Forest, Fruit, and Ornamental Trees.

BEN. REID & CO., Aberdeen—Roses, Forest Trees, &c.

VICCARS COLLYER & CO., Central Hall, Leicester—Fruit Trees.

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey—Trees and Shrubs.

WILLIAM BAXTER, Inverness—Roses, Trees (Forest and Fruit), &c.

COMMUNICATIONS RECEIVED:—H. F. W.—J. Chatwood A. M.—M. Alphonse de Candolle.—W. H.—R. D. E. B.—H. W.—H. Rogers. J. R.—H. L.—P. G.—A. D. W. X. X.—J. C. F. B. S.—W. Heriot.—J. C. B.—D. T.—A. M. M.—T. M.—G. B. W.—W. O. H.—W. H. F. E. M., Liége.—T. F. Thiselton Dyer.—F. A. M.—J. R. J.

DIED, on November 8, at Newton Heath, near Manchester, ALEXANDER FORSYTH, in the seventy-sixth year of his age; formerly gardener to Lord Stanley at Alderley, the Earl of Shrewsbury at Alton Towers, and J. K. Brunel, Esq., at Watcombe, Devonshire.

## Markets.

*COVENT GARDEN, November* 12.

TRADE very quiet, with heavy supplies. A large consignment of St. Michael Pines to hand, but not in good condition. Kent Cobs lower. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½sieve | 1 0 | 3 0 | Melons, each | 0 6 | 1 6 |
| Grapes, per lb | 0 6 | 0 .. | Pine-apples, Eng. lb. | 0 .. | 0 .. |
| Kent Cobs, 100 lb. | 22 0 | 25 0 | St. Michael, each | 2 6 | 5 0 |
| Kent Filberts, 100 lb. | 0 .. | 0 .. | Pears, per dozen | 0 9 | 1 4 |
| Lemons, per case | 15 0 | 20 0 | — per ½sieve | 1 6 | 3 0 |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, per doz. | 1 0 | 2 0 | Mushrooms, punnet | 1 6 | 2 0 |
| Beans, Kidney, lb. | 1 0 | .. | Mustard and Cress, | | |
| Beet, red, per dozen | 1 0 | 2 0 | punnet | 0 4 | .. |
| Broccoli, bundle | 0 6 | 1 0 | Onions, per bunch | 0 6 | .. |
| Cabbages, per dozen | 1 0 | .. | Parsley, dozen bunch | 2 0 | 3 0 |
| Capsicums, per 100 | 1 6 | 2 0 | Parsnips, per dozen | 1 0 | 2 0 |
| Carrots, per bunch | 0 6 | .. | Potatos, per cwt | 4 0 | 5 0 |
| Cauliflowers, per doz. | 2 0 | 3 0 | ,, kidney, per cwt | 4 0 | 5 0 |
| Celery, per bundle | 1 0 | 2 0 | Salsafy, per bundle | 1 0 | .. |
| Coleworts, per bunch | 2 0 | 4 0 | Scorzonera, p. bundle | 1 0 | .. |
| Cucumbers, each | 0 3 | 0 7 | Shallots, per pound | 0 3 | 0 4 |
| Endive, per dozen | 1 0 | 2 0 | Spinach, per bushel | 2 0 | 4 0 |
| Herbs, per bunch | 0 2 | .. | Tomatos, per lb. | 0 6 | 1 0 |
| Leeks, per bunch | 0 3 | 0 4 | Turnips, bunch | 0 6 | .. |
| Lettuce, per dozen | 1 0 | 1 6 | | | |

POTATOS.—Magnum Bonums, bad trade, 50s. to 80s; Regents, 60s. to 90s. per ton; German Reds, 2s. to 3s. 6d. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0 | 15 0 | Evergreens, in var., | | |
| Arbor vitæ (golden), | | | per dozen | 6 0 | 24 0 |
| per dozen | 6 0 | 18 0 | Ficus elastica, each | 1 6 | 7 0 |
| — (common), dozen | 6 0 | 12 0 | Ferns, in var., dozen | 4 0 | 18 0 |
| Arum Lilies, dozen | 9 0 | 18 0 | Foliage Plants, vari- | | |
| Begonias, per dozen | 6 0 | 12 0 | ous, each | 2 0 | 10 0 |
| Bouvardia, doz. | 12 0 | 18 0 | Fuchsias, per dozen | 6 0 | 9 0 |
| Cineraria, per doz. | 12 0 | 18 0 | Hyacinths, Rom., pot | 1 0 | 1 3 |
| Chrysanth., per doz. | 9 0 | 18 0 | Marguerite Daisy, | | |
| Cyperus, per dozen | 4 0 | 12 0 | per dozen | 8 0 | 12 0 |
| Dracæna terminalis, | | | Myrtles, per dozen | 6 0 | 12 0 |
| per dozen | 30 0 | 60 0 | Palms in var., each | 2 6 | 21 0 |
| — viridis, per doz. | 12 0 | 24 0 | Pelargoniums, scar- | | |
| Erica, various, doz. | 12 0 | 21 0 | let, per dozen | 6 0 | 9 0 |
| Euonymus, in var., | | | Poinsettia, per dozen | 12 0 | 18 0 |
| per dozen | 6 0 | 18 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Marguerites, 12 bun. | 2 0 | 4 0 |
| Arum Lilies, 12 blms. | 6 0 | 8 0 | Mignonette, 12 bun. | 1 6 | 3 0 |
| Azalea, 12 sprays | 1 0 | 2 0 | Pelargoniums, per 12 | | |
| Bouvardias, per bun. | 0 6 | 1 0 | trusses | 1 0 | 1 6 |
| Camellias, 12 blms. | 3 0 | 6 0 | — scarlet, 12 trusses | 0 9 | 1 0 |
| Carnations, 12 blms. | 1 0 | 3 0 | Poinsettia, 12 blms. | 6 0 | 9 0 |
| Chrysanth., 12 blms. | 0 6 | 4 0 | Roses (indoor), per | | |
| — 12 bunches | 4 0 | 12 0 | dozen | 1 0 | 3 0 |
| Eucharis, per dozen | 4 0 | 6 0 | — Car, Fr., bunch | 6 0 | 12 0 |
| Gardenias, 12 blooms | 3 0 | 6 0 | Stephanotis, 12 spr. | 5 0 | 6 0 |
| Hyacinths, Rom., 12 | | | Tropæolum, 12 bun. | 2 0 | 3 0 |
| sprays | 1 6 | 2 0 | Tuberoses, 12 blms. | 0 9 | 1 6 |
| Lapageria, white, 12 | | | Violets, 12 bunches | 1 0 | 1 3 |
| blooms | 2 0 | 3 0 | — Czar, Fr., bunch | 0 6 | 1 0 |
| — red, 12 blooms | 1 0 | 2 0 | — Parme, Fr., bun. | 4 0 | 5 0 |
| Lil. longifl., 12 blms. | 6 0 | 8 0 | | | |

## CORN.

MARK LANE: *Nov.* 9.—Damp samples of Wheat on the week are 6*d.* lower, but prime dry qualities are not quotably altered. For foreign Wheats there was an apparent disposition to meet buyers on rather easier terms, but buyers were not forthcoming. Prices of flour compare 6*d.* lower with those of Monday last. Common English Barley was again rather easier, but foreign grinding sorts were not quotably lower, though very dull. Beans and Peas supported late value. Maize prices continue to harden. Oats were firm, and prices in the week advanced 6*d.* on American and Russian.

*Nov.* 11.—Trade was dull for Wheat. Prices can hardly be quoted as altered. Flour was a very slow sale, and in favour of buyers. There was very little

passing in Barley, and foreign grinding qualities were barely so well supported. Maize tended against buyers. Oats were again dearer.

*Average prices* of corn for the week ending Nov. 7:—Wheat, 31s. 1d.; Barley, 30s. 3d.; Oats, 18s. 11d. For the corresponding period last year:—Wheat, 32s.; Barley, 31s. 10d.; Oats, 19s. 4d.

## SEEDS.

LONDON: *Nov.* 11.—As might have been expected, there were but very few buyers on the Seed Market to-day, and the transactions were few and unimportant. Red Clover seed continues to harden in value, the total recent advance having now assumed substantial proportions. White, Alsike, and Trefoil keep steady. Low quotations continue to prevail for both Hemp and Canary seed. Feeding Linseed is neglected. There is no change in Blue Peas and Haricot Beans. For Winter Tares the trade is apparently over. Mustard and Rape seed are without alteration. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Nov.* 11.—Good supplies of fruit and vegetables. Trade moderate, fair demand. Quotations:—Apples, 2s. 6d. to 6s., and Pears, 2s. 6d. to 6s. per bushel; Cabbages, 2s. 6d. to 6s., and Savoys, 2s. 6d. to 5s. per hundred; Brussels Sprouts, 3s. 6d. to 4s. per sieve; Beetroots, 2s. 6d. to 3s. 6d.; Celery, 6d. to 10s.; greens, 3s. to 4s.; Turnips, 3s. to 4s.; and Carrots, 2s. to 3s. 6d. per dozen bundles; Parsley, 1s. to 1s. 6d. per dozen bunches; Onions, 4s. to 5s., and pickling ditto, 4s. to 4s. 6d. per cwt.; Carrots, in sacks, 30s. to 50s. per ton; white Turnips, 40s. to 60s. ditto; Swede ditto, 30s. to 32s. 6d. ditto; Mangels, 22s. 6d. to 25s. ditto.

STRATFORD: *Nov.* 10.—During the past week the market has been well supplied with all kinds of produce, and with a good attendance of buyers a fair trade was transacted at the undermentioned prices:—Cabbages, 5s. to 7s., Drumheads, 6s., Coliards, 4s. to 5s., Cauliflowers, 3s. 6d. to 10s., and Savoys, 4s. to 7s. 6d. per tally; greens, bunch, 3s. 6d. to 4s. 6d. per dozen; Sprouts, 3s. 6d. to 4s. 6d. ditto; Mangels, 17s. to 22s. per ton; Swedes, 24s. to 35s. ditto; Carrots, cattle feeding, 28s. to 35s. ditto; household, ditto, 38s. to 50s. per ton; Turnips, 50s. to 65s. per ton; ditto bunch, 3s. to 4s. per dozen; Apples, 1s. 6d. to 3s. per bushel; Onions, 70s. per ton; ditto pickling, 2s. 6d. per sieve.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 10. — Owing partly to the weather, the supplies were only moderate, and the late advance was well sustained. Quotations:—Regents, 70s. to 100s.; Early Roses, 70s. to 90s.; Champions, 60s. to 90s.; Belgian kidneys, 60s. to 80s.; German reds, 60s. to 70s.; ditto Snowflakes, 60s. per ton.

COLUMBIA (East London): *Nov.* 11.—Trade very good. Magnum Bonum, 55s. to 75s.; Regents, 50s. to 65s.; Victoria, 55s. to 70s.; Champions, 50s. to 58s.; Early Rose, 50s. to 60s.; Reading Hero, 60s. to 70s.; and Beauty of Hebron, 65s. to 80s. per ton.

STRATFORD: *Nov.* 10. — Magnums, 50s. to 75s.; Regents, 66s.; Champions, 50s. to 60s.; and Early Rose, 65s. to 70s. per ton.

*Imports.*—The imports into London last week consisted of 2314 bags from Hamburg, 2 from Bremen, 300 from Ghent, 5 from Amsterdam, 85 bags 32 baskets from Rotterdam, and 3 casks from St. Nazaire.

## CATTLE.

METROPOLITAN: *Nov.* 9.—Choice cattle were scarce, and our top quotation is rather advanced. Middling qualities sold as badly as before. No appreciable improvement occurred in the sheep trade, and sales closed slowly at previous rates. Calves were very dull of sale. Pig trade unchanged. Quotations:—Beasts, 3s. 6d. to 4s. 4d., and 4s. 8d. to 5s. 4d.; calves, 2s. 6d. to 4s. 8d.; sheep, 3s. 8d. to 4s. 6d., and 4s. 8d. to 5s. 6d.; pigs, 4s. to 4s. 6d.

*Nov.* 12.—Trade has been in a very lifeless condition. Both beasts and sheep have sold slowly at about late rates. Fine calves were steady; other kinds dull. Pigs flat.

## HAY.

WHITECHAPEL: *Nov.* 10.—With smaller supplies, sales of meadow hay were made a little more readily. Quotations:—Clover, prime, 90s. to 105s.; inferior, 60s. to 85s. Hay, prime, 70s. to 90s.; inferior 50s. to 67s. Straw, 25s. to 38s. per load.

*Nov.* 12.—A rather large supply was on sale, and there was a quiet trade at previous prices.

STRATFORD: *Nov.* 10.—Clover, 75s. to 110s.; meadow hay, 65s. to 90s.; and straw 30s. to 36s. per load.

**Government Stock.**—Consols closed on Monday at 100⅞ to 100¼ for both delivery and account. Tuesday's figures were 100⅜ to 100⅝ for both transactions. The final quotations of Wednesday were the same as those recorded on Monday. Prices closed on Thursday at 100⅛ to 100⅜ for delivery and 100⅜ to 100½ for the account.


# THE COLONIAL MANURE.

*Unequalled for Excellence of Quality and Productive Powers.*

| | s. | d. | |
|---|---|---|---|
| Supplied in Tins, | 1 | 0 | each. |
| " " | 2 | 6 | " |
| " " | 5 | 0 | " |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| " ½ " | 20 | 0 | " |
| " 1 " | 37 | 6 | " |

**Special Prices to the Trade on application.**

The COLONIAL MANURE being powerful and lasting in its effects, very little need be used; consequently it will be found more economical than any other Chemical Manure.

The COLONIAL MANURE is to be obtained from all Nurserymen and Seedsmen in the United Kingdom and the Colonies.

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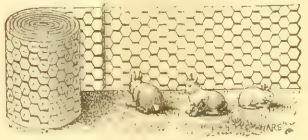
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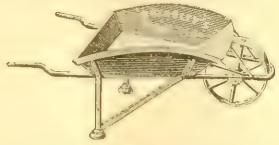
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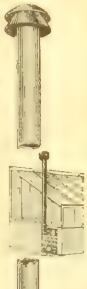
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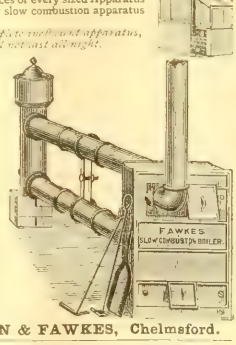
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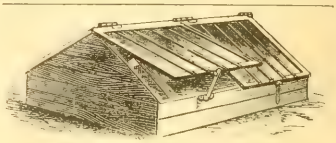
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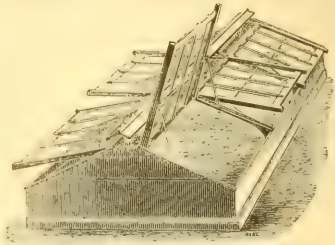
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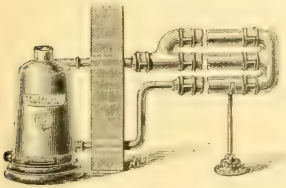
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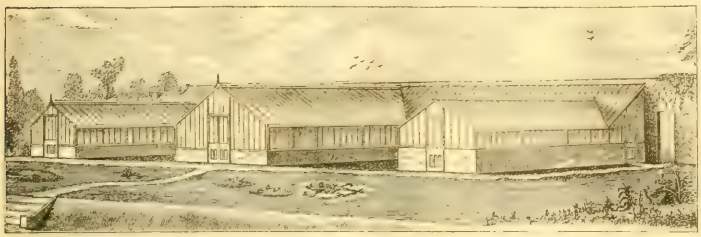
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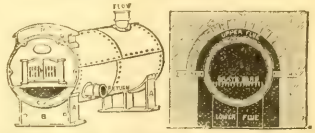
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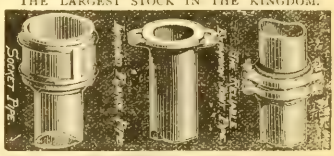
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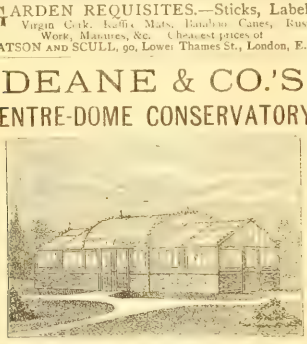
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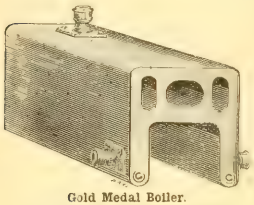
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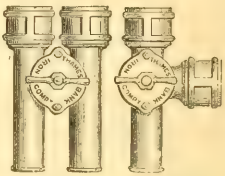
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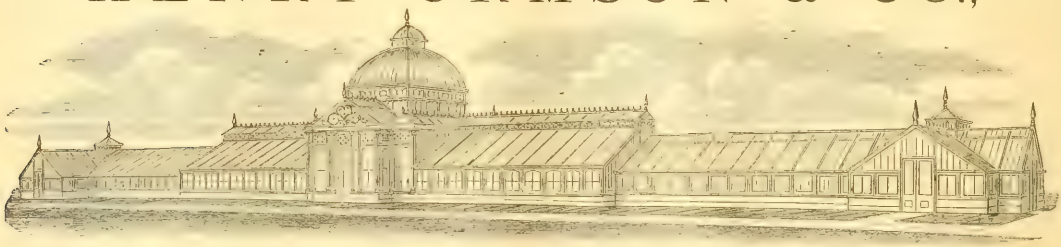
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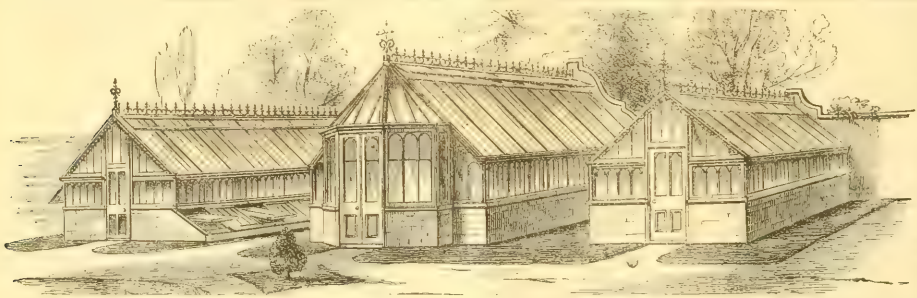
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THE

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NURSERY, 8 miles from London, Lease nineteen years, Rent £20 for the lot, about 1 Acre of GROUND, nice double-fronted COTTAGE, recently built.
Price for Lease, and three splendidly-built GLASS HOUSES, one 120 feet long, one 110 feet, and one 100 feet, with six rows of PIPE, all nearly new, and well heated, only £500, part of which can remain at 5 per cent.
Apply, C. H. COWLES Woodford, Essex.

**Thornton Heath.**
In a prominent position, good locality, capital opening for a beginner.
WELL ESTABLISHED NURSERY, acre of Ground, five Greenhouses. Lease forty-two years. Rent only £12. No Stock.
Terms and particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared.
115, Listria Park, Stamford Hill, N.

WILLIAM CLAPHAM,
*Garden Architect and Natural Rock Builder,*
SHAW HEATH, STOCKPORT.
Ferneries, Grottoes, and Rockwork, in common with Landscape Gardening, to suit any locality.
ALL PERSONALLY CARRIED OUT.
Silver Medal awarded Preston Guild, 1882.

**To Landscape Gardeners and Others.**

THE METROPOLITAN ASYLUMS BOARD are prepared to RECEIVE TENDERS for LAYING OUT and PLANTING the GROUNDS of Northern Hospital, now in course of erection at Winchmore Hill, N. A Plan and Specification may be seen at the office of the Architects, Messrs. Pennington & Bridgen, No. 8, John's Street, Adelphi, W.C., between the hours of 10 and 4, where and when printed forms (upon which only Tenders will be received), may be obtained upon a deposit of £1 1s., which will be returned upon the receipt of a *bonâ fide* Tender. Tenders, duly sealed and endorsed, "Tender for Laying-out and Planting Grounds of Northern Hospital," are to be delivered at the Offices of the Board, No. 37, Norfolk Street, Strand, W.C., by or before 12 o'Clock, Noon, on Friday the 27th inst.
The Board do not bind themselves to accept the lowest or any Tender. By order,
W. F. JEBB, Clerk.
No. 37, Norfolk Street, Strand, W.C., November 14, 1885.

HERBARIUM for SALE, in perfect condition, containing over 10,000 Plants from all parts of the World, representing almost every Natural Order; mostly direct communications from the Herbaria of celebrated Botanists.
For particulars, apply to HENRY CHAMBERLAIN, Esq., 5, The Circus, Greenwich, S.E.

LARCH, 1-yr. 1-yr., 5s. 6d.; 1 to 1½ foot, 10s. 6d.; 1½ to 2 feet, 16s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 4 to 5 feet, 32s. 6d. per 1000. Nett cash. Ground wanted. Trade prices on application. Apply at once.
The Nurseries, Flanybyther.

**Home-grown Vegetable and Field Seeds.**

H. AND F. SHARPE will be pleased to forward on application their Wholesale Special Priced LIST of Home-grown VEGETABLE and FIELD SEEDS of 1885 growth, all raised from the best selected stocks, and harvested in splendid condition. The Prices will be found very advantageous. Seed Growing Establishment, Wisbech.

FOR SALE, 30 large Maréchal Niel ROSE TREES, 4 large STEPHANOTIS FLORIBUNDA, 100 EUCHARIS AMAZONICA, 100 CAMELLIAS, 100 AZALEAS, 100 GARDENIA Plants.
G. WALKLING, College Park Nursery, Lewisham, S.E.

MANETTI STOCKS, hard and well-rooted, fine for Grafting or Planting, 3s. per 100, 20s. per 1000, £8 per 10,000. Packagee free for cash.
KIRK ALLEN, The Nursery, Fen Drayton, St. Ive's, Hunts.

GAME COVERT and FOREST TREES.—English Furze, 10s. 6d. per 1000; Broom, 20s. per 1000; Alder, Ash, Beech, Birch, Bitter Osiers, Spanish Chestnuts, Elms of sorts, Wych Elm, Hazel, Hypericum, Laurels, Limes, Oaks (English), Evergreen Privet, Sycamore, Thorn Quick, Thorns (Standards), Rhododendrons, Ghent Azaleas, Willows of sorts, Yuccas, Apples, &c. Price LISTS on application to
W. MAULE AND SONS, The Nurseries, Bristol.

ABIES DOUGLASII GLAUCA.—Undoubtedly one of the finest introductions of late years, being hardier, more compact, and not apt to lose its leader like the common Douglasii, 9 to 12 feet, 12s.; 3 to 4 feet, 18s. per dozen. A LIST of other hardy Pines free on application.
MORRISON BROTHERS, Aberdeen.

DOUBLE TUBEROSES, extra fine, 2s. per dozen; LILIUM AURATUM, splendid Roots, 4s. and 6s. per dozen; LILY of the VALLEY, German Crowns, 5s. 6d. per 100; SPIRÆA JAPONICA, 3s. per dozen; AZALEAS and CAMELLIAS, from 18s. per dozen. Large quantities at cheaper rates. Trade price on application.
MOORE AND CO., 1 and 3, Penchurch Street, E.C., and Child's Hill Nursery, Finchley Road, N.W.

CASH PRICES.—SEAKALE, very fine Crowns for Forcing. GRAPE VINES, FIGS, PEACHES, &c., in Pots, well set for Fruit. Excellent Dwarf-trained PEACHES. NECTARINES, and APRICOTS, well ripened and fibrous-rooted. Nett Price LIST on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

**Seed Potatos.**

H. AND F. SHARPE beg to announce that their Wholesale Priced LIST of SEED POTATOS is now ready, and can be forwarded at once on application. It comprises all the best varieties in cultivation, including several novelties of sterling merit. The samples are very fine this season and entirely free from disease, and the prices will be found very reasonable.
Seed Growing Establishment, Wisbech.

S. BIDE begs to call special attention to his extensive stock of—
FRUIT TREES (Dwarf-trained)—Apricots, Nectarines, Peaches, Apples, Pears, Cherries, &c.
FOREST TREES—Larch and Scotch Fir, Ash, Hazel, &c.
ROSES—Standard and Dwarf. ASH—Seedling, 1-yr.
ASPARAGUS—For Planting; for Forcing.
The whole being second to none in the Trade. CATALOGUES of General Nursery Stock, with Prices, &c., on application to
S. BIDE, Alma Nursery, Farnham, Surrey.

**Cash Prices**

GRAPE VINES, FIGS, PEACHES, &c., in Pots; excellent, well-ripened trees for immediate fruiting. A large stock of very fine Dwarf-trained PEACHES, NECTARINES, and APRICOTS, with fibrous roots. SEAKALE for Forcing. The choicest ROSES. Nett Price List on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

**Special Offer—Expiration of Lease.**

ROSES, Best Dwarf H.P., 35s. per 100; fifty for 20s.
TEA ROSES, in 5-inch pots, all the leading varieties, including Niphetos, Maréchal Niel, and Grace Darling, 12s. per dozen.
NEW ROSES of 1885, in 48-pots, 12s. per dozen.
STANDARD ROSES, including Gloire de Dijon and Maréchal Niel, 12s. per dozen.

APPLE TREES, Standards, 18s. per doz.; Pyramids, 12s. doz. ,, Bush, 6s. per dozen; Dwarf-trained, 21s. per dozen.
PEARS, Standards, 18s. per dozen; Pyramids, 5 to 6 feet, 21s. per dozen.
,, Dwarf-trained, 24s. per dozen.
PLUMS, Standards, 18s. per dozen; Trained, 24s. per dozen.
GOOSEBERRIES, Warrington and best leading sorts, 2s. 6d. per dozen, 18s. per 100.
CURRANTS, Red and Black, 2s. per dozen, 15s. per 100.
CONIFERS, for Lawn Planting, all good varieties, 12s. p. doz.
SHRUBS, Flowering, 4s. per dozen.
BOX, Tree, 8s. per dozen.
BAY, Sweet, 9s. to 18s. per dozen, 2 to 3 feet.
CHESTNUT, Scarlet, 3 to 10 feet, 8s. to 24s. per dozen.
LAURELS in sorts, Plain and Variegated, in pots, 9s. per dozen.
LAURELS, Portugal, Standards, 2 feet stems, good heads, 2s. 6d. each.
PYRUS MAULEI, fruit makes a delicious preserve, in pots, 9s. per dozen.
PRIVET, for Hedge Planting, 15s. to 25s. per 1000.
ASH, Weeping, stems 8 to 10 feet, 3s. 6d. each.
LABURNUMS, good heads, 1s. each.
ELMS, for Avenue Planting, 9 to 12 feet, 1s. 6d. each.
PLANES, best for Town Planting, 8 to 10 ft., 1s. 6d. each.
POPLARS, Black Italian, 8 to 12 ft., 6s. to 12s. per doz.
SYCAMORE, 8 to 10 feet, 6s. per dozen.
THORNS, Standard, flowering, 15s. per dozen.
*The best Evergreens for Seaside Planting.*
PINE, Austrian, 12 to 18 inches, 6s. per 100; 18 to 24 inches, 12s. 6d. per 100; 24 to 30 inches, 20s. per 100; 30 to 36 inches, 35s. per 100; 3 to 4 feet, 50s. per 100.
CUPRESSUS MACROCARPA, in pots, 4 to 5 ft., 18s. per doz.
ESCALLONIA MACRANTHA, in pots, 6s. per dozen.
EUONYMUS, best green, 12 to 18 inches, 4s. per dozen; 18 to 24 inches, 5s. per dozen.
AMPELOPSIS VEITCHII, best for covering walls, 6s. to 9s. per dozen.
Standard trees.
*Cash to accompany order.*
CATALOGUES post-free on application.
**GARAWAY & CO., Durdham Down, Clifton, Bristol.**

CHRYSANTHEMUMS.—Five hundred varieties, including the best of the Exhibition, Decorative, Early Flowering, and Single Varieties. Strong Cuttings now ready, buyer's selection, 1s. 6d. per dozen, 10s. per 100; Plants, 2s. 6d. per dozen, 16s. per 100; ready, end of December. Many of the best growers in the country are supplied from this collection. For the grand new sorts, see CATALOGUE, one stamp.
WM. ETHERINGTON, Manor House, Swanscombe, Kent.

LILIUM AURATUM (Large Home-grown).—We are now taking up in fine condition the Bulbs of Lilium auratum, which produced the magnificent flowers which we exhibited at the Great Conservatory, South Kensington, all through August and September, and which obtained universal admiration. Prices, 15s., 24s., and 36s. per dozen; very large bulbs, 5s each; selected best forms, 2s. 6d., 3s. 6d., and 5s. each.
Our importations of Indian LILIES, POLYPHYLLUM, WALLICHIANUM, NEILGHERRENSE, are now on their way. For prices, see our List No. 77, pages 15, 16.
NEW PLANT AND BULB COMPANY, Colchester.

FOREST TREES.
To be sold a great bargain to clear the ground.
500 CHESTNUT TREES, 10 to 12 feet.
500 LIMES, 6 to 12 feet.
200 WALNUT TREES, 6 to 14 feet.
A few thousand strong MANETTI.
No reasonable offer will be refused.
Apply to Mr. COOPER, Calcot Gardens, Reading.

TRAINED PEACH TREES.
Some of the best sorts, well trained and strong.
Apply to Mr. COOPER, Calcot Gardens, Reading.

PYRAMID APPLE TREES.—Fine grown Trees of the best sorts, including—Blenheim Orange, Cellini, Cox's Orange Pippin, Golden Reinette, King of the Pippins, Lord Suffield, Keswick Codlin, Warner's King, Wellington, &c.
Apply to Mr. COOPER, Calcot Gardens, Reading.

Autumn Planting.
THE LAWSON NURSERY COMPANY (Limited), Edinburgh, have to intimate that their Nurseries are well stocked with FOREST and ORNAMENTAL TREES and SHRUBS, ROSES, FRUIT TREES, &c., of superior quality, and when personal inspection is not convenient they will be glad to make special offers upon application.
The AUTUMN CATALOGUES are in preparation, and will be posted to Customers as usual.

E. WILSON SERPELL, NURSERYMAN, &c., Plymouth, begs to offer the following Shrubs, &c., all well-to-fed stuff; early orders solicited:—
CRYPTOMERIA ELEGANS, handsome stuff, 3 to 4 feet, 18s. per dozen.
PICEA NOBILIS, 12 to 24 inches, and 30 inches, well transplanted, 10s. to 24s. per dozen.
YEWS, Irish, well furnished, 3 to 4 feet, 18s. per dozen.
PINUS INSIGNIS, 2 to 3 feet, 18s. per dozen.
MYRTLES, large and small leaved, in pots, well established, 9s. per dozen.

PALMS.—A few hundreds of splendidly-grown healthy Seaforthia elegans, Latania borbonica, Corypha australis, Phœnix reclinata, Areca lutescens, and Euterpe edulis, 12 inches high, 4s. per dozen, 25s. per 100; same sorts, 20 inches high, 12s. per dozen, less quantity, 1s. 3d. each.
FERNS.—Strong, healthy, and handsome Lomaria Gibba, Adiantum cuneatum (Maidenhair), Pteris tremula, Pteris serrulata, Pteris serrulata cristata, Pteris cretica albo lineata, Pteris argyræa, out of small pots, 20s. per 100, 3s. per dozen.
GARDENIA IN TERMEDIA (true), 6s. per dozen.
Packages and parcels post-free.
GARDENER, Holly Lodge, Stamford Hill, London, N.

To Nurserymen, Seedsmen, and Florists.
DUTCH BULBS—Season 1885.
WHY pay Freight from Holland to London on Dutch Bulbs, when you can buy at a cheaper rate, the same quality, and get them brought over free by ordering from LEWIS ISAACS, WHOLESALE IMPORTER OF DUTCH BULBS, at 3, Victoria Warehouses, Mansell Street, Aldgate, E.C.? Established since 1856. Wholesale Catalogue sent post-free on application. An immense stock of all kinds of Bulbs is kept at the above address from August up to end of Dec. in each year.

100 Herbaceous and Alpine Plants for 25s.
RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rockwork, which produce flowers and render the garden attractive all through the year. New LIST of sixty-four pages free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SPECIAL CHEAP OFFER. — PINES, Austrian, from 2 to 6 feet; LARCH, from 2 to 4 feet; FIR, Scotch, 12 to 24 inches; ELM, 3 to 4 feet, 4 to 5 feet; ASH, Common, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; BIRCH, 1½ to 2 feet, 2 to 3 feet, 7 to 8 feet, 8 to 10 feet; CHESTNUT, 1 to 2 feet; HORNBEAM, 2 to 3 feet, 3 to 4 feet, 7 to 8 feet, 8 to 9 feet; MAPLE, 4 to 10 feet; OAK, English, from 1 to 10 feet; POPLARS, Lombardy, 7 to 8 feet, 8 to 10 feet, 10 to 12 feet; POPLARS, American, 7 to 8 feet, 10 to 12 feet; PRIVET, Evergreen, 2 to 3 feet, 3 to 4 feet; PRIVET, Oval-leaf, 2 to 3 feet, 3 to 4 feet, fine; QUICK, THORN, 4, 5, and 6-yr., fine; SYCAMORES, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 8 to 9 feet; AUCUBAS, 2 to 3 feet; BERBERIS AQUIFOLIA, BOX, CUPRESSUS, various; ELDERS, Gold; CURRANTS, flowering; HOLLIES, in great variety; IVIES, in sorts; JUNIPERS, LABURNUMS, LAURELS, assorted; RHODODENDRONS, several hundred thousand of all sorts and sizes—beautiful stuff; RETINOSPORAS, YEWS, Common and Irish. For Price LIST, &c., apply to
ISAAC MATTHEWS AND SON, The Nurseries, Melton, Stoke-on-Trent.

DOUBLE AFRICAN TUBEROSES.—Extra fine, 10s. per 100, £4 per 1000; extra large, finest ever imported, 1s. 6d. per 10.
AMERICAN PEARL, ditto, 12s. per 100, £5 per 1000.
LILIUM AURATUM, cheapest for quality ever offered, 28s. and 35s. per 100.
MORLE AND CO., 1, 2, and 162, Fenchurch Street, E.C.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6s. per dozen plants, 12s. per dozen clumps; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3s. 6d. per dozen plants, 7s. 6d. per dozen clumps.
Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 2½d., free.
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

*THE COMMITTEE beg to GIVE NOTICE that they have secured permanent Offices at*

**No. 50, PARLIAMENT STREET, WESTMINSTER, S.W.,**

*and it is respectfully requested that all communications may be addressed there.*

*By Order,*
EDWD. R. CUTLER, Sec.

*November 3, 1885.*

PONSFORD AND SON offer at very low prices:—
LAURELS—in four vars.
EUONYMUS.
FLOWERING SHRUBS.
FRUIT TREES—Maidens to Bearing Trees.
MULBERRIES.
CONIFERÆ—many kinds.
Brixton, Surrey, and Bromley, Kent,
Telegraphic Address—"MULBERRIES, LONDON."

CARTER'S CHEAP BULBS
FOR PLANTING IN LARGE MASSES IN
SHRUBBERIES, BEDS AND BORDERS.

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| HYACINTHS, Red, White and Blue | 160/- | 18.. | 3/- |
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| NARCISSUS, mixed border varieties | 25/- | 3/- | 6d. |
| GLADIOLUS BRENCHLEYENSIS, vivid scarlet, extra large .. .. | 60/- | 7/6 | 1/3 |
| GLADIOLUS BRENCHLEYENSIS, Good Bulbs .. .. .. .. | 45/- | 5 6 | 1/- |

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| Narcissus, Poeticus | 3/- | Iris, mixed Spanish | 2/6 |
| Daffodils, single .. | 3/- | Anemones, double .. | 4/- |
| Crocus, mixed .. | 1/6 | Anemones, single .. | 3/6 |
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| Crocus, white .. | 1 9 | Scilla, pale blue .. | 3/6 |
| Crocus, striped .. | 1 6 | Scilla Siberica .. | 4/6 |
| Jonquil, Campernel | 6 6 | Snowdrops .. .. | 2/6 |

All Parcels Carriage Free.
Seedsmen by Royal Warrant to H.R.H. The Prince of Wales,
237 & 238, HIGH HOLBORN, LONDON.

PURPLE CATALPA.
Now offered for the first time.
RAISER'S DESCRIPTION.—The purple-leaved Catalpa is constant in this:—The tree grows constantly from early Spring to October frosts. There are four pairs of the young leaves (terminal), are always an intensely metallic purple. The older leaves are from black-purple to deep green. The original tree is about 18 feet high: every branch has a terminal crown of dark purple leaves all the time from April to October. The mature leaves are 10 to 18 inches diameter either way. Small Plants, 1 to 2 feet high, 10s. 6d.; larger, 2 to 3 feet, £1 1s.
H. WATERER, Importer and Exporter of Plants and Bulbs, 56 N., 38th Street, Philadelphia, U.S.A.

Until the End of December of this Year
I beg to offer,
*Packing Free and Carriage Paid throughout Great Britain,*
CONIFERÆ,
GRAFTS and CUTTINGS from AUTUMN, 1884,
**14s. per 100, £5 per 1000,**
in the following sorts:—

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| CHAMÆCYPARIS sphæroidea aurea | RETINOSPORA ericoides |
| CUPRESSUS Lawsoniana albo-spica | ,, lepto-clada |
| ,, ,, argentea | ,, pisifera aurea |
| ,, ,, argenteo variegata | ,, plumosa |
| ,, ,, aureo variegata | ,, ,, argenteo var. |
| ,, ,, compacta | ,, ,, aurea |
| ,, ,, elegans variegata | TAXUS elegantissima variegata |
| ,, ,, erecta viridis | ,, hibernica |
| ,, ,, Fraseri | THUIA Ellwangeriana |
| ,, ,, lutea | ,, Vervæneana |
| ,, ,, minima glauca | THUIOPSIS borealis viridis |
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A. M. C. JONGKINDT CONINCK,
*TOTTENHAM NURSERIES,*
DEDEMSVAART, NEAR ZWOLLE, NETHERLANDS.

EARLY PEAS FOR SEED.
PRIZETAKERS,
WILLIAM THE FIRST,
KENTISH INVICTA,
All harvested without rain.
Price 10s. per Bushel. Special quotations for 40 Bushels and upwards. Apply,
C. RANDELL, Chadbury, near Evesham.

Vines—Vines—Vines.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a splendid stock of GRAPE VINES; they are unsurpassed by any in the country, either for fruiting in pots or planting vineries. Black Hamburghs are especially fine. Planting Canes, 5s. and 7s. 6d. each; Fruiting Canes, 10s. 6d. each.
The Vineyard and Nurseries, Garston, near Liverpool.
Telegraphic Address—"COWAN, LIVERPOOL."

CHRISTMAS ROSES.
CHRISTMAS ROSES.
HELLEBORUS NIGER ANGUSTIFOLIUS, "Brockhurst" variety, pure white, very free, good grower, grand for Forcing and the best of all the Christmas Roses. Strong clumps, 1s. 6d., 2s., and 2s. 6s. each; 18s., 24s., and 30s. per dozen.
WM. CLIBRAN AND SON, Oldfield Nurseries, Altrincham; 12, Market Street, Manchester.

Bermuda Easter Lily.
LILIUM HARRISII.—This Lily, coming direct from Bermuda, must not be confounded with the variety generally sent from America under the above name, to which it is much superior, and different in bulb, growth, and flower.
Mr. WILLIAM BULL has just received his usual large importation direct from Bermuda, and can supply good bulbs at 2s. 6d. and 3s. 6d. each; gigantic bulbs, 5s. and 7s. 6d. each; a few monster bulbs, 1 foot in circumference, 10s. 6d. each.
LILIUM AURATUM.—Mr. WILLIAM BULL is now booking orders for good, plump, sound bulbs at 6s., 9s., 12s., 18s., and 24s. per dozen. All other good Lilies at equally low prices.
Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

PINUS ARISTATA.—"A correspondent who has tried the nursery trade in vain" for the above Pine, may surely find it in many nurseries, but nowhere so cheap and so good as with
MORRISON BROTHERS, Aberdeen, who can give fine healthy plants, 6 to 9 inches, at 1s.; 9 to 12 inches, at 2s. 6d and 3 to 4 feet, at 7s. 6d. each.
A LIST of all hardy Pines sent free on application.

FRANCIS R. KINGHORN begs to offer, in splendid stuff and at low prices, the following:—PLANES, 11 to 12 feet, straight stems and good heads; Caucasian and Round-leaf LAURELS, 3 to 4 feet, bushy; Oval-leaf PRIVET, 4 to 5 feet, bushy; Irish IVY, in pots, 5 to 6 feet, many shoots; SWEET BRIER, in pots, 3 to 4 feet; Double GORSE, in pots, 2 feet, bushy; BERBERIS DARWINII, in pots, 2 to 3 feet, bushy; LILACS, 5 to 6 feet; RIBES, 4 feet.
Sheen Nurseries, Richmond, Surrey.

ROSES.
20 Acres of grand plants in best varieties.
BUSHES, H.P., 8s per dozen, 60s. per 100. } *Packing and Carriage FREE* for Cash with Order.
STANDARDS, H.P., 15s. per dozen, 105s. per 100.
CLEMATIS (80,000), 12s. to 24s. per dozen.
ROSES, in Pots (80,000), 15s. to 36s. per dozen.
FRUIT TREES (74 Acres).
VINES (6000). 3s. 6d. to 10s. 6d.
ORCHARD HOUSE TREES, "Fruiting," in Pots.
STRAWBERRIES, 4s. per 100; Forcing, 15s. to 25s. per 100
ASPARAGUS, 2s. 6d. per 100; Forcing, 12s. 6d. per 100.
SEAKALE, strong Forcing, 16s. per 100.
EVERGREENS, CONIFERS ORNAMENTAL TREES (91 Acres).
FLOWERING SHRUBS, 8s. per dozen.
FOREST TREES, HEDGE PLANTS UNDERWOOD, &c

BULBS
Of Finest Quality.
*Descriptive LISTS of above and SEEDS free.*
RICHARD SMITH & CO.,
WORCESTER.

SPECIAL OFFER
OF WELL-GROWN STOCK.
6,000 FRUIT TREES, mostly Pyramids and Standards, consisting of best sorts, APPLES, PEARS, PLUMS, and CHERRIES.
15,000 GOOSEBERRIES, mostly Warrington; also some Red and Black CURRANTS.
60,000 ASPARAGUS and SEAKALE; the forcing Seakale is fine.
10,000 LAURELS, including rotundiflora and caucasicum.
20,000 IVIES, mostly small leaved.
5 000 TREE BOX.
5,000 POPLARS, LIMES, THORNS, CHESTNUTS.
*And for Special Quotations, &c., apply to*
HARRISON & SONS,
NURSERYMEN and SEED GROWERS,
LEICESTER.

Every Garden and every Gardener suited with a
SUPERB COLLECTION of ROSES,
at Prices ranging from 2s. 6d. to £20.
Carefully Packed, and sent Post-free or Carriage Paid to any Railway Station or Port in the British Isles.
FOR FULL PARTICULARS APPLY TO
EWING & CO.,
SEA VIEW NURSERIES, HAVANT, HAMPSHIRE.

ALL AGREE
THE "RED ROSE"
Is the most economical and powerful heating Boiler yet introduced.
Awards:—
International Exhibition, London—Silver Medal.
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Newcastle-upon-Tyne Horticultural—Very Highly Commended.
Royal Caledonian, Edinburgh—Unanimously Commended.

*The following Gentlemen, Nurserymen, and Hot-water Engineers have already kindley honoured with their appreciation and confidence by ordering the "Red Rose," several of whom have also forwarded most valuable testimonials:—*
H. R. HUGHES, Esq, Kimmel Park, Abergele, N.W.
R. C. CLEPHAN, Esq., Birtley White House, Chester-le-Street.
J. JONAH SMITH, Esq., Ash Lodge, Watford Herts.
Rev. R. D. SHAFTOE, The Vicarage, Bransperh.
EDWD. WILLIAMS, Esq, Cleveland Lodge, Middlesborough.
The TRUSTEES, Wesleyan Chapel, Chester-le-Street.
On account of the great success achieved at the Wesleyan Chapel the Primitive Methodists have also decided to order the "Red Rose" for their new chapel.
*Nurserymen:—*
Messrs. T. HARKNESS AND SON, Leeming, Yorkshire.
" JOHN E. KNIGHT, Wolverhampton.
" JOHN TURTLE, Welling, Kent.
" E. HILLIERS, Winchester.
" HUGH MUNRO AND SON, Lamesley, Co. Durham.
" A. DICKSON AND SONS, Newtownards, Ireland.
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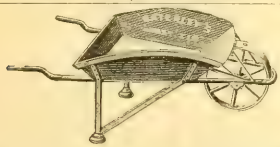
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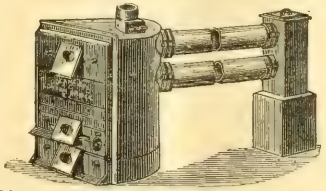
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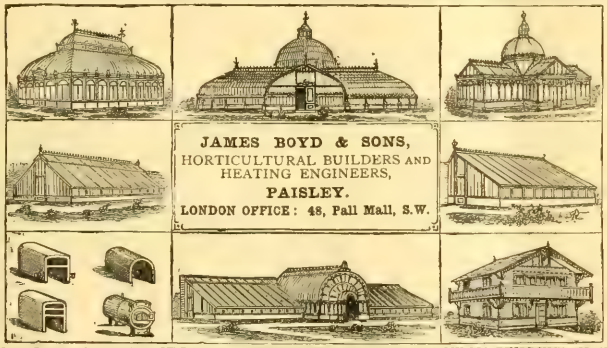
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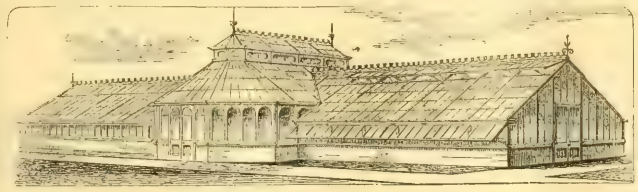


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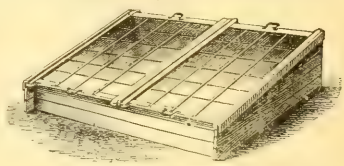
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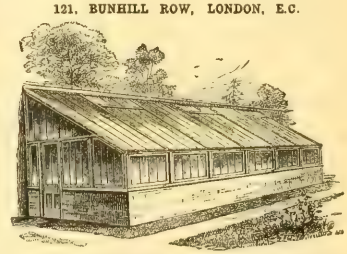
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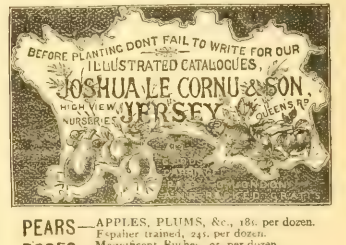
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KINGSTON HILL NURSERY,
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*NOVEMBER*,
All kinds of
DECIDUOUS AND EVERGREEN SHRUBS, FOREST TREES,
ROSES AND FRUIT TREES
AT GREATLY REDUCED PRICES.
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Magnificent Plants of the finest varieties. All home-grown, will transplant better, yield finer blooms, and give a greater quantity of bloom than Roses supplied from a warmer climate.
Twelve splendid Plants, 7s.; twenty-five, 12s. 6d.; fifty, 24s.; one hundred, 50s.; carriage paid. Purchaser's selection.
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,, DOUGLASII GLAUCA, 3 to 5 feet, hundreds.
,, HOOKERIANA or PATTONIANA, 3 to 5 feet.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds
,, PARRYANA GLAUCA, 1½ to 3 feet, hundreds All from seed.
CEDRUS ATLANTICA GLAUCA, 3 to 6 feet.
,, DEODARA, 6 to 9 feet, hundreds.
,, LIBANI (Cedar of Lebanon), 4 to 5 feet, hundreds.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 3, 4, 5 to 8 feet, thousands.
,, LUTEA, 3, 4 and 5 feet, hundreds.
JUNIPER, Chinese, 5, 8 to 12 feet.
PICEA CONCOLOR, 2 to 5 feet, hundred
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet, hundreds.
,, NORDMANNIANA, 4, 6, 7 to 10 feet, hundred
,, PINSAPO, 6 to 10 feet, hundreds.
PINUS AUSTRIACA, 3 to 3½ and 4 feet, well furnished and transplanted October, 1884, thousands.
,, CEMBRA, 3, 6 to 8 feet, hundreds.
RETINOSPORA OBTUSA AUREA, 3 to 6 feet.
,, PISIFERA AUREA (true), 3 to 6 feet
,, PLUMOSA AUREA, 3 to 5 feet.
THUIOPSIS BOREALIS, 3 to 6 feet, hundreds.
,, DOLABRATA, 3, 4, and 6 feet, hundreds.
THUIA LOBBII, 4 to 5 feet, hundreds.
,, OCCIDENTALIS LUTEA, 5 to 6 feet
,, SEMPER AUREA, 2½ to 3 feet, hundreds.
YEWS, Common, 3, 4, and 5 feet, thousands.
,, Common, 6 to 10 feet, hundreds.
,, Golden, of all sizes up to 10 feet.
We have many thousands as Pyramids, Globes, and Standards, in point of variety and size unequalled.
,, Golden, Seedlings, 3, 4, 5, to 8 feet.
,, Irish, 5 to 10 feet, hundreds.
,, Irish, Golden, Seedling, 3, 4, and 5 feet.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet, thousands.
RHODODENDRONS, 3, 4, 5, 6, 8 to 10 feet, thousands of finer plants than can be found in any other Nursery.
☞ The fine Standard and other Rhododendrons annually planted in Rotten Row, Hyde Park, are supplied by ANTHONY WATERER
KALMIA LATIFOLIA, healthy and well furnished plants, 18 to 24 inches, showing from twelve to thirty trusses of bloom
AUCUBA JAPONICA, 2½ to 3 feet, hundreds.
BAMBUSA METAKE, fine clumps, 5 to 8 feet high, transplanted spring, 1884, hundreds.
BOX, Greeen and Variegated, 3, 4, 5, 6 to 7 feet, thousands.
HOLLIES, Common Green, 3, 4, 5 up to 10 feet, thousands.
,, ALTACLARENSE, | 3, 4, 5 up to 10 feet, many thousands.
,, HODGINS', |
,, LAURIFOLIA, |
,, MYRTIFOLIA, |
,, SCOTTICA, |
,, Yellow-berried and other sorts.
,, Variegated, of sorts, 3, 4, 5 up to 10 feet, thousands.
,, Golden Queen, 3, 4, 5, 6, 7 to 10 feet, hundreds of beautiful specimens.
,, Silver Queen, 4 to 10 feet, splendid specimens.
,, Weeping, Perry's, on straight stems, with heads of ten to fifteen years' growth, hundreds.
,, Weeping, New Golden, a large quantity of beautiful plants.

The following trees have stout, straight stems, fine heads, and splendid roots, and have all been transplauted within two years:—
ACACIA BESSONIANA, 6 to 10 feet.
ACER DASYCARPUM, 13 to 15 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet
,, RETTENBACHII, 8 to 10 feet.
,, SCHWEDLERI, 12 to 14, and 14 to 16 feet.
,, WORLEYII, Standards, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, 9 to 12, and 12 to 14 feet.
BIRCH, Silver, 12 to 14 feet.
,, Purple, 14 feet.
CHESTNUT, Horse, 14 to 16 feet.
,, Horse, Scarlet, 12 to 14 feet.
,, Double, 10 to 12 feet
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 10 to 12 feet, 12 to 14 feet, and 14 to 16 feet.
,, Silver-leaved, 12 to 14 feet.
LIQUIDAMBAR, 6 to 8 feet.
ASH, Mountain, 10 to 12 feet.
MAPLE, Norway, 14 to 16 feet.
OAKS, American, 12 to 14 feet.
,, English, 10 to 12 feet.
PLANES, 14 feet and upwards.
POPLAR CANADENSIS NOVA, 12 to 15 feet.
,, BOLLEANA, 8 to 10 feet
SYCAMORE, Common, 14 to 15 feet.
,, Purple, 15 to 16 feet.
,, Variegated, Standards, 10 to 12 feet.

**Weeping Trees.**

BEECH, Weeping, Pyramids and Standards, 10 to 12 feet.
,, Weeping, Purple (true), Standards, 8 to 10 feet.
BIRCH, Young's Weeping, Pyramids, 10 to 12 feet.
,, Young's Weeping, Standards, 14 feet.
ELMS, Weeping, Standards, 10 feet stems.
HAZEL, Weeping, Standards, 8 to 10 feet.
LARCH, Weeping, 6 to 10 feet.
POPLAR, Weeping, Standards.
SOPHORA JAPONICA PENDULA, Standards, 8 to 9 feet.

Intending planters are invited to inspect the Plants growing; no one interested in such matters will regret the trouble. Catalogues convey but a very inadequate idea of such a Stock.

KNAP HILL NURSERY,
WOKING, SURREY.



THE
# Gardeners' Chronicle.

*SATURDAY, NOVEMBER 21, 1885.*


## SUNNINGDALE.

THE undulating moorlands, partly in Surrey, partly in Berkshire, are at all times interesting, at most times beautiful. Their interest lies in their geological conformation, in the speculations and researches into the reason why of these great deposits of sand and ironstone, in the inquiry what has fashioned this hill, levelled this plain, scooped out this valley?—why are sand and heather in one place, rich loam and gravel here, moorland and peat there? We may make a guess why the handsome Gentiana pneumonanthe is here—we are not surprised to hear of Droseras, and Narthecium, and Cotton-grass. But it is not the season to look for these, and our errand is not with them. Willows with clear yellow leaves, Birches with foliage of gold, bronzed Oaks mingle gloriously with blue Pines, whose dark heads act as a foil to the lovely orange-pink hue of their bark. These are what we see on a November morning, and, dull as the day is, the earth seems full of colour. But it is no fit day for botanising on the open moor. The day, however, must be bad indeed, if one cannot botanise in a well-stocked nursery. Not the trees and shrubs of our own country, beautiful as they are, not the lowly wildings which are never displaced in our affection by the glories of the florist, or by any new importations from far-off lands, can vie with the manifold interest of a collection from all available parts of the world, manifesting every variety of form, and colour, and adaptation. The two categories are different—one appeals to the sentiments, the other to the intellect. Japan and China, California, the Atlantic States, the Himalayas, the Chilian Andes—the temperate zone throughout the world—offer in a nursery, for comparison, their richest treasures in the way of trees and shrubs. Apart from the fascinations offered by their physical beauty, and the attractions furnished by their adaptation to the material and æsthetic requirements of the time, such plants furnish a quarry for intellectual enjoyment that is perfectly inexhaustible. In such a frame of mind you might enter any nursery, even the humblest, and find matter for research or speculation. If this be so with the humblest establishment, what must it be in the case of such a nursery as that we are about to visit?

The Sunningdale Nursery was an offshoot—a divergence from the famous establishment of Standish & Noble. What was done by that firm in the way of new introductions, hybridisation, and selection, it is not necessary for us now to do more than mention. Mention at least is necessary, for the old firm of Standish & Noble was the precursor whence the Sunningdale Nursery was evolved, and hence, in spite of the divergence in detail, the principle of continuity prevails, and the same knowledge, interest and care, which made the one establishment famous, have had a like effect here. A nurseryman has to grow what his clients require; it does not pay him to indulge personal tastes at the expense of business exigences. For all that some there

are who are so happily constituted that, while they are far from being slothful in business they yet manage to conduct their operations in the spirit of an intellectual pursuit as well as of a commercial enterprise. Sunningdale Nursery is such a place. Any man might get together rows of Laurels, quarters of Gooseberry bushes, "breaks" of common Rhododendrons, but the development, selection, and growth of choicer, more beautiful, more interesting sorts demand not only business tact, but a feeling and love for plants such as the mere man of business never attains to. You have but to walk a few paces in the Sunningdale Nursery to feel this. All that you see is so much "stock," good, plentiful, and well selected, but it gives evidence of something more than mere commercial value, it gives unmistakable evidence of critical knowledge and cultivated taste. Your severe business man might attach little value to the latter, but that would not be the feeling of the purchaser. The nurseryman may act as a public instructor, he may educate the public taste to his own level and thus create a demand for his stock in quarters where the ordinary commercial inducements would fail in producing any effect. The grand avenue of Abies Nordmanniana, the noble isolated specimens of Abies grandis, A. lasiocarpa (hort.), A. nobilis, A. magnifica, A. Albertiana, the Douglas Fir, the Libocedrus, Taxodium sempervirens, must strike the most heedless. Grand specimens as these are they are not readily movable. In the eyes of some people they would be deemed to lumber the ground, but if looked at only as advertisements and show cards their use in facilitating the dispersal of the smaller specimens duly prepared for removal by frequent lifting must be great. The lease of part of the ground having expired, the stock has been cleared, leaving these noble specimens available for those fortunate enough to create villa residences in this neighbourhood. Much has been cleared, as just mentioned, but much more remains to be removed, if some one be not found with sufficient enterprise to carry on an established business, for it is unfortunately an open secret that from ill-health Mr. Noble has deemed it prudent to diminish his anxieties and lighten his labours by disposing as best he can of his nursery and its contents. The attractions of the locality, its easy distance from town, the soil, scenery, and last, not least, the glorious specimen trees that might be available in future pleasure grounds carved out of the estate, should render the disposal of the whole or part of the nursery no difficult matter.

Among the smaller specimens of Conifers are the wiry-looking Athrotaxis cupressoides, bearing numerous cones, as figured in our columns a short time since; purple and golden Retinosporas, bronzy Chamæcyparis, elegant Prumnopitys, massive Thuiopsis dolabrata, silvery Junipers (virginiana glauca), towering Douglas Firs, among them the very beautiful glaucous variety; and scores more which it would be wearisome to name. It is not the season for Rhododendrons, but one cannot help admiring the regiments of well-formed standards of the best varieties, nor avoid speculating on the changes and chances the tiny seedlings we see by the tens of thousands in a sheltering wood not far off, undergo in their varied career from the seed-bed to the nursery rows. Hollies, in bush and as standards, are almost equally numerous and varied, and if we mention one in particular it is because while, in most places, it is apt to be shabby or inconspicuous, here it forms really handsome bushes—we allude to the small-leaved Ilex crenata. It is worth while mentioning this shrub as one well adapted for planting in smoky localities; even the smokiest, as we have proved by personal experience. Aucubas and Yuccas, invaluable also in towns, and scarcely less useful in the country, are found here in vast numbers and endless variety. Roses, of course, no nursery can be without, and here they were still showing flower, as if loth to leave the stage, or as if challenging the rampant and glowing Tropæolum speciosum, which is quite at home here, and the remaining Dahlias, Tritomas, and Gladioli in a test of endurance against the common enemy, frost; the whole making, with the Pampas-grass, a respectable floral display at a time when most of the deciduous trees were already bare or decked in the flaunting colours which, in this case, are the heralds of approaching dissolution.

Naturally at this time of the year our attention was more turned to the evergreen shrubs, but Mr. Noble has much too wide knowledge and too good taste to participate any further than he can help in the prevailing neglect of deciduous trees and shrubs. On the contrary, there is a fine selection here of all the best sorts, whether for silvicultural or ornamental purposes. The neglect of our planters, even of professional landscape gardeners and foresters, of the resources at their disposal is one of the regrettable features of the time. In great measure we believe it arises from such persons not studying the collections in our national arboretum at Kew, or even in the great tree nurseries, with sufficient care at the right season. Now that the leaves have well-nigh fallen, and only the more tenacious remain (though among these are the most gorgeous) we can only mention a few, and prominent among them the old Rhus cotinus. There are few more striking shrubs than this when in flower, when its great fuzzy panicles of palest lilac excite astonishment and admiration alike; and there are few which are more resplendent in purple and gold and scarlet than this is in the autumn. Ptelea trifoliata and Spiræa opulifolia aurea are all ablaze with golden foliage, S. prunifolia is almost equally gay in red attire; Liquidambars in glowing crimson, Prunus Pissardi purple all the summer, and retaining its bravery to the last; Comptonia asplenifolia, so like a Fern, but now with a peculiar pale coppery hue unlike anything else. And here we get a wrinkle from our intelligent guide—if you want the plant to grow well and colour well, cut it back every year. This, too, is the secret in the case of the Golden Elder, which, if not cut back in this way, is apt to revert to the green condition. Spiræa Lind-




FIG. 144.—SECTION OF A. PROCERUS. (SEE P. 649.)

leyana is another shrub of surpassing elegance, which does best under similar treatment. Rhodotypus kerrioides is still in flower, but except as a curiosity we should not recommend it for general use. Exochorda grandiflora, on the other hand, is a shrub every one should have if they can get it; but it is, we learn, difficult to propagate. Clerodendrum trichotomum is showy in flower, and bold as to foliage; it flowers late, but—smell it not! The new American Catalpa speciosa seems likely not to be of much use here, and seems even more tender

## A COMMON EDIBLE FUNGUS.

AGARICUS (LEPIOTA) PROCERUS, *Scopoli*.—Agaricus procerus is one of the commonest, and one of the most delicious, if not the most delicious, of all edible fungi. It also possesses the great advantage of being very easily recognised. With the assistance of the following notes it should be impossible for any moderately observant person to mistake any other fungus for the grand procerus.

As far as I know, no one has ever said a word of disparagement about the fungus before us. Every one among our side dishes at table." Dr. H. Wharton, M.A., who is certainly no enthusiast for fungi as food, is obliged to write, "procerus is indeed delicious, soft, savory. Its close ally rachodes, I have found quite as dainty." We often find our poor relations "quite as dainty" as ourselves, sometimes more so. Fries writes, "Edulis sed lentus." Roques writes:—

"Il est peu de Champignons, aussi légères, aussi délicates, aussi faciles à digérer. Il a peu de chair, mais il est très savoureux, d'une odeur douce et fine. Son usage est très répandu. Plus d'un ménage champêtre en fait presque sa nourriture pendant plusieurs semaines."

And Paulet says:—

"Elle est d'une saveur très agréable et d'une chair tendre, très délicate et très bonne à manger. Les amateurs la préfèrent même au Champignon de couche comme ayant une chair plus fine et étant beaucoup plus legère sur l'estomac."



FIG. 145.—AGARICUS PROCERUS, THE TALL OR PARASOL AGARIC.

After these notes of introduction and admiration Agaricus procerus may be briefly described. The illustration (fig. 145), engraved from Nature, shows a group of three examples growing in an *open place* amongst low-growing flowering plants. To make out the botanical characters of A. procerus it is necessary to get a good fresh example and cut it in two across the top and down the stem, as was done with A. rubescens, p. 460. The accompanying outline (fig. 144) shows the section of a large example of A. procerus. The salient characters given below are printed in italics. A. procerus *grows in pastures*, orchards, lowlands, on banks, and in *open places*, amongst bracken, &c. *It does not grow in woods.* Observe that the cap is *fleshy*, as shown by the thickness at A; that it is *umbonate—i. e.*, it has a boss or swelling in the middle, like the boss of a Greek shield, at B; that the *scales*, C, at length *separate* from the flesh, as at D, E, F (in A. rubescens they are adherent). The stem is piped or hollow, G and H; and it is bulbous, J. There is a ring or collar round the stem, K; it is not permanently fixed to the stem (as in A. rubescens), but is *loose*, L; and when the fungus is mature the ring may be easily pushed up and down the stem with the fingers. Sometimes the ring breaks and falls away from the fungus to the ground. The *gills do not touch the stem*, but are *remote from it*, M, M. In this species the cap is very readily detached from the stem; the stem may be readily pulled away without breaking the cap, and a depression is then left under the umbo or boss of the cap on the dotted line, N.

This section is a good example of the *line of the hymenophorum* (hymen, or fruit-bearer), O being distinct from the line of the stem, P; a most important character, but in some examples unfortunately more potential than definite. The spores or seeds are white; a group of four, enlarged 500 diameters, is shown at Q.

The fungus may be popularly described as follows:—The cap (pileus) is dry, fleshy, and soft, 3 to 7 inches or more in diameter; in young unexpanded examples the cap is ovate (see illustration), then expanded and umbonate; at first brown in colour. Cuticle of cap thin, entire over the centre umbo; torn towards the margin into broad, brown (at length evanescent and separating) scales or flakes. Margin and outer surface beneath the scales rough, white, pale buff or pinkish in colour. Gills and spores white. Stem hollow, tall, 6 to 10 or more inches high, half an inch or more thick at top, variegated with small close-pressed brown scales (like the skin of a snake), bulbous at the base. Ring at length loose on the stem. Gills remote or unconnected with the stem. Taste and odour when raw pleasant.

The sub-genus of Agarics to which A. procerus belongs is named Lepiota, from λεπίς = a scale, in reference to the scaly top; procerus simply means tall, a somewhat indefinite specific name, as many fungi are tall, and many others are considered by some as scaly things.

Agaricus procerus is really a very close relation of the common pasture Mushroom, although it is (artificially) far removed from it in our Floras. The chief distinguishing characters are the white gills and white spores of the former, and the purple-brown gills and spores of the latter. There are many species of Lepiota, allied to the plant before us, and I should be inclined to trust several of the larger species as edible. The first four species of Fries, viz., A. procerus, A. rachodes, A. excoriatus, and A. gracilentus, I believe, are the same thing. They all gradually

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than the common sort; Viburnum plicatum, the Japanese Gueldres Rose, is fine in its bold plicated foliage, and in the summer noteworthy for its compact heads of snow-white flowers. But it is time to draw our notes to a close, not for lack of matter forsooth, for there are the forest trees and fruit trees unvisited, but simply that we may not weary the reader, and thus fail in our object of inducing him to go and see for himself.

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ROYAL HORTICULTURAL SOCIETY. — Captain E. S. Bax (late 84th Regiment) has been appointed Assistant-Secretary to the Royal Horticultural Society, in place of Mr. Henry R. Newport.

who has written about it, or tasted it, has had good words for it. It is esteemed by many as better than the pasture Mushroom itself, for Agaricus procerus, whilst possessing all the good qualities of the latter, is much more delicate in flavour. Mrs. Hussey says it is the "King of Mushrooms," but to some people, including the writer, this would be but a dubious compliment. The Rev. M. J. Berkeley, who has always been reticent in recommending fungi as food, has been "conquered" by procerus, for he says it is "a most excellent Mushroom, of a delicate flavour," and "it must be considered a most useful species." Dr. Badham writes, "Were its excellent qualities better known here, they could not fail to secure it a general reception into our best kitchens, and a frequent place

run into each other and it is often impossible for the most acute observer to distinguish one from the other. A. rachodes has sometimes been termed unwholesome, and A. excoriatus (perhaps from some misunderstanding of the meaning of the somewhat threatening specific name) has been called poisonous; but all four are very good for the table, A. procerus being the chief dainty. Some of the larger species, beginning with A. acutesquamosus, are perhaps best avoided. One small species, A. cristatus, is known by its disgusting odour. Several grow in greenhouses, and are no doubt of exotic origin, as Sowerby's A. cepæstipes and my Georginæ. Dr. Cooke, in the new edition of his *Handbook*, now in course of publication, says the latter species was named by me "in honour of Mrs. Worthington G. Smith." This unfortunate mistake of the Doctor's might have led (in some quarters) to a domestic altercation: Georgina is some one else!

The proof of procerus is in the eating. Like all other Mushrooms, it requires to be well and skilfully cooked, and served quite hot. Sound examples only must be prepared for the table.

The late Dr. Bull, of Hereford, carefully wrote out, from experience, the best modes of cooking A. procerus, and for the following methods fungologists are chiefly indebted to him. The modes are approved by the writer and are adopted by the Woolhope and other clubs:—

### Modes of Cooking Agaricus procerus.

It may be cooked in any way, and is excellent in all.

*Broiled.*—Remove the scales and stalks from the Agarics, and broil lightly over a clear fire on both sides for a few minutes; arrange them in a dish over fresh made, well-divided toast; sprinkle with pepper and salt, and put a small piece of butter on each; set before a brisk fire to melt the butter, and serve up quickly.

If the cottager would toast his bacon over the broiled Mushrooms the butter would be saved.

*Baked.*—Remove the scales and stalks from the Agarics, and place them in layers in a dish; put a little butter on each, and season with pepper and salt. Cover lightly, and bake for twenty minutes or half-an-hour, according to number placed in the dish. Put them on hot toast in a hot dish. Pour the hot sauce on them and serve up quickly.

*Stewed.*—Remove the scales and stalks from the freshly gathered Agarics and stew them for twenty minutes in milk and water, which will be improved by a little good gravy; then season with pepper and salt, and add a blade of mace if desired. Thicken the same with a spoonful of flour, a little cream, or the yolk of an egg. Boil for a few minutes, and serve up quickly in a hot, well-covered dish.

*Delicately Stewed.*—Remove the stalks and scales from the young half-grown Agarics, and throw each one as you do so into a basin of fresh water slightly acidulated with the juice of a lemon, or a little good vinegar. When all are prepared, remove them from the water, and put them into a stewpan with a very small piece of fresh butter. Sprinkle with white pepper and salt, and add a little lemon juice. Cover up closely and stew for half an hour. Then add a spoonful of flour, with sufficient cream, or cream and milk, until the whole has the thickness of cream. Season to taste, and stew again gently until the Agarics are perfectly tender. Remove all the butter from the surface, and serve in a hot dish, garnished with slices of lemon.

A little mace, nutmeg, or ketchup may be added; but there are those who think the spice spoils the Mushroom flavour.

*Procerus Sauce.*—Chop up about half a pint of young Agarics, pepper and salt, and add an ounce of butter rolled in flour. Put in a stew-pan over a slow fire for a few minutes; add half a pint of milk, or, better still, cream, and boil gently, stirring all the time until it is sufficiently thick and smooth. Pour round boiled fowls or rabbits, or any light *fricasté*.

Beef or veal stock may be used when a brown sauce is required; and some will think a little mace or nutmeg, or a few drops of Indian soy, or a little Harvey Sauce, a good addition. The brown sauce is excellent for steaks, cutlets, game, or any kind of *ragouts*.

*Scalloped Procerus.*—Mince young fresh Agarics, season with pepper, salt, and a little lemon juice, add a little butter, and stew in a warm oven for ten minutes, then put them in a scallop tin, layer by layer, with fresh bread crumbs, moistened with milk, cream, or good gravy; bake for five minutes, and brown well before a quick fire.

*Cottagers' Procerus Pie.*—Cut fresh Agarics in small pieces, and cover the bottom of a pie-dish. Pepper, salt, and place on them small shreds of fresh bacon, then put a layer of mashed Potatos, and so fill the dish layer by layer, with a cover of mashed Potatos for the crust. Bake well for half an hour, and brown before a quick fire.

*Procerus Omelette.*—Mince some young fresh Agarics; season with pepper and salt; add butter, and set them in the oven whilst you whisk well the whites and yolks of half a dozen eggs; then put 2 oz. of butter into the frying-pan, and heat until it begins to brown; having again well whisked up the eggs with three tablespoonfuls of the prepared Agarics and a little milk, pour it lightly into the boiling butter; stir one way, and fry on one side only for five or six minutes; drain it from the fat; roll it up and serve quickly on a hot, well covered dish.

*Potted Procerus.*—Remove the scales and stalks from young fresh Agarics; sprinkle with pepper and salt, and set aside for three or four hours; then place them in the stewpan with the liquor that will have exuded and stew until dry; next fry in butter for a few minutes; put them into small jars, and when cold pour in as much butter, melted, as will just cover them; when again cold, pour on a little melted suet, and tie down with bladder.

When required for use, soak them for two or three hours in a little warm milk and water, and stew with milk or cream, or stock, and use it in any way that may be required.

*Essence of Procerus.*—Sprinkle young but full-grown Agarics with salt, and let them stand for six hours. Then beat them well up, and the next day strain off the liquor, and boil very slowly until it is reduced to one half the quantity.

This essence will not keep long, but is much preferable to ketchup, where the delicate flavour of the Agaric is overpowered by spice. Add to it one-eighth part of good French brandy, or half its quantity of any wine, bottle carefully, and it will keep for any reasonable time.

*Procerus Ketchup.*—Place the Agarics of as large a size as you can procure, but which are not worm-eaten, layer by layer in a deep pan, sprinkling each layer as it is put in with a little salt. The next day stir them well up several times so as to mash and abstract their juice. On the third day strain off the liquor, measure, and boil for ten minutes, and then to every pint of the liquor add half an ounce of black pepper, a quarter of an ounce of bruised ginger root, a blade of mace, a clove or two, and a teaspoonful of mustard seed. Boil again for half-an-hour, put in two or three Bay leaves, and set aside till quite cold. Pass through a strainer, and bottle; cork well, and dip the ends in resin. A very little Chili vinegar is an improvement, and some add a glass of port wine or strong ale to every bottle.

Care should be taken that the spice is not added so abundantly as to overpower the true flavour of the Agaric. A careful cook will keep back a little of the simple boiled liquor to guard against this danger; a good one will always avoid it. "Doctors weigh their things," said a capital cook, "but I go by taste." But then, like poets, good cooks of this order must be born so, they are not to be made. (Dr. Bull.)

*Procerus,—à la Provençale.*—Steep for two hours in oil, with some salt, pepper, and a little garlic; then toss up in a small stew-pan over a brisk fire, with Parsley chopped, and a little lemon-juice. (Dr. Badham.)

"Comme il est très léger et très délicat, il faut le faire sauter dans l'huile fine aprés l'avoir assaisonné d'un point d'ail, de poivre, et de sel; en quelques instants, il est cuit. On le mange aussi en fricassée de poulet, cuit sur le gril, ou dans le tourtière avec de beurre, de fines herbes, de poivre, de sel, et de la chapelure de pain; on ne mange point le tige, elle est d'une texture coriacé." (Roques). *Worthington G. Smith, Dunstable.*

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Fruit Culture in Los Angelfs.—In the Northern and Eastern States of Los Angeles a great variety of semi-tropical fruits, such as the Orange, Lemon, Lime, Pomegranate, and Fig, are cultivated. Every year the average of fruit culture is increased very largely. Peaches of the finest quality sell at the orchards for one halfpenny per pound. Even at this low price a good Peach orchard will pay £60 per annum per acre. Grapes sell at from £3 to £5 per ton. The products of the orchards are either dried, evaporated, canned, preserved, crystallised, or sold green. The crystallisation of fruits as practised in the South of France has recently been commenced, and is meeting with much success.

# New Garden Plants.

### Aërides Bernhardianum, *n. sp.**

Mr. Harry Veitch has kindly sent me this surprising novelty with this note:—"The Aërides was sent to us by Mr. Curtis from Borneo; we know nothing like this." Neither do I. The position of the laciniæ of the lip, the side laciniæ overlapping one another, and the front ones covering both in front side, are great peculiarities, and I cannot remember to have seen anything like it except in Aërides Leeanum. There is a strong, thick, abrupt, emarginate callus in the base of the mid-lacinia, under it a small triangular one, and lower down on the sides of the mouth of the spur two rounded, swollen lines. The appearance of the raceme is almost that of Aërides quinquevulnerum. The leaf is narrow, strap-shaped, and unequally bilobed.

It is a great satisfaction to me to dedicate this fine novelty, with hearty gratitude and best wishes, to Mr. Theodor Bernhardi, now of Erfurt, late Curator of the Leipsic Botanic Gardens, who was surpassed by no one in skill and zeal and love for plants during the time he held his difficult position. *H. G. Rchb. f.*

### Oncidium Hübschii, *n. sp.**

A new Oncidium of the pyramidale group. It has an exceedingly branched pyramidal panicle, flowering like others of the same group. The bipartite orange coloured wings of the column give the best character. The lip is narrower in front than at the base, and wears a very peculiar system of calli. Colour sulphur-coloured with some brown tint. It was imported by Mr. F. Sander, and sent to the eminent orchidist, Baron Hruby, of Petschkau, who kindly forwarded me the first inflorescence, laden with very numerous flowers. The Baron informs me it was sent him, in 1883, by Mr. Hübsch, from Ecuador. He is one of the numerous Sanderian collectors. I feel very happy to dedicate the species to its persevering discoverer. *H. G. Rchb., f.*

### Three New Anthuriums.

To Mr. W. Bull I am indebted for the following three new members of this already unwieldy genus. Of these the hybrid, A. chelseinsis, is much the finest for horticultural purposes, although A. Veitchii var. acuminatum, will, when fully developed, probably be as bold and ornamental a plant as the typical form. A. flavidum is allied to A. indecorum, but the sinus of the leaf is much more open, the leaf is punctate dotted beneath, and the ultimate areolation larger in A. flavidum; it appears to be one of the tall-growing or climbing species, and will make a good foliage plant.

*Anthurium chelseiensis*, n. hyb., N. E. Brown.—A fine handsome hybrid between A. Veitchii and A. Andreanum, with leaves resembling those of A. Veitchii, which I suspect to be the seed-bearing parent; they are, however, more ovate, and the veins rather fewer and less arched backwards, at least in some of the leaves, and the midrib is acutely keeled beneath, instead of being flat with merely a raised line, as in A. Veitchii. The petioles and scapes are terete. The spathe is broadly cordate, cuspidate at the apex, 3½—5 inches long, 2¾—3½ inches broad, spreading, of a rich crimson colour, quite smooth and somewhat glossy, but not so much so as A. Andreanum. Spadix 3 inches long, about ¼ inch thick (in fruit ⅜ inch thick), slightly tapering, basal part white, apical part yellowish at first; styles protruding about ⅛ line beyond the sepals. The spadix is more tapering, and the styles appear to me rather more protruding than in A. Veitchii. It is to my mind a more handsome plant than A. Ferrierense, and about equal to another new hybrid derived from A. Andreanum, raised by the Compagnie Con-

* *Aërides Bernhardianum*, n. sp.—Foliis lineari-ligulatis apice obique bilobis; racemo plurifloro Aeridis quinquevulneri, sepalis tepalisque affinium; labelli lacinis lateralibus subquadratis imbricantibus, lacinia mediana ligulata acuta integerrima illas tegente, calcare antrorsum verso conico brevius-culo, callo emarginato magno in basi laciniæ anticæ, callo parvo triangulo supposito, lineis gemmis incrassatis infra circa ostium inferius, rostello brevi. E Borneo, introd. cl. merc. Lond. Veitch. Th. Bernhardi, per longum tempus curatori (horti botanici Lipsiensis), viro meritissimo grato animo dicatur. *H. G. Rchb. f.*

* *Oncidium Hübschii*, n. sp.—Aff. Oncidio pyramidali, Lindl.: labello basi latiori cordato, ab istomo brevi antice obcordato; callis in basi, 2-angulatis, quaternis styliformibus medianis ternis, styliformibus antepositis; alis. Columnæ bicuriburibus, cruribus, linearibus extus, retusis, denticulatis. Ex Ecuador, mis. coll. Hübsch, cui dicatum. *H. G. Rchb., f.*

tinentale d'Horticulture, which will be published in an early number of *L'Illustration Horticole*—the two are, however, quite distinct in foliage and in the colour of their spathes.

*Anthurium Veitchii var. acuminatum*, N. E. Brown.—The typical A. Veitchii, now so well known, has an elongate-oblong leaf, with nearly parallel sides for about three-fourths of its length, and a very narrow sinus, the basal lobes often overlapping more or less. In this new variety the leaf is ovate-lanceolate, gradually tapering in a slightly curved line to an acuminate point, the sinus is open and triangular, the veins, especially the basal ones, are less arched backwards, and there are rather fewer of them, though as I only examined a few leaves of one plant this may not be the case with all. The inflorescence is the same as in the ordinary A. Veitchii. It has been introduced from Columbia by Mr. Bull.

*Anthurium flavidum*, n. sp., N. E. Br.—Stem elongating. Petioles terete, 12—18 inches long, 2½—3 lines thick, light green. Lamina 10—14 inches long, light shining green, cordate-ovate, apex acuminate, base cordate with rounded basal lobes, and a very broad rounded sinus 3—4 inches across, and 1—2 inches deep between them; primary lateral veins 12—14 on each side the midrib, nearly straight or slightly curving, all ascending, the basal lobes 3-veined, the veins uniting about ¼ inch from their origin from the base of the midrib, and denuded in the sinus, intramarginal vein continuous, 1—3 lines distant from the margin; all the veins and midrib acutely prominent on both sides, but on the upper side of the leaf they are at the same time depressed in channels below the general surface; under-surface paler than the upper, and minutely punctate-dotted. Scape 5—6 inches long, sub-terete, 1½—2 lines thick, pale green. Spathe spreading, yellowish or pale yellowish-green, oblong, abruptly cuspidate, 2—2½ inches long, ¾—1 inch broad, cusp 4 lines long. Spadix 1¾—3 inches long, 3—4 lines thick, terete, obtuse, scarcely tapering, sessile, pale violet-pink. A native of Columbia, whence it has been imported by Mr. Bull. It appears to be a tall-growing species, and although not so gay as some others of the genus, is still sufficiently ornamental to recommend itself to lovers of this class of plants. Its position in the genus is next to A. indecorum, Schott. *N. E. Brown.*

## SEEDLING FRUIT TREES.

MR. W. INGRAM's remarks upon this subject at p. 589 tend to confirm an idea that I have long entertained, viz., that seedling Apples, Pears, and possibly other fruits, may under the conditions of the soil and climate, &c., of the districts in which they have originated be found to be possessed of qualities which they will not retain when transferred to other localities where similar conditions do not exist; while on the other hand, varieties may have been discarded on being found of little value in the locality where they originated, but which might, under the influences of other soil and climate, be found to be possessed of desirable qualities.

Many years ago I found that such varieties of the Pear as the Grey Achan, Moorfowl Egg, &c., which in the cool moist climate of the South of Scotland are found to be of excellent quality as dessert Pears, were worthless when produced in the comparatively arid atmosphere and drier soil of some parts of the Eastern Counties of England, where even such varieties of the Apple as Bess Poole and Betty Geeson, &c., which are deservingly esteemed in the Midland Counties, are found to be of little value. Many years ago a child sowed a few Pear pips in a pot of earth, and in the course of time some of the plants produced by the seeds thus sown produced fruit. The seedlings were all very distinct from each other in foliage as well as in fruit, and so far as was known were distinct from existing varieties—the fruit of one variety at least proving to be of such excellent quality that it was considered worthy of being shown before the Fruit Committee of the Royal Horticultural Society at its meeting of October 23 1874, when a First-class Certificate was awarded to it, and an illustration of it appeared in the April number of the *Florist and Pomologist* for 1875; and the Editor (Mr. T. Moore), in alluding to this fruit, writes as follows:—"If we cannot claim for Old England the parentage of many of our favourite Pears, we may at least assign to her some of the very best quality, and among these must rank the subject of our present illustration—Pear Lucy Grieve. As will be seen from our figure, this variety is remarkable for its long, narrow, Willow-like leaves, which gives the tree a peculiar appearance. The fruit is full medium size, oblong pyriform, broadish just above the middle, its average weight exceeding 7 oz. The colour is clear deep lemon-yellow, thinly marked with russet dots, and having a small russet patch about the eye and the stalk. The flesh is moderately firm, fine grained, tender, and melting, very juicy, with a rich, luscious flavour, and a slight and agreeable dash of acidity, such as is occasionally met with in the Glou Morçeau. The odour of the fruit is penetrating and agreeable, and its appearance something like that of an elongated Glou Morçeau."

Dr. Hogg, in the fourth edition of the *Fruit Manual*, 1875, gives a lengthened and equally favourable description of this Pear, ending as follows:—"Flesh white, very tender and melting, very juicy, and richly flavoured. This is a delicious Pear, and has the texture of flesh of Marie Louise; it is ripe in October." Dr. Hogg further says:—"I named the Pear Lucy Grieve as a memorial of the raiser." Under this name it was distributed by the Messrs. E. G. Henderson & Son, then of the Wellington Road, St. John's Wood. The original tree still exists upon a low wall, facing south, in Culford Garden, near Bury St. Edmund's. This season the tree only produced a few fruits, part of which were kindly sent to me, and these were examined and tested by several good judges of fruit, who agreed in considering it well worthy of all that had been said in its favour; yet, strange to say, it has not in any instance, so far as I know, been exhibited at the Pear Congress just closed, and this circumstance leads me to think that this variety may possibly be one of those whose good qualities are only retained in the soil and locality which gave them birth. As has been said, the foliage, &c., of this variety are peculiar, and it can hardly have been confounded with other varieties; and should this communication chance to meet the eye of any reader who may have succeeded in fruiting it, they may possibly be inclined to favour your readers, as well as the writer, with their opinions respecting it. *P. Grieve, Bury St. Edmund's.*

## Foreign Correspondence.

VEGETABLE PRODUCTS OF DALMATIA.—Reporting on the agriculture of Ragusa, the British Consul says the country is now adapted to the rearing of the silkworm and the cultivation of the Mulberry. The secret of the production of silk by means of the silkworm was, it is said, long jealously guarded by the Chinese, but was at length disclosed to the Emperor Justinian through the treacherous proceedings of a princess of China who, on leaving China to marry the Khan of Khotan, managed by the aid of her bridal robes to deceive the vigilance of the guards on the frontier, and for the first time carried the eggs of the silkworm out of the country, and so gave her husband a surprising nuptial gift. About the year 552, by means of missionary monks in Central Asia, Justinian managed to procure a supply of eggs, and in the reign of his son the manufacture of silk in Europe became established.

Under the protection of the Byzantine Emperors Dalmatia was one of the first countries in which the culture of silk became general, and there can be little doubt that the sacerdotal garment, called the Dalmatic, owes its name to its having been originally fabricated in silk. The cultivation of the silkworm has, however, been gradually diminishing in Dalmatia, and is still diminishing.

One of the chief articles of export of Ragusa in ancient times was dried Figs to Venice, and the Fig tree is still much cultivated, and the dried Fig of Dalmatia is of a very fine quality. The cultivation of the Fig has, however, much fallen off since the flourishing period of the provinces.

The same may be said of the Almond, which also flourishes well. The most esteemed kinds have a tender shell, which can be broken easily with the fingers, and large quantities are exported to other parts of Austria. Both Oranges and Lemons thrive in the southern parts of Dalmatia, but their cultivation is much neglected. The Carob tree is also abundant, and grows wild.

Little or no attention is given to the cultivation of garden produce; all vegetables grow pretty much as they will. Asparagus grows wild in abundance in the mountains, but none is grown in the gardens. Lettuce also grows abundantly, but is of inferior quality, for a supply of which Ragusa, with a superior climate, is sometimes dependent on Trieste. The national vegetable is the "Kupus," a species of Cabbage, which only requires planting once in three years, and requires no attention.

The reputation of the flowers of the Chrysanthemum cinerariæfolium as an insecticide has suffered on account of defective kinds, and the adulterations of it, which have found their way into the market; however, when well selected and prepared there is no doubt of its efficacy, and it is especially valuable for the protection it affords to costly furs and stuffs against the attacks of moth. The best quality comes from the island of Tesina; the plant is said to thrive better in some localities than in others, and to lose its insecticidal powers out of Dalmatia, where it is indigenous. Another plant which thrives particularly well in Dalmatia is the Sumac, which is much used in tanning leather.

ESPARTO IN TUNIS.—Reports from Tunis state that the Esparto-grass trade is now carried on there on a large scale, and large tracts of Esparto-producing fields have been bought by speculators. The Anglo-French Esparto Fibre Company are developing their trade at Abouhedma, and a tramway is now being laid down by the same to carry the Esparto fibre to the coast. But export duty is very heavy on this article, and competition by Tripoli and Algeria, where Esparto pays no export duty, is telling much on the trade. This trade is said to be amongst the very foremost resources of the Lousa district. "Through good and bad, dry or rainy years, there is always a crop of it. The Arabs fall back on it chiefly in times of scarcity, when successive years have brought them deficient crops. But the duty on this article, especially at Lousa, is so heavy as to deter the Arabs from pulling and bringing it to the market, except when they feel the pinch of poverty."

VANDA CŒRULEA AT PETSCHKAU.—I have read several times about this beautiful and distinct Orchid in the *Gardeners' Chronicle*. Mr. E. Jenkins writes on p. 598 about a fine specimen, which surely must be a very healthy plant and a magnificent sight. After this I think it may still be interesting to some of your readers to be informed that we have two strong single-headed plants of V. cœrulea, each carrying one spike, one with twenty-one, and the other with eighteen flowers and buds. Just now the lowest flowers are fading, and a few top buds are not yet opened, but there are twelve to fourteen well expanded and well coloured flowers on each. The variety is a very good one (both the same, coming from one original plant), measuring over 9 cm. (over 3½ inches) across the petals.

I keep the plants in summer in a span-roofed house, with thinly whitened glass, leaving the ventilators open day and night in favourable weather, say during three months (stormy nights excepted), where the temperature on the hottest days attains 100°—110° Fahr., and gets down to 65° and 55° Fahr. at night sometimes. In October I take them to the coolest end of the intermediate-house, which is well aired in favourable weather, even in winter, and kept at this end of the house, where the temperature stands at 55°—60° Fahr. at night. Those flowering and those that have not yet flowered are all established in pots, with crocks and charcoal, with some sphagnum on the top. At the present time they get just enough water to keep the sphagnum and crocks damp, till February or March, at which time the potting, if required, is done, and they begin to get more water. When I place them in the above-mentioned house in May they are syringed daily at night when the days are sunny and warm. *V. Faus, Petschkau, near Kolin, Bohemia.*

DAPHNE RUPESTRIS.—Any one who has once seen this gem of the Alps in its native habitat (South Tyrol), where it sends its woody roots far back into the very narrowest crevices possible, and then carpets the face of the limestone crags with its dense prostrate twiggy shoots and dark green, leathery, blunt leaves—in some instances forming compact masses nearly half a yard across—would hardly expect to see it brought down from its home, 5000 to 6000 feet elevation, to the level of man's habitations, and there grown as a standard; such a feat, however, is accomplished by Mr. Maly, of Vienna, who is an old and ardent lover of alpine plants, as may be seen when viewing his most interesting alpine garden, where many fine examples of these plants are growing.

SILENE ACAULIS.—This was as fine, if not finer, than I ever remember seeing it, either cultivated or

wild. The same remarks equally apply to many other rarities. However, what interested me most was that which Mr. Maly showed us last—this little gem, Daphne rupestris. It had been grafted on stems 6 to 9 inches high, surmounted with an umbrella-like tuft of dark glossy leaves, perhaps 4 to 6 inches in diameter; the stems are about the thickness of an ordinary lead-pencil. They are extremely quaint, and highly interesting, and when in flower must be very pretty. The blossoms are large, of a soft rosy pink, waxy in texture, and in the highest degree fragrant. These results are not the work of a year, but have required fourteen years of loving and watchful care, which I am sure they have had, they are so clean and thoroughly healthy. *R. P.*

## ABIES NOBILIS.

EVERY one interested in Conifers is familiar with this tree; which is one of the most valuable of Douglas' introductions. Its history has been given again and again, and its characters are pretty well known alike to the amateur and to the professional arborist. It is not, therefore, desirable to repeat details that may be got from any text-book; it will suffice to give one or two extracts from the latest and most trustworthy sources. Engelmann thus describes—

"*Abies nobilis of Lindley*.—A magnificent tree, 200 feet high, with thick cinnamon-brown bark (red inside), leaves rigid, curved upward, covering the upper side of the branchlets, glaucous and stomatose, and keeled both on the upper and under side, acute or obtuse, about 1 inch long, only on the youngest trees or lowest branches longer (1½ inch), flatter, slightly grooved and somewhat two-ranked; cones cylindrical-oblong, thick, 6–9 inches long by 2½ or 3 inches broad, obtuse, almost covered by the exsert reflexed cuneate cuspidate bracts; scales comparatively narrow (1½ inch wide by 1 inch long or more); seeds slender, with a cuneate-triangular somewhat retuse wing; embryo with seven or eight cotyledons.—*Penny Cyclopædia*, i., 30; Nuttall, *l. c.*, t. 117; Engelmann, *l. c.*, 601. Pinus nobilis, Douglas; Parlatlore. Picea nobilis, Loudon, *l. c.*, 2342, fig.; Newberry, *l. c.*, 49, fig. 17. [Veitch, Manual p. 101.] The 'Red Fir of Northern California, forming large forests about the base of Mount Shasta at 6000—8000 feet altitude, and extending through the Cascade Mountains to the Columbia River. The timber is said to be better than that of other Firs. Forms are found with almost enclosed bracts, often accompanying the others, which may connect with the following species" [magnifica].—Engelmann, *Botany of California*, ii. (1880), p. 119.

Sargent, in the *Forest Trees of North America*, says of it:—

"*Abies nobilis, Red Fir*.—Oregon, Cascade Mountains from the Columbia River south to the valley of the Upper Rogue River, and along the summits of the coast range from the Columbia to the Nestucca River (Collier).

"A large tree, 61 to 92 metres in height, with a trunk 2.40 to 3 metres in diameter, forming, with A. amabilis, extensive forests along the slopes of the Cascade range, between 3000 and 4000 feet elevation; less multiplied in the coast ranges, here reaching its greatest individual development.

"Wood light, hard, strong, rather close grained, compact; bands of small summer cells broad, resinous, dark coloured, conspicuous; medullary rays thin, hardly distinguishable; colour light brown, streaked with red, the sap-wood a little darker; specific gravity, 0.4561; ash, 0.34."

It is, however, its relations to Abies magnifica to which we propose specially to allude. There are in nurseries plants known as Abies nobilis, A. nobilis robusta, and A. magnifica (so called), the latter name, however, being generally employed as synonymous with nobilis robusta. Whether the true Abies magnifica is in cultivation or not is a matter of doubt, which can be settled only when the trees produce cones. We may at once say that the characters of foliage, buds, the minute structure of the leaves, the general habit and other supposed marks of distinction melt away, and become less and less distinct the greater the number of specimens examined. There is no difficulty in recognising the more northern A. nobilis (true), at least when a cone-bearing specimen is at hand. The illustration at fig. 146, for which we are indebted to Messrs. Veitch, will sufficiently show how distinct and handsome the typical A. nobilis is.

A. magnifica, typical, fig. 148, p. 661, the more southern in its habitat, is equally easily recognised in native specimens provided with cones. We have not, hitherto, seen cones produced in this country, for, as we shall presently show, what is sometimes called magnifica is not the tree rightly so named, but probably a form of nobilis. To make the matter clearer we cite the characters of the true magnifica as given by Engelmann, and insert an illustration of the cone from the previous volume (fig. 148, p. 661):—

"*A. magnifica*, Murray.—Similar to the last (nobilis), even more than 200 feet high, and 8 to 10 feet in diameter, with the same kind of thick red-brown bark, and with similar very rigid foliage, but the leaves never grooved nor notched even on the young trees, on older branches shorter and thicker, so that they are mostly only a fourth wider than thick or even perfectly square, and often only 6 to 9 lines long: cones 6 to 8 inches long, 2½ to 3½ inches thick, purplish-brown; bracts lanceolate, acuminate, shorter than the very wide scales, which are 1½ to 1¾ inch broad, by scarcely 1 inch high; seeds slender, the wing broader, very obliquely obovate-cuneate; cotyledons 8 to 10.—*Proc. Hort. Soc.*, iii., p. 318; *Engelm., l. c.*, p. 601. Abies amabilis of Californian botanists. [Veitch, *Manual*, p. 99.]

"The 'Red Fir' of the higher Sierras is not rare at an altitude of 7000 to 10,000 feet, but forms no forests by itself. Easily distinguished from the last by the enclosed bracts. Forms, however, are said to occur (Mount Silliman, Brewer), with exsert bracts, and it remains to be seen whether the slight differenees in the leaves, scales, and seeds will suffice to keep the species separate." Englemann, *Botany of California*, ii., p. 119.

To this we add an extract from Sargent's *Forest Trees of North America*, p. 214:—

"*Abies magnifica, Red Fir*.—California, Mount Shasta, south along the western slope of the Sierra Nevada to Kern County. A large tree, 61 to 76 metres in height, with a trunk 2.40 to 3 metres in diameter, forming about the base of Mount Shasta extensive forests between 4900 and 8000 feet elevation; farther south less common, and reaching an extreme elevation of 10,000 feet. Wood light, soft, not strong, rather close-grained, compact, satiny, durable in contact with the soil, liable to twist and warp in seasoning; bands of small summer cells broad, resinous, dark coloured, conspicuous; medullary rays numerous, thin; colour light red, the sap-wood somewhat darker; specific gravity, 0.4701; ash, 0.30; largely used for fuel, and occasionally manufactured into coarse lumber."

Turning now to the magnifica of gardens our difficulties begin. In the first place we may cite the following letter from an obliging correspondent in Devonshire:—

"But to return to the P. magnifica, *v.* P. nobilis. I will here repeat the distinctive characteristics (other than shown in the sections of the leaves), which I find in my specimens.

"*P. magnifica* [=*nobilis robusta*].—Twenty-five years planted, coneless, more rigid, less spreading, and branches more formally arranged, lower branches annually dying back up to at least one-third of the height of the tree, though the upper two-thirds appear healthy and vigorous.

"*P. nobilis*.—Cones early and abundant, branches feathering to the ground, and more graceful and sweeping, and of irregular length. Cones for the last few years brown and showing none of the beautiful purple colour they bore formerly—a character always mentioned in botanical descriptions. I cannot understand this change of character in the same specimen."

The habit of the first-mentioned tree as described by our correspondent, the form of the leaf-section and its structure, as observed by us, are quite those of the tree generally grown as magnifica (=nobilis robusta), but at the very base of some of the leaves there is an indication of a groove as in nobilis, while the true magnifica is destitute of any appearance of a groove.

In September last Mr. Heale, the manager of the Cranston Nursery Company, was so obliging as to send the magnificent cones figured at fig. 147, p. 657. These were sent under the name Abies magnifica, with two shoots, one from a sterile branch, the other from the cone-bearing tree. The tree is stated to be about 16 feet in height. Here was a revelation. To what species could these superb cones belong? Certainly not to typical nobilis, equally certainly not to typical magnifica. The leaves of the Cranston magnifica were all more or less four-sided, and while those on the cone-bearing branch were not grooved at all those on the sterile branches were grooved at the base. Thus, so far as leaf-characters go, the specimen combined the characters of both Abies nobilis and of Abies magnifica.

On looking to the olive-brown cones the first thing to attract attention was the projecting bracts of a superb golden-brown colour not bent downwards, as they always are in nobilis, but projecting horizontally. Then again the general shape, thick, ovate-oblong, blunt, broadest near the base, is different from the more slender cylindric-conic cone of nobilis, and but for the projecting bract, much more like that of magnifica (true).

Now after several weeks that the cone has lain on our study-table for us to feast our eyes on its beauty and endeavour to come to some conclusion as to its identity, we see that the bracts on one side of the cone—that on which the cone has rested on the table—have become bent downwards as in nobilis, while on the other side of the cone they still mostly project at right angles, though some show a tendency to reflex; moreover, the bracts are larger, broader, and more deeply notched at the edges than in ordinary nobilis. In spite of their greater breadth, the bracts are farther apart, so that they leave uncovered spiral spaces, while in nobilis the scales are generally, but not always, completely concealed. It must be remembered also that Mr. Syme described and figured scales of what he considered to be magnifica, also from the Cranston Nursery, but in which the bracts were longer than the scale, as in nobilis, but inflexed, not bent down as in nobilis (see fig. 148, details). We conclude, then, from the evidence before us, that the Cranston magnifica is a form of nobilis, that it is probably the same as that grown in most nurseries as magnifica, and in some as nobilis robusta.

The true magnifica is likely enough to exist in English gardens, but, so far, we have no positive evidence that it does. It may be that the magnifica of gardens and of the Cranston Company is a variety of magnifica, or it may be an intermediate link between nobilis and magnifica, in which case, of course, there would be but one species, and which, according to botanical usage, should bear the oldest name, *i.e.*, nobilis; or, again, it may be that there are two species, magnifica and nobilis, and that this is a hybrid between them, but that is a point we cannot determine. In any case, we may fairly congratulate the Cranston Company on being the certain possessors of a form which, if not entitled formally to bear the name magnifica, at least deserves to. We are, however, of opinion, that it is a form of nobilis, and probably the form called nobilis robusta in gardens, as also by Carrière, whose description we append:—

"*Abies nobilis robusta*, Veitch; Abies amabilis, Hor. non Forbes; Picea amabilis magnifica, Hort.; Picea amabilis, Hort. Angl.; Picea magnifica, Hort.; Piceat amabilis robusta, Hort. aliq.; Abies magnifica, Hort. aliq.—This form, which is found at present in commerce under the name of Abies amabilis, has the following characteristics:—Branches verticillate, crowded, very spreading. Branches and branchlets distichous (in two rows), leaves very numerous and turning upwards, nearly completely hiding the upper surface of the branch, narrow, sometimes subtetragonal or rhomboid, usually falcate, slightly twisted, and raised at the tips. When the trees grow older the leaves become wider and more regularly arranged, and the trees then much resemble A. nobilis. These plants seem to be very variable, so that from the same seeds several very distinct varieties may easily be picked out. These perhaps soon lose their exceptional characters. Nevertheless, A. nobilis robusta is much more easy to raise than A. nobilis, is much preferable to the latter, and is likely to replace it."

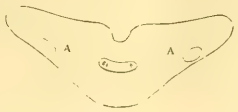
The following points of distinction may be of service:—

*Abies nobilis* (fig. 146).—Buds, as compared with those of nobilis robusta, early to start in spring; leaves ¾—1 inch long, stoutish, curved upwards, usually flat and grooved on their upper surface for nearly their whole length, flat and lozenge-shaped at the apex on the lower side, on older branches more four-sided and grooved at the base only; cones cylindric conic, tapering to the point, bracts projecting, usually deflexed, concealing the scales.—Cascade Mountains, Oregon, Douglas type!; Engelmann and Sergeant!; Gardiner!

Var. *robusta* (fig. 147).—Branches formally verticillate, uniform, young bark purplish-brown. Buds not developed till late in spring, leaves on the leader-shoot spirally appressed, those on the lateral shoots upturned, ascending, straighter than in nobilis proper; leaves on the sterile branches slender, straight or curved, more or less four-sided in section, grooved at the base only on the upper surface; leaves on the fertile branches stouter, shorter, all upturned, four-sided, ribbed on both surfaces, and not at all grooved. Cones ovate, oblong-obtuse. Bracts at first projecting horizontally (afterwards deflexed?).

*A. nobilis robusta*, Carrière et Hort.; *A. magnifica*, Hort. (query, of Murray and Engelmann).

*A. magnifica* (fig. 148).—Leaves slender, curved at the base only, straight elsewhere, four-sided, not grooved at all, on older branches thicker, more curved. Cones thick, oblong-obtuse. Bracts usually, but not always, concealed.—California, Sierra Nevada, Lobb. 441, type!; Jeffrey, Oregon, 1480!; Roezl! *M. T. M.*




SECTION OF LEAF, MAGNIFIED, SHOWING GROVE ON UPPER SURFACE: A A, RESIN CANALS.



SEED, SCALES, AND BRACTS.



FIG. 146.—ABIES NOBILIS. (SEE P. 652.)

## WOBURN ABBEY.

(*Concluded from p.* 616.)

I DO not know any gardens and pleasure grounds more easily reached from the house and more retired and delightful than those which I have thus endeavoured partially to describe. I reached this earthly paradise on a lovely day in June, and felt myself, within them, nearer Heaven than I had ever been before, and very grateful to the Dukes of Bedford, past and present, and especially to John the Second. A history of Bedfordshire has not yet been published, so I have no reading made easy at hand to assist me in this sketch; and if I dip into this great tome and that, other places which await reporting may wither and turn brown in the waning summer before I can reach them. John the First having been the sheep-shearer, John the Second, as I have called

him, was the author and plant collector, who died in 1839. Having weak health he kept much at home, but occupied himself worthily, as his own works and those of Forbes and Sinclair suggest.

I have omitted to mention an Oak tree of great beauty standing at a corner where you can enter the grounds from the park—a stately sentinel, drooping its branches to the ground. The trunk is 21 feet in girth at 4 feet high, and lofty, as are all the trees of Woburn, owing to the depth of the soil, which is a good clay on sand. The branches are slender, so that all the timber is in the trunk, and the leaves are long-stalked, the species being Quercus sessiliflora, the best of the English Oaks, as are all those on the estate. Near this tree is a variegated Oak, which no tree lover would pass without notice; and on walking on along the outer pathway furthest from the house, which was as yet buried among the trees, we reached a small ornamental temple, from which extends a wide avenue of Deodar Cedars, with a row of plants of the Pampas-grass in front of each row of Cedars. At the end of this avenue is seen the cupola of the riding-school. Few plants for shrubberies are more graceful than the Laburnum, which abounds here. I observed one particularly beautiful clump of shrubs and trees, including Laburnums, the flowering Ash, Lilacs, a cut-leaved Weeping Birch, Weigela rosea, some evergreens, and a great Oak, with Ivy trailing about the butt. As an object of curiosity, a Paper Birch, yielding many layers of thin bark, attracts notice; and for its large measurement of timber a Cedar of Lebanon, opposite the south front of the house, with a trunk 14 feet 9 inches in girth at 5 feet from the ground, and towering upwards to the crown with very little diminution of size to a height of 60 feet. The head of branches soars another 60 feet, and for years a pair of ravens had their nest at the top, and a man somehow reached it sometimes by ladder and rope, though an iceberg would be climbed as easily as that great smooth trunk up to the crown. The tree stands in the park near the highest of the string of ponds. A Cedar of Lebanon graces the lawn, too, with a surprising quantity of timber in the vast bole, which measures 14 feet at 5 feet from the ground, and runs up far an almost undimished trunk. A Silver Fir, planted in 1745 to commemorate the battle of Culloden, has a portion of its butt remaining 10 feet in circumference, the tree having formerly been 130 feet high till the wind snapped it.

The lawn, extending from the library, or south front of the house, is separated from the park by a sunk fence and balustrade, and from the house itself by a broad flag pavement, which forms at all seasons a dry and clean promenade. The bedding system, which custom established here for a time, has now been replaced by a less gorgeous and more enduring method of ornamentation, by means of smooth grass, a few raised beds covered with Ivy, and many marble and bronze vases.

Mr. Forbes' account of the kitchen garden includes plates of the various hothouses in the forcing department of what was then a very extensive establishment, the methods of cultivating the various fruits or vegetables, from the Pine, "the king of fruits," to the Melon and the Mushroom. The houses are admirably constructed with iron doors, and lights well glazed with iron frames and copper bars. At the age of more than half a century they look as good as new. There are three Peach-houses in the kitchen garden, with iron framework on the back wall, and in front covered with trained Peach trees, seven vineries, and five plant-houses, with forcing-pits. After November Asparagus never fails to appear at table, nor cut flowers in that unreasonable profusion which modern fashion, for I will not call it taste, requires. During the past seven or eight years the word has gone forth from drawing-rooms and dinner-tables, "We mean to be immoderate in regard to cut flowers;" and, of course, with gardeners, to hear is to obey: so they must needs go on growing and mowing by the acre till a natural taste for living specimens shall have replaced the prevailing rage. Meanwhile Mr. McKay, the head gardener at Woburn Abbey, has been relieved from the excessive forcing of fruits. The growing of Pines has been abandoned, wisely, I think, on the principle of sound trade, since the article in question can be grown more advantageously in Bermuda, at St. Michael's, Antigua, and at the Azores, and *connoisseurs* have failed to distinguish between the best imported Pines and those of home growth.

In the centre of the range of houses a visitor will be interested to enter a dessert-room where the guests at the Abbey, including statesmen of both parties, have come down on summer evenings to enjoy fresh fruit without politics. The room is plainly furnished in the style of fifty years ago, and it looks out upon the central walk of the kitchen garden, and a more perfect kitchen garden could not be imagined. Four acres are enclosed within the walls, and on either side of the walls are rows of pyramids and bushes of various fruits. Outside the walls is the park, where the ground fronting the dessert-room rises rather abruptly, forming a slope in which Oaks, Beeches, and Spanish Chestnuts are beautifully grouped, and as the land is good the trees are large, tall in trunk and great in girth. A Spanish Chestnut in the strip of garden outside the wall measures 18 feet 10 inches in circumference at 5 feet from the ground, and a great Apple tree near it, a Hambledon Deux-ans, is probably the largest in the county. Its girth is 7 feet 4 inches at 5 feet high, and the three leading branches which spring from the crown, spread grandly over a space 48 feet in diameter, the tree forming a great dome like the roof of the Albert Hall, perfectly well proportioned. It yields a crop of 40 bushels in good seasons.

These details show that the kitchen garden is a sheltered nook. It is a place of retirement, made doubly interesting by scientific horticulture and the special industry of those experts and intelligent men whom you may find and converse with, either in the garden or among the Yew-fenced forcing-pits outside. The Duke has his private entrance to the kitchen garden, and here both Mr. Gladstone and Lord Beaconsfield have found the pleasure that warriors must experience at some cool spring when resting from the combat. Mr. Gladstone brought his axe, and I saw a tree, sere and dead, and stretched at length, and evidently a relic. It was a Cedrus Deodara, 26 inches across the severed butt, with grain so tough that the chips the illustrious woodman made were but small: yet he overturned it in twenty-five minutes.

The excellent gardener's house—and the adjective describes both the house and the man—was built by the Duke John who quitted this paradise in 1839. In one of the rooms is Mr. McKay's "Gladstone Corner," where the frame of the statesman's portrait is ornamented by polished Elm chips from Hawarden. Another frame, similarly ornamented, contains the following testimonial:—"In great admiration of the fruit and flowers, especially of some of the finest, if not the very finest, Grapes I ever saw. *W. E. Gladstone, Oct.* 24, 1878."

One could not help lingering in such a corner, where I was allowed to open a small casket of Oak crusted with chips from Mr. Gladstone's outdoor workshop, and within the precious depository I found a copy of the "Homer" which Mr. Gladstone prepared for one of the series of *Literature Primers*, edited by Mr. J. R. Green, with a proof on the title-page of how a statesman may esteem a gardener. It is in the author's own handwriting, and is as follows:—"Mr. A. McKay, with the author's best wishes. Jan. 1883." These are pleasing records; they remind one of a sentiment in the speech of Portia, when she played the lawyer in the "Merchant of Venice." "Mercy," she says, "is twice blessed; it blesses him that gives and him that takes." *H. E.*

# Orchid Notes and Gleanings.

## ORCHIDS IN ENGLAND.

M. GODEFROY-LEBEUF makes some observations in the last number of the *Orchidophile* which are worth attention. He is comparing Orchids in France and in England, and while giving the palm to the latter in the matter of cultivation, he claims for his own countrymen a wider and more catholic choice of subjects. No doubt we here run too much on Cattleyas and Odontoglossums, as if there were no other Orchids worth growing; but there is a fashion in these things, and some day the turn of the Stanhopeas and other now neglected genera will come. Phalænopsids are, says M. Godefroy, better cultivated in France than here.

### ORCHIDS AT LAKE HOUSE, CHELTENHAM.

There is just now a splendid specimen of this Orchid in bloom in the collection of G. Nevile Wyatt, Esq., Lake House, Cheltenham. The plant has ninety blooms expanded, and, having clean foliage and abundance of healthy roots, is really a beautiful sight, worth making a journey to see. There is a grand plant also of the rare Cymbidium affine with six beautiful spikes of sweet-scented blooms; the Bolleas and Pescatoreas are still in rude health, and nearly always in bloom. *J. Cypher.*

### ORCHIDS IN BLOOM.

In Mr. J. Cypher's nursery, Cheltenham, there is a fine plant of Aërides Lawrenceanum with a spike bearing twenty-four fine blooms; Vanda Sanderiana, with a spike of ten flowers; and a fine lot of Cypripedium Spicerianum.

### VITALITY OF ORCHIDS.

"While there is life there is hope" is an adage specially applicable to Orchids, and more particularly imported ones. It is astonishing how shrivelled and apparently dried up plants, such as Odontoglossums and Dendrobiums, recover and push into vigorous growth under favourable treatment. "Certainly," some one says; "but the rub is in those two last words, for we are often at a loss to know what that treatment is which is favourable." A few months ago we had a number of Orchids sent to us from Moulmein, and among them were several stems of Aërides maculosum, which were leafless, dried quite brown, all the roots shrivelled and dead, no sign of life being present anywhere except in the heart of the stem. As an experiment, but with little hope of success, we hung these stems up in a tropical moist stove—a propagating-pit, really—and left them to grow or die, as they chose. To our surprise the stems plumped out, in a few weeks they pushed forth buds, which rapidly developed into quite strong flower racemes, and opened most satisfactorily. After the flowers were over the leaves grew from several points in the stem, and now these stems, which last midsummer were merely dried-up sticks, are healthy well-furnished little specimens, and look as if they had been in good health for years. To those who have not had much experience with imported Orchids this note will have special value. I know that these dried-up plants, when newly imported, often give more satisfaction than well established ones. *W.*

### ORCHIDS ON WALLS.

Those old-fashioned lean-to houses with tall back walls are still in existence in some gardens, though the houses we build now-a-days are simply enormous glass cases—glass at the sides from the ground upwards almost, as well as at the top. But there are a good many Orchids, as well as other plants, which delight to have their roots fixed in the moist cool crevices of old stone walls, in preference to being attached to bits of wood, or fixed in baskets, and hung up in such a manner as to have light and heat about their roots exactly as about their tops. It must be evident to any one who is acquainted with the conditions under which many epiphytal Orchids grow when wild, that the latter treatment is a poor imitation of the natural condition as regards a base for the roots; whilst, on the other hand, an old wall—or a new one, for that matter—would afford a good substitute for the moist cool trunk of a tree. I saw, a few days ago, a beautiful specimen of the rare Vanda Cathcartii growing upon such a wall. The plant was about 8 feet high, freely branched, and showed signs of being very soon rich in flowers, the racemes pushing out from the stems in the most gratifying way. There are many Orchids to which such a position as this would be particularly well adapted—Renanthera coccinea, Vanda cœrulea, V. Denisoniana, some of the Phalænopsids and Aërides, being a few of them. *W.*

### SACCOLABIUM BLUMEI.

This Orchid appears to be very abundant in its native haunts, judging by the large quantities of it imported annually, and sold at a very moderate rate in the auction rooms. And perhaps it is fortunate that this species is plentiful, as otherwise we should most probably find it rare in English collections. Of all East Indian Orchids it is perhaps the worst to prevent from suffering from that terrible outward and visible sign of an internal sickness or weakness—I mean, of course, spot; and when once the plants show signs of this it is almost impossible to keep them from gradually weakening and dying, or becoming unfit to look at. Such, at any rate, is my experience with this Orchid, and so far as I can learn

it is the same with others who admire this beautiful plant; for it is beautiful, its long fox-brush-like pendent spikes of sweetly-scented rose and white flowers being equal in grace and beauty to any other Saccolabium. A high temperature is sure to bring on spot in a few months; and, on the other hand, a low or intermediate and rather airy house prevents spot for a year or two. But the end comes much too soon, even when the plants are kept moderately cool. It is, of course, possible that my experience, and also that of my friends, is exceptional with regard to this Saccolabium, and there may be those who succeed in keeping it healthy year after year without any trouble. If this be so I need hardly say that I and my fellows in failure shall be glad to know in what that success consists. *W.*

Dendrobium formosum giganteum.

I have here in flower a Dendrobium formosum giganteum in a 32-pot. It has two pseudobulbs, carrying respectively five and six flowers, which have been in bloom for upwards of a month, the bulbs themselves being about 10 inches long. I understand this variety is seldom found flowering satisfactorily. *J. A.*

# FORESTRY.

## HEDGING AND THE FORMATION OF NEW HEDGES

Should now be well in hand, and brought to a close as early in the present month as circumstances permit. The ground intended for the reception of Quicks should be well prepared by deep digging or trenching, previous to which it is at all times advisable to add a good coating of thoroughly decayed farmyard manure. From 3 to 4 feet in width, and about 2 feet in depth, will be sufficient dimensions to trench or dig in preparing the ground. When trenching, form the soil into a small ridge rising above the level of the surrounding ground, as it is found that Quicks succeed better on slightly elevated than in hollow situations. In planting the Thorns stretch a garden line along the prepared surface, and take out a notch of sufficient size to contain the roots of the plants without doubling up or cramping them. The plants should then be inserted in the trench made for their reception at 6 inches apart, the roots being spread out to their full extent and covered with soil. Should a double row of Quick be desired shift the line and proceed as before, keeping the plants at the same distance apart and the rows at from 6 to 9 inches from each other as may from the plants' size be found practicable. Little attention save a bi-annual cleaning and hoeing will be required for the first three or four years, after which a slight pruning of the long and straggling shoots will induce even growth. When the fence has attained the full size intended, annual trimming with the shears or switching knife should be attended to, as well as an occasional cleaning of the adjoining soil, thus inducing healthy free growth, and preserving the shape and appearance of the fence.

Roads, &c.

Where roads and drives require repairing no time should be lost in having such completed; walks gravelled and rolled, and all intruding tree branches cut back and removed. Stones should, if possible, be put on during the present month, as they are more likely to bind and consolidate than if put on later in the season. A slight coating of gravel, or screenings, and heavy rolling after rain will materially assist the stones in setting, and so form a permanent and smooth road in the shortest time. In repairing roads, or forming new ones, too little attention is usually given to their drainage, but when it is remembered that on this, to a great extent at least, depends their usefulness and durability, it will be seen that thorough drainage is a necessity to a well-made road. Loose, rolling stones are neither safe not pleasant on roadways, so have all such either broken and well levelled down, or collected and removed.

The Nursery.

In the nursery continue to trench and lay all vacant ground in ridges, exposing as much of the surface of the soil as can be well done. Those who have home nurseries should never lift more plants in one day than can be planted in one or two days—quick removals ensuring greater success in planting than where the trees are allowed to remain "sheughed" for some time previous to their final despatch. Tree seeds may still be collected during dry weather, those of the coniferous section being invariably late in ripening this season. This is a good time to secure a collection of leaves for rotting; to improve lawns by a heavy top-dressing of compost, to dig shrubberies, and to trim and clear neglected fences. Open drains and culverts will require constant attention during the winter months, as they will, in many cases, be apt to get choked with accumulations of leaves, branches, and other *débris*. *A. D. Webster, Penrhyn Castle, North Wales.*

# Plants and their Culture.

## STOVES.

These structures will no doubt be arranged prior to this for the first part of the winter season. If not seen to do not let any further delay occur in the removal to safe quarters of all plants that are susceptible to injury from a sudden fall of the temperature. Many stove plants are often fatally injured or partially crippled by allowing them to remain in too low a temperature for a few weeks. The Clerodendrons are most susceptible to injury from this cause, as are also the Caladiums. The complaint often made in the spring-time, that the stock of Caladiums is affected with the dry rot, causing a serious lessening of the store, can usually be traced to the above cause. Gloxinias also suffer, but not so quickly as Caladiums; Allamandas and Bougainvilleas must not be trifled with either. A heated pit is a capital place for all of these, and kindred subjects that for the time being are not of any ornament. A pit in which the minimum temperature is not above 60° will suit such stock as this. As to their other treatment it is necessary to observe that a too severe withholding of water from the roots will have an injurious effect on the vitality of the plants. Allamandas and other plants that make much sappy growth, should have the shoots severely reduced prior to being stored for the winter. In order to facilitate matters in the way of getting more room, any specimen plants may be taken from off their trellises when such means of training have been employed; this will considerably increase the room, and give an opportunity to have the wirework or stakes cleaned and painted.

Climbing Plants

in the stove that are turned out of pots or trained up the rafters should, in the case of summer flowering kinds, be considerably thinned out (this advice will embrace the major portion of the stock), by which means more light will reach the plants beneath them, and to attain this object we have recently been compelled for the sake of the plants to wash from the outside of the glass of our houses all the accumulations of soot and dirt which are always found in the proximity of large towns. In the stove at this season spare time should be utilised in cleansing plants, particularly the fine-foliage section. Where mealy-bug is found, this will be a good time to use every endeavour to get rid of the pest. It is not so much a question of this or that insecticide, but rather the lack of perseverance and determination to exterminate, at all cost for the time being, this enemy of the stove house, that accounts for their presence in some gardens. *James Hudson, Gunnersbury House, Acton, W.*

# The Hardy Fruit Garden.

Recently planted trees in orchards should be carefully watched where hares or rabbits abound, as they are sure to find out any fresh trees that may have been planted to fill up gaps where trees have died, and in a single night may destroy a number of them by eating off the bark all round the stems. The plan I adopt to prevent this is to mix up a large pailful of lime and cow-dung to the thickness of paint, and to apply this mixture to the stems of trees with a whitewash brush. An active man will dress a great number of trees in a day; should heavy rains in time wash it off, it costs very little to have it repeated, and I fancy the trees are all the healthier for the dressing.

Where permanent trees are to be planted it is most important that the ground should be thoroughly free from weeds, as no amount of after-management will make up for this if neglected at planting time, it being impossible to clean the ground thoroughly after the trees are planted. I have seen the evil effects of this neglect many times, and have an orchard of Currants and Gooseberries in view that has been planted five or six years, and the owner thought of clearing the ground after they were planted, but who now finds out the mistake he made, and all the bushes will have to be removed before it is possible to clear the ground. Success cannot be expected until this is done. About 10 acres of ground were recently added to this estate, which it is proposed to plant with fruit trees such as Victoria Plums and Prune Damsons. The first thing we are doing is to thoroughly drain it, and as it is very full of weeds, it will be ploughed up in spring by the steam-plough, and allowed to remain fallow during the summer, taking care to have it thoroughly cleaned during the dry weather, so as to kill all perennial weeds.

Early in the autumn the trees will be planted, and the following spring a crop of Oats sown, to be later in spring sown down with the seeds of permanent grass. In the meantime the trees are purchased and planted out in nursery rows, so that they can be removed with plenty of fibry roots. *J. Smith, Mentmore.*

# The Kitchen Garden.

## MUSHROOM-HOUSE.

Early beds will now be in full bearing, and where houses are heated by hot-water pipes a temperature ranging from 55° to 60° should be maintained. If the maximum temperature here given be much exceeded, early exhaustion of the beds will surely follow. The atmospheric conditions of a house as regards moisture must be regulated according to its position. Many houses heated by hot water, which is brought into constant use at this time of year, are kept much too dry in this respect. It is better to keep the atmosphere well charged with moisture than to apply much water directly to the beds; however, when watering the latter, sufficient should only be used to permeate the soil casing the beds. Heavy waterings are injurious. In houses where beds are formed to prevent the surface drying quickly, a slight covering should be given to them in the shape of broken straw, such as market growers cover their outside beds with.

Outside Beds.

The greatest difficulty experienced by many in the management of these is to keep slugs and woodlice from destroying the young Mushrooms immediately they peep through the soil. To obviate this great care must be bestowed on the selection of the soil to be used for casing the beds. Good loam, and not ordinary garden soil, should be used, which ought to have been in stack for some months prior to use. Several weeks before the soil is required for casing, it should be chopped up, and receive a dressing of common agricultural salt, after which the heap should be turned over several times, and protected from heavy rains. This will stop the ravages of slugs to a great extent, and also act as a stimulant to the Mushrooms. Woodlice breed with great rapidity in stable litter, but not so much so when the long straw used for covering the beds is subjected to a heating process before being used, similar to that which is selected to form the beds with. When shaking out the droppings and short broken straw to be prepared for making up beds, the long stuff should be thrown up into a compact heap by itself, and if it is too dry to commence fermenting, a little water should be applied, but only just enough to start it. By the time the short material and droppings which were extracted from it become purified, made into a bed, spawned and cased, this long straw will supply the best possible covering material. After a bed is spawned and cased, care must be exercised in accordance with the weather, in placing on the requisite amount of straw covering, in order that the internal heat of the bed may not be raised or allowed to fall too rapidly, thereby injuring the running spawn. As the heat must be tested frequently by feeling the test-sticks inserted in the bed, it will be easy to determine when a little more outside covering is necessary. From 14 to 16 inches of outside covering will be required after the beds have been cased two or three weeks, and still more must be added should the weather be severe. A row of old mats or thatched hurdles, placed so as to throw off rain or snow, would be of great advantage. *G. H. Richards, Somerley.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Nov. 23 | Sale of Bulbs and Plants, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| TUESDAY, | Nov 24 | Liverpool Chrysanthemum Show.<br>Sale of 2000 Lilium auratum, Seeds, &c., at Stevens' Rooms.<br>Sale of Roses, Fruit Trees, Conifers, &c., at the City Auction Rooms, by Protheroe & Morris |
| WEDNESDAY, | Nov 25 | York Ancient Society of Florists' Show.<br>Sale of Bulbs and Plants, at Stevens' Rooms<br>Sale of Plants, Roses, and Lilies, at Protheroe & Morris' Rooms |
| THURSDAY, | Nov. 26 | Sale of Imported Orchids from Mr. F. Sander, at Stevens' Rooms.<br>Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Nov. 27 | Sale of Flowering, Imported, and Established Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Nov. 28 | Royal Botanic Society of London, General Meeting.<br>Sale of Bulbs and Plants, at Stevens' Rooms<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

IN one sense it is matter for hearty congratulation that the EXPERIMENTS carried out at CHISWICK for the purpose of testing the value of the JENSEN system of MOULDING as a preventative of the POTATO DISEASE, have again failed in their main objects. The experiments were carefully performed, under the supervision of a committee nominated by the Royal Horticultural Society, and in the same manner as last year. The tubers were duly overhauled before planting, their growth was watched, and the results noted from time to time. When the crop was lifted, it was keenly scrutinised and all doubtful specimens referred to Mr. GEORGE MURRAY. That gentleman reports that only one of the tubers forwarded to him developed the Potato fungus when submitted to the appropriate experimental cultivation in the laboratory. So far, then, it would seem that there was in all probability a very much smaller proportion of diseased tubers in the crop than in the sets when planted. In any case the amount of disease observed during growth, and at the final scrutiny, was, again, so small as to afford no evidence at all as to the value of the Jensenian system. However satisfactory this may be on general grounds, it is disappointing as an experiment, and it tends to discourage those gentlemen who, with much personal disinterestedness have, during two seasons, given their time and their labour to the planning and the supervision of the experiments and, lastly, to the task of summarising the results. We shall not anticipate the formal statement of results which will in due course be laid before the Scientific Committee. We violate no confidence, however, in thus stating that, for the second time, the experiments were null and void as regards their main object.

It must not, however, be supposed that there is no instruction to be got out of them. It would be impossible for any experiment, so carefully conducted and keenly scrutinised, to be absolutely without value, directly or indirectly. One point in particular has struck those who conducted the experiment—and, if it is of a speculative character, the speculation is fraught with practical possibilities—and that is the effect produced by cultural methods on plants, as compared with Nature's way of doing things, when left to herself. It may be stated that the essence of the experiment consisted in earthing-up the plants for definite periods, longer or shorter as the case might be, and in the comparison of the results, in the plants so treated, with others in which no earthing-up at all was practised, but in which the plants grew, if not exactly at their own sweet will, at least without interference on the part of the cultivator.

Now, we are not going to forestall the official report by going into statistics, but we may allude to one or two matters which are prominently brought into view, and which are of much interest for the thoughtful cultivator. In general terms, when the Potatos were moulded up, even for a short time, the resulting crop was, from a practical point of view, more even and uniform, that is to say, better than when the plants were left to themselves, and generally the more uniform the longer the period of moulding. This is, of course, in accordance with general experience. If it were not so, why take the trouble? That matter has been settled by the experience of generations. But we doubt if the average cultivator has given much attention to the results of the let-alone policy as carried out in the "control rows," and yet it is a subject eminently worthy of his attention. It brings into prominent relief the difference between growth for artificial needs and requirements under correspondingly artificial treatment, and growth under more natural conditions. If we might, for the moment, assume voluntary effort on the part of the noble tuber, we might say that its object in life is not to provide food for mankind, but to secure its own advantage, and ensure the continuity and perpetuation of the race after the individual had perished. But in Nature, as under artificial conditions, no one, no tuber we mean, lives for itself, or can live for itself independently of other considerations. It is acted on by external agencies—heat, light, moisture, and the like—and moreover, whether it will or no, it is forced by circumstances to live not only for itself but for others. The primary object of the tubers we may safely assume to be the perpetuation of the race, but there are such things as wireworms, slugs, predatory animals of all kinds, which, under artificial conditions, much more under natural surroundings, have to be provided for. In the great scheme of Providence these creatures have to be provided for as well as the wingless, two-legged race, who are too apt to presume upon their superior advantages, and to imagine that the world was created and is in process of modification solely for their benefit only. In point of fact one of the most remarkable things about the plants in the control rows was their extraordinary variability—big tubers, little tubers, some even tubers, others misshapen, tubers on the surface, tubers beneath it, tubers green as the haulms, tubers of the earth, earthy as to their exterior, but within filled with richness—that is to say, starch. Now, what does all this mean? Why all this variation? The conditions of growth were, as we have shown, as equal as they could be made, and yet the results were most diverse. All confusion and muddle some may think. That is not our view. To our thinking the plant has all sorts of conditions and requirements to fulfil, some for its own benefit, some for the advantage of others. Some of these variations are useful for one purpose, some for another. Given the principle of variability which, as we know, all plants possess, then come in those other principles of adaptation and selection of which we hear so much now-a-days. Certain variations enable the plant to live under certain conditions, others fit it for life under different circumstances. Those different circumstances may, or may not, make their appearance; if they do, plant and circumstances are at one—the right tuber, so to speak, is in the right place. If they do not the variation is not perpetuated, but dies out; and if no good results occur, at least no harm accrues. At any rate an opportunity is offered for man with his requirements, and especially with his intelligence, to observe these variations and to turn them to account. He can select and intensify those that he wants, he can neglect and pass over those he does not require. At any rate, with that mixed lot before him, he must surely miss his opportunity if he fail to see that not one, but many chances are offered to him if he will but avail himself of them. As things go he is too much engrossed with one particular object, and he overlooks and neglects other opportunities. For instance, a good deal has been said about the possibility of raising disease-proof Potatos. Some ridicule the idea, but these are the people who stand still and do not try. It may not be possible in the way or ways suggested, but it may be in others. Is there no lesson to be learnt from that motley heap of even and of misshapen tubers from the control rows? Surely there is. Some of those tubers manifestly are in the right condition to be an easy prey to internal disease, some to predatory animals, others would obviously offer a stout resistance to disease, and would, as it would seem, be decidedly unpalatable to marauders, however hungry. It is a matter, therefore, for serious consideration, whether what we may call natural variation may not furnish us with as strong and varied an armoury against disease as hybridisation, cross-breeding, or the introduction of new varieties from beyond the seas. At any rate, variation and adaptation, as here faintly suggested, are at least as promising as the other agencies, and more easily and quickly put to the test.

—— INTERNATIONAL EXHIBITION IN DRESDEN.—There will be held in this town, in May, 1887, a flower show and exhibition of an international character. The committee elected by the united horticultural societies has obtained the King's permission to hold the exhibition in the royal park and gardens, and plans for grounds and building are already completed. M. J. F. SEIDEL, of Dresden, is appointed president of the committee.

—— NEW BOOK BY THE EDITOR OF THE "GARDENERS' MAGAZINE." — Mr. SHIRLEY HIBBERD is preparing for publication a volume of prose and verse for young people. It will contain a few of the drolleries that have appeared in Christmas numbers of the *Gardeners' Magazine*, with other papers written for the purpose. It will be entitled *The Golden Gate with Silver Steps*.

—— OUR ALMANAC FOR 1886.—Secretaries of provincial and metropolitan horticultural societies are invited to send us, as soon as possible, the dates of their meetings and exhibitions during the ensuing year, so as to ensure their insertion.

—— THE LATE M. BOISSIER. — The following extract is taken from an obituary notice written by M. DE CANDOLLE:—

"Once he discovered, on the mountain of Tuchet, which belonged to his father, a stony and shady nook, which he made into a kind of botanic garden, where he planted the rarest of the local species. Singular and first trial of alpine plant culture, which he followed afterwards with such zeal at Valleyres for so many years! The traveller of the future, who afterwards traversed the East, Algeria, and Spain, showed his bent more plainly later on, when M. VALETTE [his tutor] had left. EDMOND obtained leave from his father to visit the Great Saint Bernard, which he had heard spoken of as a spot highly regarded by botanists. He left, accompanied by a trustworthy gardener, and furnished with the little sum necessary for a day or two's excursion. Arrived at the Saint Bernard, so near Italy, he was seized with a desire to go as far as Turin. There the two travellers went on foot, economising their means. They visited the town, then crossed Mont Cenis, still on foot. In Savoy hunger obliged them to enter a cabaret. There they were offered fried Potatos. 'We are too poor,' they said; 'give us some bread.' In this way they arrived at Geneva with a franc only at the bottom of the purse."

—— GALANTHUS NIVALIS CORCYRENSIS. — Mr. EWBANK kindly forwards us a specimen of this early-flowering variety of the Snowdrop. The small flower offers no special peculiarity beyond its season of flowering. It is noteworthy, however, that the pollen is shed very freely while the stigma is still immature. How far this "protandrous" condition is characteristic is more than we can say, but it suggests an interesting subject for inquiry.

—— GHENT HORTICULTURAL SOCIETY.—We learn that the Government of Belgium, in order to show its appreciation of the services rendered to horticulture by three of the members of the Society, has made MM. AD. D'HAENE, L. SPAE-VANDER MEULEN, and A. PEETERS, Chevaliers de l'Ordre de Léopold. A complimentary banquet in honour o

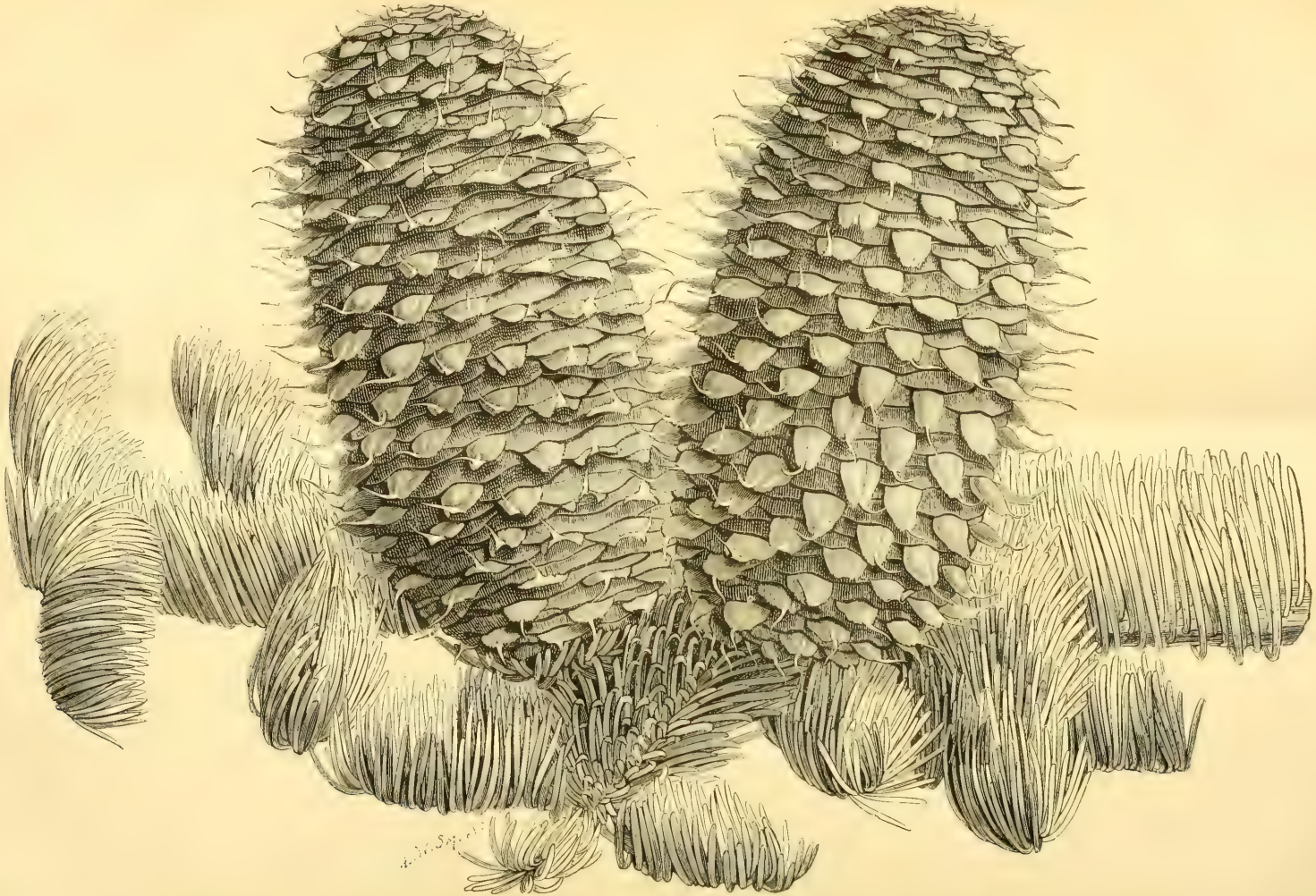




FIG. 147.—ABIES NOBILIS, VAR. ROBUSTA = MAGNIFICA, HORT. (SEE P. 652.)

the event will take place on Thursday, November 26, at the Hôtel de la Post, Ghent.

—— "TRESPASSERS BEWARE." — "Botanists," says the *Pharmaceutical Journal*, "who are in the habit of taking their holiday among the Scotch mountains, will be glad to learn that the Scottish Right of Way Society has already begun its work in the Braemar district, and that a guide-post has been erected at the foot of Glen Dole, Clova, indicating that the path marked by the proprietor as a private entrance is a 'public path to Braemar,' and that it is now only necessary to assert the right in order to gain access to this beautiful and botanically interesting spot." We are delighted to hear of this attempt to break down illegal barriers. Legal ones are bad enough to the wandering botanist, but dogs, illegal ones, are intolerable. We hear that the botanical excursions planned by the members of the Botanical Section of the British Association at Aberdeen had to be abandoned because certain churlish proprietors of deer-forests refused to grant the requisite permission; but that botanists are a law-abiding, charitable set of folk, we might be inclined to say something disrespectful of the proprietors aforesaid.

—— NOVA SCOTIAN APPLES AT THE EDINBURGH APPLE AND PEAR CONGRESS.—Professor G. LAWSON, Halifax, Nova Scotia, has informed the committee of the above Congress that he has been instructed by the Government of Nova Scotia to form a collection of the fruits of the colony, and to forward them by steamer on the 7th inst., so that it may be in good time for the Congress. Several other collections are expected from abroad, and it is likely to be a very comprehensive exhibition of Apples and Pears.

—— CYPRIPEDIUM MORGANIÆ. — The *Revue de l'Horticulture Belge* for October contains a good coloured figure of this beautiful hybrid, raised by a cross from Cypripedium Stonei out of C. superbiens. The dorsal sepal is large, ovate, white, traversed by purple veins, the two very long pendulous curved petals are of a green colour, spotted with purplish-brown, and the large oblong, smooth, basket-shaped lip is of a purplish-brown colour.

—— FASHION IN FLOWERS.—It is useless to protest against the fashion that proclaims Orchids to be almost the only flowers worth consideration, and of Orchids that only a few genera are entitled to recognition. The magnificent new Bomareas which we figured in these columns a few years back have, we are sorry to learn, not found admirers. This can only be because the flowers have not been seen, for otherwise it is impossible to imagine any lack of admiration, so gorgeous are they, while their culture offers no difficulties and demands less care and expense than most Orchids.

—— TROWBRIDGE HORTICULTURAL SOCIETY.—At a meeting of the committee of this Society, held a few days ago, a report was presented, showing that it is in a very flourishing condition, having a balance of £208 in hand. Like many other societies, it has had to pass through times of depression, invariably caused by losses through bad weather on the show day; but the tide has turned in a highly satisfactory direction. At this meeting it was resolved that the gratuitous services of Mr. JAMES HUNTLEY as Honorary Secretary during the past twenty-two years should be recognised in some fitting manner, and a committee was appointed to carry out this purpose.

—— GISHURSTINE.—We have received some boxes of this excellent preparation from Price's Candle Company. It is used for the boots, making them proof against wet, besides rendering the leather soft, and so is very serviceable to gardeners and others who have outdoor work to do during the winter.

—— GRAFTING OF SEEDLINGS.—Messrs. SOUPERT & NOTTING, according to the *Revue Horticole*, practise grafting seedlings on the Brier stock. As soon as the first rough leaf appears the seedling plant is grafted by notch-grafting on to the Brier, the grafts being kept under a bell-glass in a propagating frame at a temperature of 30° C. They are kept under the bell-glass for twelve days. In this manner the Rose, Princess Wilhelmine des Pays Bas, originated in March, 1884, by the fertilisation of Mignonnette by the pollen of Madame Damaizin (Tea). The seeds produced by this cross were sown on November 3. The seedlings were grafted in December, and flowers were produced in February, 1885, one year after fertilisation.

—— PORTSMOUTH CHRYSANTHEMUM SHOW, NOV. 12 AND 13.—The *Portsmouth Times* says that over 5000 persons visited the Chrysanthemum show in the new drill shed of the 3d Volunteer Battalion Hampshire Regiment after 5 o'clock on the 13th. The total receipts were as follows:—First day, £50; second day at 6*d.*, £7 7*s.* 9*d.*; at 3*d.*, £23 17*s.* 10*d.*; at 1*d.*, £22 10*s.*; total, £103 15*s.* 7*d.* Among the special exhibits were some cut blooms of Japanese Chrysanthemums sent by Mr. LANCASTER, J.P., one of which was 36 inches in circumference.

—— "BOTANICAL MAGAZINE." — The plants illustrated in the November number are the following:—

*Nymphæa stellata var. zanzibarensis*, t. 6843.—This magnificent Water-Lily has large flowers, 6—8 inches in diameter, of a violet-blue colour. The flowers, which are deliciously fragrant, open at noon and close at night, and remain sometimes a fortnight before being submerged for the ripening of the seed. The plant is a native of Zanzibar, and is allied to N. stellata and N. cœrulea.

*Calanthe natalensis*, t. 6844. — A terrestrial Orchid, native of Natal, with tufted, stalked, plicated, broadly-lanceolate leaves, and erect pyramidal many-flowered racemes. The flowers are 1—1½ inch in diameter, pale lilac, deeper at the points, and with lip orange-red. The perianth segments are spreading, ovate-acute, nearly equal; the lip with two small lateral lobes, and one larger, one broad obovate, 2-lobed, with a long curved spur.

*Boronia heterophylla var. brevipes*, t. 6845.—A Swan River species, with the habit of B. megastigma, and flowers of a similar colour.

*Anemone trifolia*, t. 6846.—A European plant with tall slender stems, bearing a tuft of stalked-roundish 3-foliolate leaves, leaflets oblong acuminate serrate. Flowers on long stalks, solitary, resembling those of the British Wood Anemone.

*Polygonum sphærostachyum*, t. 6847.—A Himalayan species with simple erect stems, lanceolate leaves, and short thick cylindrical densely crowded spikes of crimson flowers. It is of a very ornamental character, and is suitable for a rockery.

—— THE SURVEYORS' INSTITUTE. — The next meeting will be held on Monday, November 23, when a paper will be read by Mr. EDWARD SMYTH (Professional Associate), entitled, "The Copyhold Enfranchisement Bill, 1884-5." The chair to be taken at 8 o'clock.

—— PRIMULA SINENSIS.—Messrs. SUTTON have introduced a strain with leaves of a cordate ovate-acute form, with serrated edges, quite unlike any other form of leaf in this species that we are acquainted with.

—— RHUS COTINUS VAR. PENDULA.—M. BURVENICH describes in the *Revue de l'Horticulture Belge* a variety of this curious shrub with pendulous branches, which must be very effective. This is a shrub far too little appreciated, and yet when the feathery inflorescence is expanded it excites the attention of the most unobservant, while the leaves in autumn turn of the most glowing bronze and scarlet.

—— HORTICULTURAL CLUB. — The monthly dinner and *conversazione* took place on Tuesday, November 10, at the Club-room, 1, Henrietta Street, Covent Garden, when there was a large attendance of members, including the Hon. and Rev. J. T. Boscawen, the Rev. H. Gall, Messrs. Wheatstone, Wood, Ingram, Collings, Loder, Balderson, &c. The subject for discussion was Grape-growing, opened by the latter gentleman, who detailed his method of growing ten varieties of Grapes in one house, and showed his success by exhibiting good well finished bunches of Mrs. Pince, Madresfield Court, Muscat of Alexandria, Foster's Seedling, Duchess of Buccleuch, Golden Champion, Black Hamburgh, &c., which were (especially Mrs. Pince) pronounced to be excellent. The Secretary gave some account of the Castle Coch vineyards of the Marquis of Bute, near Cardiff, and by the courtesy of Mr. Pettigrew, his lordship's able gardener, the members were enabled to taste the produce of the vineyard, a bottle of the vintage of 1881 having been sent by him for that purpose; it was pronounced excellent, and bore a likeness to good still champagne. The discussion was continued by Mr. Boscawen and others, and the thanks of the members were given to Mr. Balderson for his interesting paper, and to Mr. Pettigrew for his courtesy.

—— "BOTANIKER KALENDER, 1886." — This, which may be Englished as the *Botanists' Pocket Book*, contains, in addition to the usual almanac and general information, articles on the collection and preparation of plants, lists of botanical authors, technical abbreviations, lists of local floras, of medicinal plants, of the floral regions of the globe, of the various modes of inflorescence, of the German species of Bramble, Rose, Chara and Sphagnum, of the principal reagents and staining substances used in microscopic work. A second part or supplement, issued separately, contains a full list of German botanists, with their addresses; obituary notices, lists of the Professors at the several Universities, and of the subjects of their lectures; a catalogue of scientific societies and their officers, an enumeration of the German agricultural experimental stations, botanic gardens, forest schools, natural history museums, and much other information of a similar character. The book is specially intended for Germans, but English botanists and gardeners will find it convenient for reference, though it should cause them some humiliation to have the evidence of the vast inferiority of their own country in such matters thus brought home to them. The publisher is JULIUS SPRINGER, of Berlin.

—— APPLE AND PEAR CONGRESS, EDINBURGH. —At a meeting of the Apple and Pear Congress Committee held on November 18 it was announced that the entries of fruit amounted to upwards of 11,000 dishes, with still a number of promised contributions to be added. The exhibits are contributed by growers in almost every county in the United Kingdom, as well as from the Continent of Europe and from America. The Royal Horticultural Society contributes, through Mr. BARRON, a large and interesting collection of Apples and Pears from their celebrated collections at Chiswick, and many of the leading trade and private growers throughout England contribute largely to the aggregate display. Almost every private grower of note in Scotland will be represented by a more or less numerous collection—the total dishes entered from Scottish growers alone being upwards of 6000 dishes; so that the exhibits in this section of the Congress will be thoroughly representative and exhaustive of the produce of Scotland. The collections from Ireland, although not quite so numerous as those from the sister countries, will still be a highly interesting display, as they comprise contributions from the north, west, south, and east, and are likely to contain many specimens never before seen on this side of the Irish Channel. The display from the Channel Islands, France, and other parts of Europe, and especially the collection sent by the Government of Nova Scotia, and from the State of Massachusetts, both famous for the Apples they produce, will add greatly to the attractions of the Congress, and draw many visitors from distant parts to view the display. The jurors begin their duties early on Wednesday, the 25th inst., and the exhibition remains open to the public till 10 o'clock on the evening of Saturday, the 28th. The new winter or Chrysanthemum show of the Society is to be held at the same time, the capacious Waverley Market affording excellent room for both. The show also promises to be a success, the entries having considerably exceeded expectations.

—— NEW PUBLICATIONS. — *Atlas Manuel de Botanique.* Two hundred plates. Illustrations of natural orders, with text. J. DEMKER. Paris: BAILLIERE.—*Die Botanische Ergebnisse der Polakschen Expedition nach Persien.* Von Dr. OTTO STAPF. ("Botanical Results of the Polak Expedition to Persia.") Vienna: GEROLDT.—*Untersuchungen uber die Morphologie des Dicotyledonen Endosperm.* ("Structure of the Endosperm.") Von Dr. HEGELMAIER. Halle.—*James Nasmyth; an Autobiography.* Edited by S. SMILES (JOHN MURRAY: London).—*A Short History of the Chrysanthemum.* By C. HERMAN PAYNE (*Journal of Horticulture*, 171, Fleet Street, E.C).—*Convention Phylloxérique Internationale et Mesteres d'Execution en Belgique* (Chambre Syndicale des Horticulteurs).

## TREES, SHRUBS, AND HARDY FLOWERS FOR SMOKY TOWNS.

"What shall I plant in my garden? I have tried all sorts of things and nothing seems to do." Such is the exclamation that is sometimes heard from the lips of householders in the suburbs of manufacturing industry, those in coal and iron districts especially, and to the latter my remarks will apply more particularly. From long experience in the vicinity of a large town, as noted for its smoke as for the excellence of its manufactures, and from a personal knowledge of the Potteries and the "Black Country" (North and South Staffordshire), and experience in the suburbs of London, Liverpool, and Manchester, I believe I shall be able to offer a few suggestions worthy the attention and consideration of those who find themselves in such difficulties as the town gardeners and proprietors, who often make use of the expression at the head of this article.

There are very few gardens indeed where "nothing" will grow, even though the garden boundary-wall on one side is that of some huge ironworks; but these notes are intended to have a wider and more comprehensive scope, and are addressed to the greater public but the notes will apply to the small gardens always found near towns.

Assuming that the dwelling-house is already built, and the general plan of the grounds decided upon, the question arises — What shall we plant? We have not to deal with a salubrious atmosphere in which we may venture to plant almost anything, from the homely Ivy to the most tender Conifers, which only require a little shelter from the south-west gales or the cutting east winds, in order to allow them to "grow like weeds;" but we have to contend with one laden with sulphurous and carbonic vapours, as well as dense volumes of smoke, consequently what is planted will have a hard struggle for existence and undergo a veritable battle of the "survival of the fittest." The conditions for plant life being so deleterious, it is very desirable that the roots of the trees, &c., should be in congenial soil; but here again conditions are, more frequently than not, unfavourable; the surface of the soil for several inches in depth is charged to a greater or less degree with acids that have been precipitated on it for years, and the subsoil may be either clay or rock, as is the case here, but in some places it may be something better than either. In any case the ground should be well prepared by being broken up to a depth of at least 2 feet, 30 inches would be better, and in the case of a clay subsoil it should be well drained. If the trenching is objected to on the score of expense, then holes should be made several feet larger and deeper for the plants than would otherwise be necessary. If possible let the holes be excavated several weeks before they are required, so that the whole body of soil may become aërated; and in the process of excavation let the best soil be placed on one side and the worst on the other side the hole, then when the trees are planted the best soil can be placed about the roots—immediately above and below—and the worst at the top, where the roots will not reach it. Any large stones, brick-bats, or tree-roots and stumps that may be met with in preparing the ground ought to be taken care of, as such-like rubbish will be useful in forming banks and mounds for "blocking out" undesirable views, and for purposes of shelter for dwarf-growing and tenderer plants; the banks and mounds to be furnished with Ivy or other plants to be hereafter mentioned.

Having prepared the ground for the trees to be planted in the direction from which shelter is most required from smoke, as also from prevailing winds, the varieties and species to be selected for planting will depend upon the area to be planted and protected; if less than a quarter of an acre in extent tall forest trees are undesirable, and recourse must be had to trees and shrubs growing from 10 to 20 feet high; if upwards of a quarter of an acre then forest trees may be admissible in numbers according to the area.

In a general way smooth-leaved and fast-growing trees are more capable of withstanding a smoky and poisonous atmosphere than are those that are rough-leaved and slow-growing, and the Canadian Poplar (P. canadensis, or P. lævigata) I find to be one of the best of tall-growing trees for such a purpose, and this I place in the front rank opposite the enemy; two ranks will be better than one. Next in order is the Black Italian Poplar, and to this I would add the Balsam Poplar (P. balsamifera). If the height to which they will grow naturally is an objection, they may be cut down to any height required. The Sycamore (Acer Pseudo-Platanus) will do well behind the Poplars, and whether planted in lines, groups, or as single specimens, it has a noble appearance. The common Lime (Tilia europæa) withstands the smoke fairly well if sheltered by the preceding; but, like the Sycamore, it is apt to lose its leaves rather early, and at the time I write (October 29) the Limes, Elms, and Sycamores, are quite denuded of their foliage. The beautiful and graceful Birch (Betula alba) also thrives here in positions sheltered more from the south-west gales, suffering but little from the smoke. And who would be without "the lady of the forest" in her dress of silvery grey? And then, by way of contrast, what can be richer and deeper in colour than a nice specimen of the Purple Beech (Fagus purpurea, which thrives under similar conditions? And to the foregoing may be added the common Ash (Fraxinus excelsior); the London Plane (Platanus occidentalis, although it does not grow here with the same freedom as in London; the Scotch or Wych Elm (Ulmus montana); and last, but not of least importance for the purpose, the Apple, the Pear, and the Mulberry. Small plantations, or "belts" of the above-mentioned trees, planted in the order named more or less, will give satisfaction, and form efficient shelter for smaller and less sturdy subjects.

As an undergrowth to the forest trees, and to make an efficient screen from the ground upward to a height of 10 to 15 feet, and for the formation of shrubberies, groups, &c., as well as for screens and shelter where tall trees are not admissible, the common Thorn in varieties of white, pink, and crimson—both single and double—will be found invaluable; so will the Holly, Shepherd's variety in particular; it is robust in constitution, free in growth, and bears large smooth leaves, which are easily washed by the rain; but all the Hollies are better for partial shelter from strong gales. The Laburnum grows well, and gives us a wealth of golden blossoms; and the common Lilac, pink and white, are suitable companions for the Laburnum. The flowering Currant gives variety, as also does Broom, and the double Gorse should be planted wherever there is space for it, the more there is the better the effect when in flower—Aucuba japonica, the common Laurel, and common Pontic Rhododendrons, it is scarcely necessary to mention, being essentially town shrubs. To these I would add Berberis Darwinii and B. aquifolium, the common Privet, Veronica Andersoni, V. decussata, and V. Hendersoni; and last, but by no means of least value as a suitable plant for smoky towns, the common Elder and its varieties; it will grow anywhere, and will produce its large umbels of white flowers in great profusion. Large specimens of the common variety when in flower at the beginning of summer, make a feature in many an English landscape, and few shrubs are more effective at that time; most people are aware of the economic uses of the fruit in autumn and winter. I shall refrain from recommending any of the Coniferæ, because there are very few, if any, that are likely to do well in such places as I have in view.

Amongst suitable climbers and creepers for covering walls and buildings, the most valuable are the varieties of Ivy, and next in point of value is the Virginian Creeper, both the common and Veitch's variety; another is Aristolochia Sipho, a plant rarely seen; Clematis lanuginosa does fairly well, so do Jasminum nudiflorum and J. officinale. Several varieties of the Vine grow well, but, of course, do not bring their fruit to perfection, the foliage alone is of sufficient value; Cotoneaster microphylla and C. Simmonsi are very useful, and Cydonia japonica does well, but requires a little shelter from harsh winds.

In forming the shrubbery borders for the reception of small shrubs, herbaceous plants, &c., let the soil be trenched to a depth of 18 inches at least, break and pulverise it well, adding manure, decayed leaves, or burnt garden rubbish as the work proceeds, to enrich the soil and provide food for that which will be planted. If the soil has not been broken up before, or has become hard and impervious in its nature from being trampled on, it should be forked over carefully as many times as possible at intervals of a week or a fortnight if time will permit. When the soil has become sweet and friable planting may commence, and one of the plants I would recommend to be planted at the back portion of the border is the giant Cow Parsnip (Heracleum giganteum), if the borders are at all extensive. In recommending this plant I know that I am laying myself open to criticism and ridicule, but it is noble in aspect, tropical in appearance, artistic in outline and detail, showy if not gorgeous in inflorescence, eminently suitable for a bad climate, and it grows without any further trouble after being once planted; it is singularly effective as single specimens or in groups, especially with a dark background. In similar positions I would plant Tritoma uvaria, Michaelmas Daisies, Chrysanthemums, Poppies (Papaver orientale), Phlox, double Pyrethrums, and Dahlias. Nearer to the front would come in the common Iris, herbaceous Anemones, Wallflowers, Sweet Williams, Carnations, Forget-me-Nots (Myosotis), Primroses, Polyanthus, alpine Auriculas, Daffodils, Violas and Pansies, Antirrhinums, Delphiniums, &c.; and at the front of the borders we have masses of Iberis, Arabis, Aubrietia, Alyssum, Saxifraga umbrosa (London Pride), Crocus, Scillas, Vinca, Sedums, Sempervivums, Lysimachia nummularia, Thrift (Armeria), &c., besides hardy annuals of various kinds. In shady corners the more vigorous growing British Ferns, such as Lastræas, Athyriums, Scolopendriums, Blechnum spicant, and Polypodiums may find a place. It will thus be seen that there is no lack of material with which to shelter and furnish a town garden satisfactorily, and the amount of success attending the undertaking will depend on the measure of intelligent care and attention bestowed. When such things as have been mentioned become established it will be an easy matter to find nooks and corners wherein plants of a more tender nature may be tried, my object having been to show how easily an apparently barren and desolate waste may be made beautiful by a selection of suitable plants and the proper preparation of the soil, rather than to give a full list of such plants that might possibly be cultivated after the first and greatest difficulties were overcome. *J. Udale, Shirecliffe Hall, Sheffield.*

## HOME CORRESPONDENCE.

**Wintering Echeveria.**—It is evident that most people have their own particular way of preserving this plant through the winter months; various ways have been tried here with more or less success. The plan we tried about twenty years ago succeeds admirably. A border was made outside the stove on the north side, 70 feet long and 2 feet wide, sloping from the wall and slightly higher than the surrounding ground. The first row of plants were laid down, not planted, near the pathway; and the second row was laid on the roots of the first row, and so on until the wall was reached; they were placed close together, and when the bed is finished they form one mass. No watering is required. They will stand 8° or 10° of frost with impunity, as the sun will not reach them. When sharper weather sets in a few Yew branches are laid over them, and in severe frost a few inches of long litter is laid on the branches; the latter allows of a little circulation of air amongst the plants. I have known the plants to be covered up for weeks in hard frosts. When the weather has changed they must be uncovered very gradually, a little each day is the best. Under the above treatment we never lose a single plant out of thousands. I may mention that the stove is built with hollow brickwork, which, of course, gives out more heat than a solid wall; but I believe they would winter against the latter, and should not be afraid to try them. Echeverias are like shrubby Calceolarias, they do not like to be coddled. When preserved as above described they are much stronger, and may be planted out sooner in the spring than when wintered under glass. *John Perkins, Thornham Hall, Suffolk.*

**Paronychia argentea.**—This is one of the Knotworts, or Illecebraceæ, of which Illecebrum verticillatum is indigenous to England, and is a hardy perennial. It is much used in the flower garden of Killerton House by Mr. Garland. The centre beds are enclosed by stonework, and raised 18 to 20 inches above the grass level. The Paronychia is planted next the masonry, and hangs down over it. The drooping habit is graceful, and the hue of inflorescence and foliage silvery, somewhat akin, for example, to the colouring of that popular bedding plant, Leucophyton Brownii. These two properties combined render this tufted herb peculiarly adapted for the place it fills, as also for hanging down from

vases, or indeed from anything. The plant is common in the South of Europe and Algiers. Independent of its beauty and utility, the plant would be cherished at Killerton from the fact of the original stock having been brought home by Sir Robert Inglis from Nazareth, where it is one of the commonest weeds. *C. A. M. C.*

Begonia Reading Snowflake.—The value of this hybrid as a perpetual flowering form is scarcely so much appreciated as it deserves to be. It flowers all the year round, and as freely at midwinter as in summer; the flowers are pure white, and double the size of B. semperflorens, one of its parents. The habit is excellent. It makes a good pot plant, and is of great value for decorative purposes. *R. D.*

The Leeds Daffodils.—The following is an extract from a letter I have just received from a well-known gardener, who has not given me leave to mention his name:—"I was well acquainted with Mr. Leeds and his collection; he always said he had his original collection from Dean Herbert, but I think that referred to species; he continued to hybridise and raise seedlings so long as I knew him, and that was until he parted with them to Messrs. Barr & Sugden and the Rev. Mr. Nelson, of Aldborough." *C. Wolley Dod, Edge Hall, Nov.* 12.

Late Flowering Clematis.—Plants that flower late in autumn are not over-plentiful, and on that account, a part from their individual good properties, are always acceptable. Not the least of the merits of some of the newer varieties of Clematis is that they bloom so late in the autumn. A good many of the hybrids of the lanuginosa, and also the viticella and the Jackmanni types, have shown a disposition to keep on blooming through September and until well on into October, but the late flowers are often so few, and have such an appearance about them, as to remind one of the "last Rose of summer." An unnamed seedling that I noticed in the Sunningdale Nursery was, in October, in a condition such as to deserve the character of being a profuse autumn bloomer, covered with flowers and buds that would keep on opening until cut off by frost. It is a comparatively small five-petalled flower, about the size of C. Jackmanni, but with petals nearly as broad as they are long. The colour is deep lavender-blue. Madame Grange, another late bloomer, was as full of flowers as C. Jackmanni is usually seen in the summer. The colour is light mulberry. Mrs. Cholmondely—a full-sized lavender-coloured sort—was also nicely in bloom. Daniel Deronda is another of the late flowerers; colour purple. C. Jackmanni alba, the original plant of which now covers a pillar 11 feet high, so as to form a dense mass 4 feet through, was covered with a sheet of bloom from the beginning of August, and had still quantities to come on. Some of the shoots had half a dozen pairs of buds yet to open. It is evidently one of the freest and most robust growing varieties that has ever appeared, and an equally free flowerer. The late blooming varieties of Clematis when grown on buildings, as these plants often are, will generally get enough shelter to prevent their flowers being injured by the early frosts. In such positions their late flowering habit is seen to the best advantage. *T. B.*

Orchid Houses.—It is now absolutely essential that the greatest advantage be taken of the light now at command, so that backward growths may obtain all the assistance that can be rendered from this source, and that bulbs almost finished up may become plump and sound with all possible dispatch. There is now a much better appreciation among growers than formerly used to be the case, that to have bulbs plump and thoroughly ripened, to be followed by a certain definite period of rest, is one of the most necessary conditions for the full and perfect development of the flowers, and for a free and satisfactory growth afterwards. Simple truths need repeating even now, for there will ever be new beginners—those who are starting in the culture of Orchids; and since remarks of this nature are intended for such, rather than those who are advanced in the culture and have gained experience, the very rudimentary suggestions and advice will doubtless be acceptable to many. If not done already, let every bit of fixed shading, such as canvas tacked on at odd ends and corners, be at once removed. These out-of-the-way pieces are so often disregarded and permitted to remain on, to the exclusion of light, that not a day should be lost ere they are removed. So, too, where portions of the roof have been smeared over with whitewash, &c.—this must be washed away at once; and if the district is one where, through the smoky condition of the atmosphere, the outside of the houses become quickly covered over with a sooty deposit, let the glass be washed all over, not only washing the glass but the rafters and woodwork, for the better removal of all filth. There is nothing better than a little soft-soap in the water used with the brush, and then plenty of clean water poured on with hose-pipe or water-can will speedily effect a change for the better. In some localities this process will need to be repeated once or twice during the winter, for immediately after a thick heavy fog in the neighbourhood of the large manufacturing towns of the North there will be observed on all objects outside walks, roofs, leaves of shrubs, &c., a filthy and black deposit, injurious to all vegetation, and one that materially lessens the entrance of light into our houses. With roofs clean inside and out the cool Odontoglossums and Masdevallias will now be pushing well away, the former in the majority of cases with growth about half or three parts formed, the leaves of which should stand well up, and, being moderately broad and of medium length, will indicate that the condition in which they are placed is of the best, and one that must be carefully followed and persistently continued. The flower-spikes on the most forward growths will soon be pushing up from the base of the yet immature bulbs, and as the spikes come quickly up the bulbs continue swelling, until having reached their due size the spikes come away more rapidly, and buds will be formed of a stout and plump character, which in due time will develope into flowers of good size and substance. It is mostly to be observed that the finer forms of O. crispum flower in early spring, and up till May and June, whilst the majority of the more stellate varieties flower later or at more irregular periods. *W. Swan.*

Coning of Athrotaxis laxifolia.—I have to-day read in the *Gardeners' Chronicle* your notice of the Athrotaxis laxifolia. I believe you are wrong in saying the cone has not been known before. The tree flourishes in the gardens of Robert Loder, Esq., Whittlebury, Towcester, where I gathered quantities of the cones in the year 1875. *X.* [We should be glad to see cones of this or last year. ED.]

Cyclamens at Hanwell.—A magnificent lot of these popular plants is now to be seen at the nurseries of the St. George's Nursery Company at Hanwell. At this nursery there are twelve long low span-roofed houses that are particularly well adapted for the growth of plants, and Cyclamens at present are to be seen in every one of them. They can be seen in all degrees of development, from seedlings just putting their first leaves through the soil, to plants three, four, five, and six years old, representing the fine specimens Mr. Smith, the manager, is in the habit of staging for exhibition in spring at South Kensington and at the Regent's Park. Seeds are sown about the end of August or early in September. The usual practice has been to sow some thirty seeds or so in shallow pans 9 inches in diameter. These are stood on an ash bed in one of the houses, and in about six weeks the first leaves begin to appear above the soil, but some seeds appear to germinate more quickly than others. It may not be generally known that seeds of Cyclamen persicum will retain their vitality for six or seven years, though a longer time is required for them to germinate, and a certain proportion will fail altogether. The best way to preserve seeds of Cyclamen is to put them in bottles and keep them perfectly airtight. This season Mr. Smith has adopted the practice of sowing the seeds singly in thumb-pots. Several thousands were treated in this way, and the majority of them have put forth two and three seed leaves. This method has been adopted in order to obviate the check which the tiny plants receive when they are pricked off from the seed pans into pots, and from these to thumb-pots. By sowing in tiny pots they can be shifted into 60-sized pots without injuring the ball of roots, and not the slightest check is thereby received. It is true that the sowing of the seeds singly causes a greater expenditure of time, but it is at the season of the year when labour is more available, and the time required to prick off the seedlings in early winter or spring, when work is more pressing, is avoided. There is a very fine lot of specimens of two years old and upwards. They comprise the very cream of the seedlings, and are consequently of the highest quality. In addition there are almost numberless plants of seedlings raised fourteen months ago, many of which are already in flower and others coming on to succeed them. Thrips is one of the most tiresome pests the cultivator has to contend with. One of these will fasten upon a bud just as it is showing colour, and preying upon it disfigure it by piercing the petals, leaving a mark on each. Therefore it is that the plants are well fumigated down to the time that they show for bloom. *R. D.*

Epipactis latifolia and its Varieties.—Botanists have been somewhat puzzled where to draw the line of distinction between the various species and varieties of this highly interesting germs of plants. This is, however, not to be wondered at, more especially in those who have not had the chance of examining the plants growing under various circumstances in their native wilds, as the forms of one species alone, E. latifolia, are certainly many and perplexing. I can also readily understand how any person on being sent either of the extreme types of this plant would unhesitatingly pronounce them as species; but let the same person examine carefully a wood in which the normal form occurs plentifully, and he will find that all gradations of colour occur, from almost a pure white to a deep purplish-pink, and which latter is the plant that has been elevated by not a few of our botanists to a distinct species under the name of E. purpurea or rubiginosa. Did no gradations occur between this purple form and the typical species (putting aside any differences in the structure of the flowers, which certainly does not exist) some leniency might be granted to those who still feel inclined to uphold the erroneous appellation of E. purpurea. On finding the white-flowered form some years ago I own I was somewhat puzzled, although at the time I labelled it E. latifolia alba, but since then I have found it on various occasions, but always in company with the normal form; and after a careful examination of several hundred specimens and taking into account the variability of colour in the flowers of E. latifolia, I cannot think otherwise than that it is but a well-marked form that, save in colour of flowers, differs in no way from the normal species. The purple form is, as regards colour of flowers, as extreme in an opposite direction to the white; and during the past season I could in one wood alone have shown all gradations of colour from almost pure white through the normal green to the deep pinky-purple of the so called E. purpurea. *A. D. Webster.*

Tropæolum tricolorum.—When well grown and nicely in flower this is a beautiful object. Formerly it was to be found in most collections of plants; of late years its culture seems to have fallen off, and it is only rarely it is seen. It is a plant of easy culture when it is understood, but to the uninitiated its culture is not so easy. The tubers when dormant should be kept in boxes of very dry sand and be placed on shelves in a cold house where mice cannot get to them. This is a matter that should be attended to, otherwise they will eat the whole of the tubers. When the tubers break into growth, which will be in general some time in August, they should at once be potted into the pots they are intended to flower in. Pots of 8 or 10 inches in diameter will do for all the larger-sized tubers; smaller tubers should be put into smaller pots. The pots should be well drained and a layer of decayed manure should be placed over the drainage. They will do well in a compost of loam, peat, and sand. The soil should be well pressed into the pots and made level with the rims. The tubers should then be put into the soil in the centre of the pots, planting them only a little below the surface of the soil. The smaller tubers should be planted in small pots and the larger tubers into larger ones. The young shoots are very liable to be broken off when in a young state, especially if they have not been exposed to the light. This should be carefully guarded against by securing them neatly to stakes, so that the shoots do not snap off if the plants should get shaken. They may be trained to any form of trellis, but they look as well on balloon-shaped trellises as on any othes form. The best place to grow them in is a house having a temperature of about 45° by night and 50° by day; this will suit them well during the autumn and winter months, but the temperature should not be allowed to fall lower. They should be

placed on a stage and kept near the light. They should be looked over nearly daily, and the young shoots kept neatly tied in to the trellis. They will not require much watering until they begin to root freely into the soil, when they will require watering more freely. In March and April, when the plants begin to cover the trellis they will require liberal supplies of water. During the autumn and winter months they must be kept growing steadily; the plants will now begin to cover the trellises, and towards the end of April and during May they will begin to flower freely, and for two or three months are beautiful objects, especially during will soon vegetate. When the young plants are a few inches in length they should be carefully potted off, the best of them singly into small pots, and the smaller plants three or four in a pot. The whole, when potted, should be put into a gentle heat. When they get nicely into growth they should be placed near the light, and have plenty of air given to them. Toward the beginning or middle of August the whole of the seedlings will require a shift into larger pots. After they are potted they should be kept near the light, and in a nice gentle heat. Towards the spring the plants will begin to flower, and will continue to do house at, say, 65°; in about a fortnight they will have started into growth. The heads are then taken off with a sharp knife, sufficiently low to allow of stripping a dozen or so leaves from the base of the severed head. These leaves are then laid upon pans of sandy compost, and a good percentage of them will make plants in time to be used the same season, the heads being pressed into pans of similar compost sufficiently low to hold them in position until rooted, which in the temperature mentioned will be in about a month. The old stools are carefully stowed away, and these produce a good supply of offshoots. Although in the winter season this Echeveria cannot bear artificial

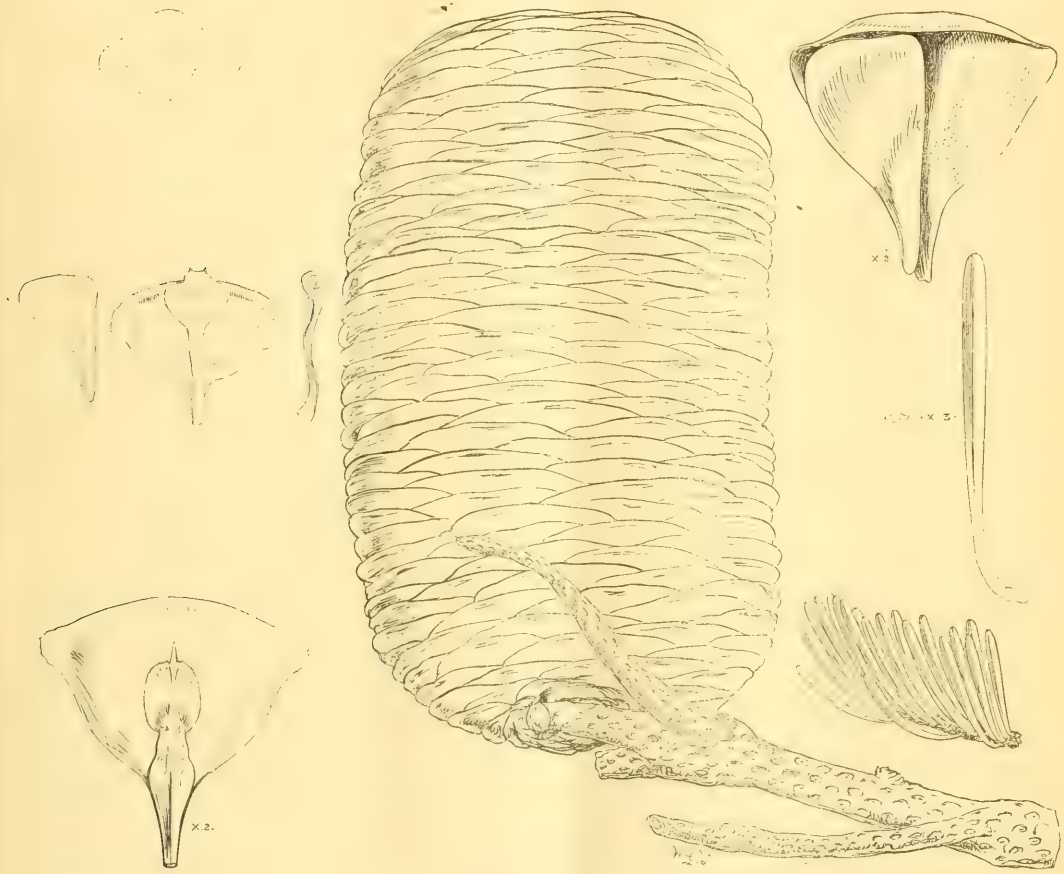



FIG. 148.—ABIES MAGNIFICA: CONE, LEAVES, LEAF SECTION. A A, RESIN CANALS; SCALES AND BRACT FROM THE BACK, FRONT, AND SIDE. BRACTS IN THE TYPE SHORTER THAN THE SCALE, IN SOME VARIETIES LONGER, BUT INCURVED.

May and June. They should be taken to the conservatory or to a cool house, where they will continue to flower for two or three months. About the end of June and during July the flowers will begin to decay, the plant should then be removed to a warm house to perfect and ripen the seed. When the seed is ripe it should be gathered and kept in sand until the end of July or August, and then sown thinly in pots. The old tubers should be taken out of the soil and placed in some boxes of sand, and put where the mice cannot get to them until the season for starting comes round again. The seed will vegetate quicker and better if steeped in cold water ten or twelve hours. When this is done the outside covering is easily removed, and the seeds grow sooner. After the seed is sown it should be put into a nice heat: it so for some time. When the stems have died back the tubers should be taken out of the soil and put into boxes of dry sand, and stored as before stated. By attention to the foregoing details there is no difficulty in growing to perfection this beautiful greenhouse climber. *M. Saul, Holgate, York.*

**Echeveria Peacocki.**—Among modern introductions to our gardens this Echeveria is destined to take a high place. I well remember three years ago seeing it for the first time out-of-doors at Hampton Court. To those who grow it for bedding purposes, but who may not be successful in propagating it in large quantities, the following is the *modus operandi* which we find to be the best. About the middle of February select the largest plants and place them in a warm heat, its greatest enemy is damp. There is a weevil which is very fond of it, but if the soil is carefully prepared this can in great measure be guarded against. This variety does not produce offshoots in the way many of the commoner kinds do, but it is capable of being grown to large size, and is then invaluable either as dot plants in beds or as decorative plants for indoor work. *H. L., Leamington.*

**Scottish Annual Hiring System.**—To day was the Martinmas Term (Nov. 11) in Scotland, the time when it is the practice among young gardeners to change their situations, the majority of them coming to Edinburgh, to try to get a situation through the medium of the nurserymen. This Term fully the average number of men have turned up, and, as a

class, they appear to be a decided improvement on the men of a few years ago—clean, smart, and intelligent-looking young fellows; but the bad times make it very difficult for even the pick of them to find good berths, and many good men must seek other employment for the winter. The system of yearly changing of places, which has so long been in vogue in Scotland, is not one that can be recommended, and it is becoming evident that it is not at all suited to the advanced times in which we live. It is objected to by all parties—employers, gardeners, nurserymen, and the young men themselves; but it is difficult to eradicate the long-established custom. It is a matter that chiefly concerns gardeners; and if they were at all unanimous in putting a stop to the useless practice, there would soon be an end to it. Let us hope the day will soon come, and that the "droves" of young gardeners infesting the streets of Edinburgh at Term-time will ere long be a thing of the past. *N. B.*

Gladioli Ripening-off.—Some of these are very late in flowering this season, and as it is sometimes necessary to clear the beds as early as possible in order to get them dressed during the winter, it is well to lift the bulbs, with some soil adhering to them, cutting away the flower-stems previously, and then plant them out under a south wall, placing some fine potting-bench soil about the roots. If this practice, which is a good deal followed by growers having small gardens, be carried out with care, the ripening process will be hastened without doing any injury to the bulbs. They can then be lifted at the proper time—that is, when ready—and stored away in the usual manner. This early lifting will be required only in the case of late seasons like the present. *R. D.*

Wax Climber.—I have already published the fact that the Microloma lineare is in flower with me at present; and I would like to know through your columns whether any one else has yet flowered it in Britain. *James Wilson, un., Florist, &c., Greenside Gardens, St. Andrews, N.B.*

# Reports of Societies.

## EDINBURGH BOTANICAL: Nov. 12.

The first meeting of the fiftieth session of this Society was held at 5, St. Andrew Square: Professor Dickson, President, in the chair. The office-bearers for the ensuing session were duly elected:—

President: Professor Dickson, M.D., LL.D., F.R.S.E.

Vice-Presidents: W. B. Boyd, of Faldonside; T. A. G. Balfour, M.D., F.R.C.S.E., F.R.S.E.; Alexander Buchan, A.M., F.R.S.E.; Hugh Cleghorn, M.D., F.R.S.E.

Councillors: Rev. John Macmurtrie, M.A.; Robert Lindsay, Patrick Geddes, F.R.S.E.; Symington Grieve, Andrew Taylor, F.C.S.; William Sanderson, Rev. I. M. Robertson, M.A.; William Watson, M.D.; Robert Gray, F.R.S.E.; William Craig, M.D., F.R.C.S.E., F.R.S.E.

Honorary Secretary: Professor Douglas MacLagan, M.D., F.R.S.E.

Honorary Curator: The Professor of Botany.

Foreign Secretary: Andrew P. Aitken, M.A., Sc.D., F.R.S.E.

Treasurer: Patrick Neill Fraser.

Assistant Secretary: John M. MacFarlane, D.Sc., F.R.S.E.

The second part of volume xv. of the *Transactions*, concluding Dr. Spruce's work "On the Hepaticæ of the Amazon and Andes," was laid on the table.

The following communications were read:—

I. "On the Fertilisation of Epipactis latifolia." By A. D. Webster, Llandegai, Penrhyn.

"Having during the past few years, but more particularly the summer of 1885, devoted considerable attention to the above interesting subject, I have thought the following observations not unworthy of record, more particularly as contributing a mite towards a subject which, although it has already received some attention, may still be considered as in its infancy. In the woodlands of this county (Carnarvonshire), where the above plant grows in unusual quantity, exceptional opportunities have been afforded me of studying it under various circumstances as regards soil, altitude, and situation.

"All, or nearly all, my observations certainly tend to point out (1) that Epipactis latifolia is very imperfectly fertilised; (2), that, although visited by insects, cross-fertilisation seldom takes place; and (3), that self-fertilisation by the pollen falling spontaneously on the stigma is not uncommon."

We give only the proof of the first two propositions:—

"1. That the plant is only very imperfectly fertilised is only too evident from the small quantity of seed produced. On examining nearly one hundred of these plants when the seeds were ripe in October, I was perfectly surprised at the small number of capsules produced. (The ovules of unfertilised flowers drop from off the plant at an early date, thus affording an unerring guide as to the difference between barren and well-filled capsules.)

"I examined nineteen plants that were growing in consecutive order in one wood, and out of a possible of 492 capsules only thirty-eight produced seed. Thinking that perhaps the density of foliage or maritime situation of the wood might account for this unusually small production of seed, I examined the plant in quantity in two other warm, shady woodlands, but with almost similar results. Sixteen plants growing within a short distance of each other produced from 516 flowers only thirty-two capsules, while in another wood similarly situated twenty-six were produced out of a total of 215. This small production of seed, more particularly in an unusually fine season like that of 1885, clearly points out that Epipactis latifolia is most imperfectly fertilised and, as will be seen hereafter, that cross-fertilisation by insect agency seldom takes place. The conclusions we naturally arrive at are that this Orchid is more frequently self than cross-fertilised, but, when the small production of seed is taken into account, very imperfectly by either method.

"2. That although visited by insects cross-fertilisation seldom takes place is proved out by the following observations:—Amongst insects of sufficient size to remove the pollinia that I have seen visiting the flowers of this Epipactis, I may particularly mention the red-tailed humble-bee and our common wasp, the latter, however, but very rarely. On the other hand the red-tailed humble-bee visits the flowers of this plant frequently, but owing to its peculiar method of sipping up the nectar without really entering the flower, never removes the pollinia. On August 21, 1885, being in a wood where beds of this plant were in full flower, I saw the above bee enter several flowers on two different plants that were growing side by side without in any case removing the pollinia. On the 24th of the same month and in the same wood I saw a red-tailed humble-bee visit successively no less than sixteen flowers on a spike of this Epipactis without removing any of the pollinia. In this case the spike of flowers was so dense that the bee simply crawled from one to the other in a spiral fashion from bottom to top without once bringing its head or proboscis in contact with the viscid disc at the base of the pollinia. After sucking the nectar from the last flower it flew off for a few yards, but immediately returned and revisited three of the same flowers, but this time in a sort of half-discontented fashion as if striving to improve on work that had been already well done. Again on the 26th of the same month I saw several of the same bees visit the flowers of this plant (one visited most of the flowers on seven plants in succession) without removing the pollen, although, being close to, I noticed them visit numerous flowers that contained the pollen masses. The bees hung on the distal portion of the labellum and inserted their long proboscis without the head coming in contact with the viscid disc. This, the 26th, was a lovely evening, and I spent fully an hour watching the plants, but during all that time, although wasps were flying about in number not one visited a flower. (This certainly was quite the opposite of what I expected, as several naturalists are under the belief that this Epipactis is constantly fertilised by this insect, one, indeed, going so far as to say that if wasps were becoming extinct in any locality, so, in all probability, would Epipactis latifolia.) On other occasions, however, I did see the common wasp visit several flowers, but the visits were short, and, if I may use the expression, heartless, as if it could derive but little therefrom. Owing to their long narrow shape and short proboscis wasps remove the pollen masses with ease, for I have caught them immediately after coming out of the flower with the pollinia attached to their head, but as these visits are so far between fertilisation by this way is certainly of rare occurrence. In numerous instances, also, the pollen masses will be found glued to the upper sepal of the flower, which is done as follows:—The wasp on entering, more particularly a newly-opened flower, gets the pollinia attached to its head when sucking the nectar, but immediately on entering another flower the upper sepal is so situated that the sharp stiff edge comes in contact with the viscid substance, and, together with the pollinia, is left attached to it. This, I may say, I have never seen take place, but repeated experiments bear out the statement. It is also readily illustrated with a pencil. In various other parts of the plant it is not at all uncommon to find the pollen masses attached as if the discs were not sufficiently viscid to retain their hold on the insect's head, and on more than one occasion I have found them left unbroken, or in their entirety, on the stigmatic surface. Small insects also visit the flowers in numbers, as I have watched them creeping about within the labellum and other parts of it; but in numerous instances many of these which come in contact with the viscid stigma are unable to free themselves, and so perish. The largest insect that I have seen killed in this way was $\frac{3}{10}$ of an inch in length. When the plants begin to wither, or immediately after fertilisation takes place, the distal portion of the labellum curves upwards, and effectually closes the entrance to the basal portion or nectary, but for what good end I am totally at a loss to know."

(*To be continued.*)

## SOUTHAMPTON HORTICULTURAL: November 3 and 4.

The autumn exhibition of Chrysanthemums and fruit was held in the Victoria Skating Rink, a place specially adapted to the purpose. The lateness of the season for the queen of autumn flowers, and the early date chosen for the show, are causes which prevented the display being as good as usual, still there was an excellent show. Evidently the Chrysanthemum is gaining popularity in this neighbourhood, judging from the number of new exhibitors who put in their appearance. Plants at this southern town are nearly always well shown, indeed it would be difficult to name a place where they are better. Cut blooms of Chrysanthemums also were staged in considerable number, and of good quality on the average. Apples, Pears, and Grapes are extensively grown, and were also numerously shown, and the latter formed an important item in this exhibition. Everything runs smoothly under the able guidance of the small but very energetic Mr. C. S. Fuidge, the Secretary, backed up as he was by an excellent committee, of whom Captain Gibbs, who has the best interests of horticulture at heart, is chairman.

### Groups.

For the best arranged group of Chrysanthemums, occupying a space of 40 feet, there were but two competitors; but the group from Mr. J. Elland, gr. to J. Bailey, Esq., Elmfield Hill, Southampton, was excellent in plants and arrangement; Mr. N. Blandford, gr. to Mrs. Haslefoot, Moorhill, West End, was 2d.

For six plants, incurved or reflexed, Mr. J. Allen was 1st, with plants fully bloomed, and not too stiffly trained; 2d, Mr. W. Joy, nurseryman, Shirley, with large plants, but not so freely bloomed.

For six Japanese plants, Mr. Joy was 1st, with plants 5 feet in diameter, and carrying 150 blooms on each. The same exhibitor was 1st in the class for nurserymen, with plants somewhat similar in character.

Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett had the best single specimen—a plant of Dr. Sharpe, whose colour was rich in the extreme and bearing 150 fine flowers; 2d, Mr. J. Allen; 3d, Mr. W. Joy.

### Cut Blooms.

For twenty-four incurved varieties, distinct, Messrs W. & G. Drover, were 1st, with flowers rich in substance, colour, and finish; 2d, Mr. C. Denford, gr. to Sir F. Fitzwygram, Bart., M.P., Leigh Park, Havant, whose blooms were larger, but not so well staged as the premier collection; 3d, Mr. J. Allen.

For twenty-four Japanese varieties, distinct, Mr. Penford was 1st, staging grand blooms, large in size and well coloured, the following being a few of the best:—Soleil Levant, Oracle, Balmoreana, and J. Delaux; Mr. W. Neville, gr. to F. W. Flight, Esq., Cornstiles, Twyford, Winchester, was 2d, with a neat good stand well staged, the best being Margaret Marrouch, M. Delaux, and Mdlle. Lacroix. The same exhibitor had the best twenty-four blooms in eighteen varieties. Mr. W. H. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was 2d, this being his first attempt at Chrysanthemum growing, and right well did he stage; 3d, Mr. J. Allen; 4th, Mr. C. Warden, gr. to Sir F. Bathurst, Clarendon Park, Wilts, who in his arrangement departed quite from the orthodox style of setting up blooms. He in this case staged them as grown, with foliage, and resting upon green moss, a margin of Isolepsis graciliis putting a finish to the boxes.

For twelve incurved, Messrs. Drover were 1st; Mr. J. Selden, gr. to Mrs. Brooke Firman, St. Thomas', East Cowes, was 2d, with neat examples; Mr. Wills was 3d.

For twelve Japanese, Mr. Renford had the 1st place, with very fine produce; 2d, Mr. W. Wildsmith, gr. to Lord Eversley, Heckfield Place, Winchfield, who ran the first-named exhibitor very hard for 1st place, so good were his blooms.

Mr. Penford had the best twelve Anemone, and same number of reflexed kinds, being followed by Messrs. Drover and Mr. Wildsmith, all showing well.

For twelve blooms, shown as grown, with foliage, Messrs. Allen, Neville, Warde, and Renford won in the order named.

Pompons were well shown by Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore, and at Bishop's Waltham, and by Mr. Wills.

For twelve blooms, not less than eight varieties, 2d, Mr. J. Reynolds, gr. to the Right Hon. H. Crichton, Netley Castle. The best arranged stand of Chrysanthemums and other flowers was one from Miss Flight, which was an elegant combination of colours.

### Miscellaneous.

Mr. Blandford had the best group of Orchids, amongst them being very fine spikes of Calanthe Veitchii and C. vestita rubra. Mr. Wills had best table plants and small Palms grown in 6-inch pots. Amateurs' groups of Chrysanthemums, a new feature at this show, were of good quality, and should encourage future efforts; this is considered a step in the right direction.

For three bunches, distinct varieties of Grapes, Mr. Ward was 1st, having Mrs. Pince, fine; Muscat of Alexandria, beautifully coloured; and Barbarossa, small in bunch but splendidly coloured, the berries being of large size; Mr. Budd, gr. to F. G. Dalgety, Esq., Lockerly Hall, Romsey, was 2d, his bunches of Muscat of Alexandria and Alicante being perfect; Mr. Hall, gr. to Captain Davison, South Stoneham House, was 3d, showing splendid bunches of Alicante.

For three bunches black, Mr. M. Molyneux was 1st with bunches of black Barbarossa, weighing in the aggregate 16 lb., fine in berry and colour; 2d, Mr. Hall, with Alicante, handsome in shape, and having a dense bloom; 3d, Mr. T. Grant, gr. to Major Murray, Ossemsley Manor, Christchurch, with Black Alicante, extra large berries.

For two bunches of white Mr. W. Saunders, gr. to J. East, Esq., Longstock House, Stockbridge, was 1st with faultless examples of Muscat of Alexandria; Mr. Ward and Mr. Budd were respectively 2d and 3d.

For two bunches of black and same number of white Mr. Penford was 1st. The heaviest bunch was one of

Barbarossa, from Mr. Ward, weighing 10 lb.; Mr. Hall followed with Alicante. Mr. Wildsmith had the best Pine-apple.

Dishes of Apples and Pears were shown, some fine samples coming from Mr. Wildsmith, Mr. J. Busby, Mr. Saunders, E. H. Goodwin, Esq., and other growers in the county.

Nine exhibitors of eight varieties of vegetables competed, making a grand display, the quality in most instances being excellent. 1st, Mr. J. Cox, gr. to R. K. Wyndham, Esq., Corhampton House, Bishop's Waltham, his best dishes being Lyons Leek, Rousham Park Onion, White Gem Celery, and Improved Magnum Bonum Potatos; 2d, Mr. W. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury, whose dishes of Intermediate Carrots, Tomatos, and autumn Cauliflowers were particularly fine; 3d, Mr. Saunders; 4th, Mr. E. Molyneux. Mr. Budd had the best collection of salads.

Messrs. Lucombe, Pince & Co., Exeter, staged 180 dishes of Apples and fifty dishes of Pears of excellent quality, the colouring being particularly rich. These and six fine Pine-apples by Mr. Wildsmith were amongst the items not for competition. *E. M. S.*

## WEST KENT CHRYSANTHEMUM SHOW:

### November 10 and 11.

This Society has been in existence some eight years, and keeps on increasing in the quantity and quality of the plants and flowers competing in the various classes. The exhibition was held in the Public Hall, Bexley Heath.

The Silver Cup offered in the open class for forty-eight blooms, twenty-four incurved and twenty-four Japanese varieties, brought out six competitors, all showing good collections. In a close run Mr. J. Martin, gr. to C. N. Kidd, Esq., Dartford, took 1st, with full-sized even flowers, his Japanese varieties especially were large and in beautiful condition; Mr. Whittle, gr. to C. H. Goschen, Esq., Addington, who was 2d, had a good lot of incurved flowers, but a few of his Japanese kinds were not quite up to the mark; Mr. Sharpe, gr. to — Hutchett, Esq., Lee, took 3d, some of the flowers in this stand not being sufficiently out.

Plants in Pots, Open.

Six bush-shaped, large-flowered Chrysanthemums.—1st, Mr. Mitchell, staging moderately sized specimens, evenly flowered; 2d, Mr. Burgess, who had taller plants less closely trained.

Six standards.—These were very well done; in a close run Mr. Burgess scored 1st, Mr. Mitchell 2d.

Single specimen trained Chrysanthemum.—1st, Mr. Mitchell; 2d, Mr. Burgess.

## BATH CHRYSANTHEMUM SHOW:

### November 11 and 12.

The committee of management and the energetic Secretary of the Bath Floral Fête and Band Committee, are to be congratulated upon the success of the show of Chrysanthemums, fruits, and vegetables, which was held in the Assembly Rooms on the above dates, and which was larger than any previous show of the kind. The trained plants, which were neat without being stiff, and cut blooms of Chrysanthemums were, on the whole, of a high order of merit, as also were the Grapes, Pears, Apples, and vegetables, ornamental foliage and flowering plants, Primulas, &c.

Plants.

In the class for six large flowered distinct varieties, Mr. E. Silcox, gr. to Mr. W. Vowles, secured chief honours with dwarf, well-trained, and grandly-flowered plants, inclusive of one of Mrs. Dixon, to which the National Chrysanthemum Society's Silver Medal for the best plant in the show was awarded. Mr. R. B. Cater, Bath, was a good 2d; and Mr. G. Tucker, gr. to Major Clarke, Trowbridge, was 3d.

Mr. F. J. Walters had the best four plants, showing good specimens; Mr. H. Scott had the 2d best, and Mr. A. A. Walters the 3d best lot, all showing creditably grown plants.

Mr. W. J. Brown had the best six plants, distinct varieties, of Japanese; Mr. S. P. Budd the 2d best, and Mr. G. Tucker the 3d best, and 1st in the next class for a like number of pompons.

Mr. J. E. Morris, gr. to R. B. Cater, Esq., was 1st for specimen plant (pyramidally trained) with Peter the Great, 7 feet high and nearly 5 feet through at the base; Mr. Southard, gr. to J. Brown, Esq., was 2d, with the same variety; and Mr. Silcox 3d, and 1st for a similarly-trained plant of pompon; Mr. Jolly being 2d.

Mr. James Lee, gr. to T. M. Miller, Esq., was 1st in class 8 with Mrs. G. Rundle (which also received the 2 guinea prize which was offered for the best plant in the show grown by amateurs); equal 2d, Mr. Morris and Mr. Silcox, showing Peter the Great and Mrs. Dixon respectively.

In the class for three incurved and three Japanese, combining best foliage and bloom with most natural growth, there was only one lot put up by Mr. W. J. Brown, who was awarded 1st place.

Primulas were shown largely and well in the class for twelve plants (one in each pot), six dark and six light, single—1st, Mrs. Walker; 2d, Mr. H. Lord; and Mrs. Home was 3d, all showing large, well-flowered plants of a very good strain.

For six plants, any colour, single, Mr. T. M. Miller was 1st; Mr. Jerom Murch 2d, and Mr. H. Bennett 3d.

Mrs. Home was 1st for four plants of double-flowered Primulas; and Mr. T. Jolly, 2d.

For six ornamental foliage plants, distinct varieties, Mr. W. C. Drummond was 1st; Mr. J. W. Mould, gr. to E. E. Bryant, Esq., 2d; and Mr. H. Mardon was 3d, all showing well; and in the class for four plants of a like description, Mr. T. M. Miller was 1st, Mr. J. Murch 2d, and Mr. R. B. Cater 3d.

Mr. Hawkins, gr. to Thomas Jolly, Esq., had the best single specimen stove or greenhouse plant in a fairly well flowered plant of Eucharis amazonica; Mr. Mould had the 2d best, showing Lapageria rosea, trained balloon-shape, and Mr. G. Tucker, the 3d best, with Rondeletia speciosa,

In the class for three standard Chrysanthemums, distinct—1st, Mr. S. P. Budd; 2d, Mr. W. J. Brown; 3d, Mr. T. Jolly.

Mr. Cater had the best six plants, dissimilar varieties, for conservatory decoration; 2d, Mr. E. Silcox; 3d, Mr. Jolly, all showing well.

The class for the best group of Chrysanthemums brought out a capital competition, the plants, foliage, and flowers, being alike fresh and good, 1st, Mr. Gay, gr. to L. Daubeny, Esq.; Mr. Cater being a capital 2d, and Mr. Budd a good 3d—a Certificate of Merit being awarded to Mr. A. A. Walters' group.

The three prizes for six plants of Poinsettias, brought out dwarf creditably grown plants—1st, Mr. S. Tredwell; 2d, Mr. F. Tagart; 3d, Mr. J. Baily.

For a collection of plants arranged for effect on a space not less than 10 feet by 4 feet, Messrs. George Cooling & Son, Bath were 1st, with a neatly arranged collection of choice plants, including Orchids, Bouvardias, Crotons, Dracenas, Ferns, &c. Mr. Drummond was a capital 2d, and Mr. Miller a good 3d.

The two prizes which were offered for the best twelve plants of Cyclamen brought out some nice plants. 1st, Mr. A. A. Walters; 2d, Mr. G. Garaway; a Certificate of Merit being awarded to Mr. W. S. Ashman.

There were three lots of six plants each of Bouvardias staged. 1st, Mr. G. Garaway, with nice bushy plants of Alfred Neuner, B. Hogarth, B. jasminæflora, B. The Bride, &c.; 2d, Mr. Miller—all showing capital plants, well flowered. The last-named exhibitor had the best six plants for table decoration.

Cut Flowers.

In the class for twenty-four blooms of large-flowered Chrysanthemums, exclusive of Anemone and Japanese, not less than twelve distinct varieties, Mr. W. Cook, gr. to J. Taylor, Esq., was placed 1st, with a very good stand; 2d, Mr. F. Tagart, and Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, Frome, was a good 3d. Jeanne d'Arc in this stand was awarded the National Chrysanthemum Society's Silver Medal for the best bloom in the show. A Certificate of Merit was awarded to Mr. J. Marshall for his stand.

Mr. L. Daubeny had the best stand of twelve distinct varieties, and Mr. R. Richards the 2d best, only two lots being staged.

Mr. H. Waite was 1st for six varieties, Messrs. J. Baily and Budd being 2d and 3d in that order, all showing well.

Messrs. F. Hooper, G. Hooper, and Jolly were 1st, 2d, and 3d, in the order in which their names appear, for twelve bunches of pompons.

In the class for twelve blooms, Anemone-flowered, in not less than six varieties, Mr. E. Cole, gr. to W. Pethick, Esq., was 1st, Mr. Tagart and Mr. H. Derham being 2d and 3d respectively.

In the corresponding class for a like number of blooms of Japanese Mr. Iggulden was a good 1st, Mr. F. Tagart and Mr. J. Marshall being 2d and 3d. Eight lots were staged in this class. In the following class for twelve incurved blooms, in four distinct colours, Messrs. James Taylor, J. Marshall, and H. Derham, secured the prizes in that order.

Dressed Vases and Bouquets.

These were admirably shown, being composed of tastefully arranged choice flowers. For the best-dressed vase or epergne for table decoration, Mr. E. T. Hill took 1st prize with a light, graceful stand. Mr. G. Garaway had the best bouquet for the hand, Mr. W. H. Mould the 2d best, and Mr. E. Cole the 3d best, all with good arrangements.

Fruit.

The show of fruit was, as regards both quantity and quality, an excellent one.

Grapes.—For four bunches of Grapes, not less than two varieties, Mr. Nash, gr. to the Duke of Beaufort, Badminton House, Chippenham, was 1st, showing good, well-finished bunches of Black Alicante and Muscat of Alexandria; Mr. W. Taylor, gr. to James Chiffin, Esq., Bath, was a good 2d; and Mr. H. Carpenter, Bath, was 3d. Mr. Nash was again to the front with three medium-sized compact bunches of Black Alicante, Mr. W. Taylor being 2d, with smaller and less compact, though better coloured, bunches; 3d, Mr. Chedze, gr. to W. Duck, Esq., for larger but badly-finished examples of the same variety — Alicante. Eight lots were staged. Mr. J. Elliott, gr. to H. W. Tugwell, Esq., had the best three bunches of white Grapes, showing nice bunches of Muscat of Alexandria; Mr. G. W. Shelton, gr. to W. K. Waite, Esq., and Mr. H. Carpenter being 2d and 3d with the same variety.

There were four collections of six varieties of dessert fruit (Pine excluded) staged. Here Mr. Nash was once more to the front, showing three bunches of Alicante, and a like number of Muscat of Alexandria, both being good in bunch, berry, and finish; Golden Gem Melon, Nonpareil Apples, Hacon's Incomparable Pear, and a good dish of Medlars. Mr. Iggulden was a good 2d, and Mr. Banister, gr. to H. S. Vincent Ames, Esq., was 3d. Four collections were put up.

Apples were well represented, as also were Pears. In the class for six varieties of the former (dessert), six fruits of each, there were eleven lots put up, the 1st prize going to Mr. George Hallett for good even dishes; Mr. G. Garaway was a good 2d, as was Mr. E. Hall 3d.

Out of fourteen lots of four dishes each Mr. W. Evry had the best.

Mr. A. J. Biss was 1st for eight fruits of one variety (ripe); Mr. F. Ford was 2d, and Colonel Grant 3d, fourteen dishes being shown.

In the class for six varieties, culinary, six fruit of each, there were ten lots put up, the 1st prize falling to Mr. W. Webber, Messrs. Smith and Hallett being 2d and 3d; and in the corresponding class for six fruits of one variety Mr. Buss, gr. to Mrs. Hall, was 1st. Thirty-two dishes were shown.

There were three classes devoted to Pears. In the 1st class, for six varieties, four fruits of each, Mr. W. John Smith was 1st, for ripe, clean, even fruit; 2d, Mr. E. Smith, whose best dish was Beurré Diel; 3d, Mr. E. Hall. Eleven lots were staged.

In the next class, for four varieties, four fruits of each, Mr. H. Lord was 1st, Mr. A. T. Hall 2d.

Vegetables.

Three good collections of nine varieties were put up by Messrs. G. Garaway, T. Evry, and W. Tylee, who took the prizes in that order. The 1st prize collection contained some extra good Telegraph Cucumbers, Tomatos, and Carrots.

## MAIDENHEAD CHRYSANTHEMUM:

### November 11 and 12.

The annual exhibition of this local Society took place on the above dates. Although the third occasion on which a show has been held this is the first time that any prizes have been awarded to the exhibitors. Having met with every encouragement in the previous attempt to establish a Chrysanthemum show the committee and secretary felt emboldened by their efforts, and in their schedule several substantial prizes were offered for this season. This is a most commendable system to adopt, and far preferable to launching forth with a flourish of trumpets and high prizes in the first instance, often resulting in a balance on the wrong side. The committee have every reason to be satisfied with their labours so far, their mode of procedure being worthy of imitation.

For groups of plants, quality and effect combined, Mr. Owen, Boyne Hill Nurseries, Maidenhead, staged an admirable collection, chiefly consisting of Japanese kinds. The notable features of this group were the fine blooms, the varied colours, and the remarkably dwarf and sturdy character of the plants; Mr. Elliott, gr. to J. Hibbert, Esq., coming 2d, with an effective group which would have been improved had a little more thinning of the blooms been practised.

Mr. Hopkins, gr. to J. W. Burrows, Esq., took all three of the premier awards for specimen plants (incurved, reflexed, and Japanese).

Cut bloom classes.—Mr. Elliott was the strongest competitor, taking 1st for twelve incurved kinds with a very even set. For twelve Japanese the same grower stood 1st with fine blooms, likewise with incurved varieties. In each case Mr. Sharrett, gr. to Miss Harrison, Maidenhead Thicket, was a very close competitor with fine flowers.

The amateur exhibitors are to be congratulated on the fine blooms that were staged by a few of the best growers, they being evidently well-up in Chrysanthemum culture. Mr. Hance and Mr. Arrowsmith were the most successful.

A class devoted to the ladies, for the best-arranged basket, with the option of using other foliage in combination therewith, produced some lively competition, Miss Temple, of Braywick Lodge, taking the 1st prize, with a very pleasing arrangement, some tinted Vine leaves being worked in with good effect.

The black Grape class brought out two grand bunches, splendidly coloured, of Gros Colmar, from Mr. Lockie, gr. to Lord Fitzgerald, Oakley Court, to which the 1st prize was deservedly awarded, the 2d going to two good bunches of Lady Downe's, from Mr. Hopkins.

Other fruits were shown in considerable numbers, consisting of the various Apples, Pears, &c., now in season. *J. H.*

## READING CHRYSANTHEMUM:

### November 13.

It should be noted that this is a distinct exhibition from those held by the Reading Horticultural Society. It is carried out by an independent committee, Mr. R. D. Catchpool being the Hon. Secretary and Manager. This is the second show, and took place in the two halls of the new Municipal Buildings. It was a very large show, plants, flowers, and fruit alike being of a high order of merit, and there was a keen competion in all the leading classes.

Plants—Groups.

The best collection of Chrysanthemums occupying a space of 50 feet, brought as many as seven competitors, the best coming from Mr. Baskett, gr. to W. J. Palmer, Esq., Reading; Mr. Parham, gr. to H. J. Simonds, Esq., Reading, being 2d; two others being placed equal 3d, and two equal 4th, so good were they. The plants were well grown, and the quality of the flowers decidedly high.

Specimen plants.—The best six, excluding Japanese, came from Mr. Farey, gr. to C. Stephens, Esq., Wood-

ley ; Mr. Booker, gr. to R. Tomkins, Esq., being 2d. They were generally well grown and flowered, and consisted of varieties usually grown as specimens. Mr. Powell, gr. to W. G. Gilligan, Esq., had the best three plants ; Mr. Franklin, gr. to F. A. Lucas, Esq., Sonning being 2d. Mr. Booker had six good plants of Japanese varieties, Mr. Herman, gr. to F. Skurray, Esq., being 2d. Mr. Farey had the best three, Mr. Surman being 2d, both with well grown and flowered specimens. Mr. Booker also had the best three and the best specimen standard varieties, Messrs. Surman and Neighbour taking 2d prizes. Mr. Booker was the only exhibitor of three specimen pompons ; Mr. Powell being 1st with three, and Mr. Farey with a single specimen.

CUT BLOOMS.

These were numerous and very fine, the best stands coming very close to each other in point of merit. The best eighteen incurved blooms came from Mr. Neville, gr. to F. W. Flight, Esq., Twyford ; 2d, Mr. W. Wildsmith, The Gardens, Heckfield Place, Winchfield, with an admirable lot of flowers, almost equal with Mr. Neville's in point of merit ; 3d, Mr. Pope, gr. to the Earl of Carnarvon, Highclere.

The best twelve blooms came from Mr. Strong, Wellington College, who had a fine even lot ; 2d, Mr. Holdaway, gr. to Major May, Basingstoke ; 3d, Mr. Baskett, Mr. Kendall, Roehampton, had the best six, which comprised very fine blooms ; 2d, Mr. Jennings, Farnborough ; 3d, Mr. Parham.

The reflexed varieties were finely shown by Messrs. Neville and Wildsmith, the 1st prize going to the first-named. Mr. Wildsmith had an excellent lot of blooms also. In the class for six blooms they were so indifferently shown that the two leading prizes were withheld.

Anemone-flowered Chrysanthemums were in excellent form also. Mr. Wildsmith had the best six, Mr. Kendall being 2d, and Mr. Elliott, Maidenhead, 3d.

Mr. Kendall had the best six bunches of pompons, shown in trusses ; Mr. Wildsmith being 2d.

Japanese Chrysanthemums were very finely shown, as well as numerously. Four of the stands of twelve varieties came very close together. Mr. Holdaway was 1st ; 2d, Mr. Neville ; equal 3d, Messrs. Wildsmith and Baskett ; while two extra prizes were also awarded. Mr. Jennings had the best six, Mr. Neighbour being 2d.

The best bouquet of Chrysanthemums was shown by Mr. Phippen, florist, Reading ; Mr. Balchin, gr. to B. Simonds, Esq., Reading, being 2d ; and Mr. Elliott 3d.

Mr. Balchin was the only exhibitor of a vase of Chrysanthemums, which was awarded a 1st prize.

Messrs. Phillips, of Reading, had the best stand of cut flowers, and also that of flowers and foliage. Mr. Neville had the best six Roses, Mr. Tranter coming in 2d.

Miscellaneous plants included Chinese Primroses, Violets, Cyclamens, table plants, Bouvardias, Poinsettias, berried plants, &c., all of which helped the general effect.

## CHESHUNT CHRYSANTHEMUM : November 13 and 14.

ONE of the youngest amongst Chrysanthemum societies, and one of which much is hoped, is that started at Cheshunt last year, and that held its second exhibition at St. Mary's Hall, Cheshunt, on the above dates. This hopeful augury is justified by the fact, that, whereas last year at the opening display trade help was deemed a necessity, this year such help has been entirely dispensed with, nevertheless a very full and meritorious exhibition was secured. Groups of plants arranged for effect occupied the vantage ground of a stage, erected at the extreme end of the hall—other specimens being arranged at the corners and around, the cut blooms, collections of fruit, vegetables, &c., occupying three long tables throughout the entire length of the building.

The two prizes offered for the best managed group of plants, quality of blooms to be taken into effect, were so warmly contested as to force the judges to award equal 1st prizes, these being won by G. N. Forward, Esq., and F. J. Debenham, Esq., both showing considerable merit.

The best group of miscellaneous plants, the 1st prize for which was won by W. G. Rowlett, Esq., was a deservedly popular one, the winner by his mixture of Roman Hyacinths, Ferns, Cyperus, Dracænas, and other flowering plants, having made a very pretty display.

For six distinct varieties, large flowered, Robert Ewing, Esq., received 1st prize ; W. G. Rowlett, Esq., 2d.

Messrs. Crocker and Horner won 1st and 2d prizes for Primulas, in the order here given, the plants of the latter being of fine growth and finish, yet wanting in variety.

An extremely fine plant of Adiantum, grown in an Orchid-pot, shown by W. G. Rowlett, Esq., received an extra prize.

The class for twenty-four cut blooms, twelve incurved and twelve Japanese, was a very superior one, and after severe competition, Robert Ewing Esq. (gr., J. Billesworth), was awarded 1st prize, showing splendid blooms ; J. Pringle, Esq., Pousbourne, was 2d.

In the succeeding class, six reflexed and six Anemone, large-flowered, the former two exhibitors won, maintaining each his former position.

The best twelve Anemone, large, were shown by Mr. J. Pringle, Mr. Ewing taking 2d prize.

Six large-flowered Anemone found Messrs. E. Horner and J. Warren equal 1st, the latter exhibitor winning 1st prize for six bunches of pompons.

Mr. S. Not, Albury House, was 1st for twelve Japanese, showing very good blooms ; Mr. E. Horner and Mr. Powlett being respectively 1st and 2d with six blooms incurved ; the same exhibitors being similarly bracketed for six Japanese, distinct.

For four incurved, four Japanese and four Anemone, Mr. R. Ewing, Burton Grange, was an excellent 1st ; the latter also staged a large collection of seventy fine blooms, which were Highly Commended ; and those from E. Caldecott, Esq., Ingatestone, consisting of six Japanese and six incurved, were also Highly Commended.

Fruit made a good display. Very fine Grapes and Apples from Mr. Warren secured for him 1st prizes, and Mr. Ewing won also 1st prize for Pears.

The display of vegetables by cottagers deserves a word of praise. *W. E.*

## ASCOT, SUNNINGHILL, and DISTRICT HORTICULTURAL : November 11.

THIS was the second exhibition of Chrysanthemums held by the Society, and it took place in one of the large dining-rooms in the rear of the grand stand at Ascot. It was a charming show, flowers and plants being very good indeed, while the fruit classes were well filled. We can glance only at a few of the leading features, but it must be admitted the exhibition did great credit to the Chrysanthemum growers of the district.

In the class for a group of Chrysanthemums in pots, shown in the form of bays, there was a very good and keen competition, the 1st prize going to Mr. Lane, gr. to Miss T. D. Smith, King's Ride, Ascot, with an admirable lot of plants well grouped ; Mr. Savage, gr. to Baron Huddlestone, Ascot, coming 2d, and Mr. G. Read, gr. to A. Magniac, Esq., Ascot, being 3d. There were seven groups, and prizes were awarded to six of them. There were several other classes for plants in pots, but while creditable to the district, they did not rank so high in value as the cut blooms, to which a little more attention is given.

A class for the best group of miscellaneous plants, stove and greenhouse, arranged for effect, brought a superb group from Mr. Bant, gr. to J. C. Bowring, Esq., Sunningdale, far away the best of its kind shown, and worthy of the highest commendation.

The best eighteen cut blooms of incurved Chrysanthemums came from Mr. Page, gr. to A. Southard, Esq., Bracknell, who had excellent examples of both old and new kinds ; 2d, Mr. Saunders, gr. to the Hon. A. Ponsonby, Ascot, with a lot only just inferior to the foregoing.

Mr. Lane had the best twelve blooms, showing remarkably fine blooms.

In the class for six varieties there was a good competition and excellent flowers. Mr. Lane had the best six flowers of one variety, staging very fine examples of Lord Alcester, and one of these was selected as the best flower in the room. Next in point of merit was Empress of India. Mr. Savage had the best six reflexed, staging capital flowers.

In the classes for twelve and six blooms of Japanese there was a large competition ; the best twelve came from Mr. Page, Mr. Saunders being 2d. The flowers were large and finely developed.

A very fine collection of Chrysanthemums in pots, margined with Bouvardias, Ferns, &c., was staged by Messrs. J. Standish & Co., Royal Nurseries, Ascot, and highly commended, as also was a fine lot of cut blooms of Chrysanthemums shown by Colonel Mallock, of Bagshot.

FRUIT.

The best two bunches of black Grapes were Cooper's Black, shown by Mr. Wells, gr. to R. Ravenhill, Esq., Bracknell ; Mr. Sinclair, gr. to Colonel Campbell, Windsor Park, being 2d with good examples of Black Hamburgh. Mr. Sinclair had the best white Grapes, showing well finished examples of Muscat of Alexandria.

Mr. Wells had the best four dishes of Pears, amongst them Oswego Beurré, a good-looking American kind ; Mr. Sinclair was 2d ; Mr. Hughes, gr. to H. F. de Paravicini, Esq., Ascot, was 3d.

The best four dishes of Apples came from Mr. H. Godfrey, gr. to H. C. Rothery, Esq., Ribsdon, Windlesham, who had excellent fruits ; 2d, Mr. Sinclair ; Mr. Wells was 3d.

Messrs. Sutton & Sons, Reading, offered prizes for the best six dishes of vegetables, the leading prize going to Mr. Hughes, for a very fine lot.

## HUDDERSFIELD CHRYSANTHEMUM.

THE second annual exhibition was held in the Town Hall, Huddersfield, on Friday and Saturday, November 13 and 14, and was in every way a thorough success. Though this Society is but of very recent formation, the committee of management have every reason to be pleased with their present venture, and are encouraged to hope for even better things, for when once an interest in a certain class of plants is created, it is surprising how rapidly it extends, and many who at first felt doubtful of the possibility of establishing a good society and show in this town, are constrained to become subscribers, and in a very short time will enter the lists as competitors. With a very liberal schedule, there being prizes of £10, £7, several £5, and a timepiece of £5 value, it will be seen there was something to induce strenuous efforts being made.

In the open class for forty-eight varieties, distinct, twenty-four Japanese and twenty-four incurved, Mr. W. B. Cox, gr. to W. H. Watts, Esq., Liverpool, was the only exhibitor ; his stands were of a splendid order, just such as we look for from gardeners in that district. Mr. Cox was 1st with twenty-four varieties, distinct, twelve Japanese and twelve incurved ; Mr. F. Stokes, gr. to Mrs. C. Crosland, was 2d.

In the class for twenty-four, confined to local growers, Mr. W. Daniels, gr. to Mrs. Hague Cook, was well to the front. This exhibitor was most successful, taking 1st prizes in most cases. The 2d fell to Mr. Chambers, gr. to J. Vickerman, Esq., whose stand was very meritorious ; 3d was taken by Mr. H. Walker. With twelve blooms Mr. Daniels was 1st, equal 2d being awarded to Mr. J. Nettleton and Mr. W. Chambers, the 3d to Mr. J. Smith.

In the class for twelve incurved blooms two stands were disqualified, the judges considering that the blooms under the name of Empress of India and White Globe were the same thing, viz., Empress of India.

With six incurved Mr. Daniels was 1st, Mr. A. E. Stott coming 2d ; while for six Japanese, and six reflexed and six pompons, the 1st prizes in each case fell to Mr. Daniels.

Three fine groups of plants in flower were arranged in half circles in a space containing 54 square feet ; these were just in front of the orchestra, were very creditable and much admired. The 1st prize group, to which a beautiful timepiece was awarded, was staged by Mr. J. Hatch, gr. to J. F. Brigg, Esq. Here every plant was in the best of health and condition, foliage good, well developed, and fine coloured blooms. The plants averaged 4 to 5 feet high, and were arranged as regards colour in a very admirable manner. The 2d was taken by Mr. T. Carter, gr. to A. Hurst, Esq. ; the 3d by Mr. H. Walker, gr. to Mrs. G. Crowther. These two latter ones were good, but a long way inferior to the 1st prize group.

For three specimen plants, incurved, Mr. Hatch was 1st, with Lord Alcester, Empress of India, and Golden Empress ; Mr. Chambers being 2d. The latter exhibitor was 1st with three Japanese, showing James Salter, Lady Selborne, and Margot, in very fine form ; Mr. Green was 2d.

With three pompons Mr. Green came in 1st, Mr. Chambers 2d.

Some good plants of Bouvardias, 2 feet high and well covered with bloom, were shown by Mr. Chambers, and were placed 1st, the 2d falling to Mr. W. Bubb. Mr. Chambers was also placed 1st with good plants of Poinsettias, and also for three pots of Roman Hyacinths ; Mr. Bubb and Mr. Daniels coming in 2d and 3d in this latter class.

There were many plants of Chinese Primulas, for the most part well done. The 1st prize was taken by Mr. Denham ; 2d, by Mr. T. Carter ; and 3d by Mr. H. Walker.

Mr. Bubb was the only exhibitor with three pots of Calanthes, and was awarded 1st.

There were good stands of twelve trusses of stove and greenhouse cut flowers. Mr. Chambers was placed 1st, Mr. Stevenson 2d, and Mr. Tindle 3d. Capital trusses of bright greenhouse Rhododendrons, Lapageria rosea and L. alba, Eucharis, Amaryllis, Abutilons, &c., were present in these collections.

Mr. F. Stokes was 1st with three Ferns, among which was a fine plant of Cibotium Baromets ; Mr. Daniels was 2d, and Mr. H. Walker 3d.

Some very good bouquets were shown, Mr. Lamprey being 1st, Mr. J. F. Sharp 2d, and Mr. J. Bubb 3d.

Tree Mignonette and good plants of Eucharis amazonica were also shown, whilst Epiphyllums were staged by several exhibitors, Mr. W. Daniels coming in 1st.

A small quantity of fruit was shown, which was not of a very high quality.

There was a good display of table plants, neat, light, and useful, just suitable for the purpose. Mr. W. Daniels was 1st, with six ; Mr. Chambers 2d, and Mr. F. Stokes 3d.

The committee and Honorary Secretary, Mr. John Bell, have much cause to be gratified with their success and the establishing of their position. *W. S.*

## CHRYSANTHEMUMS AT THE EXETER NURSERY.

MESSRS. LUCOMBE, PINCE & CO.'S annual show of spring flowers in March is always one of considerable interest to the horticultural public, as is testified by the multitude of admirers who flock thither, and it seems that their autumn show of Chrysanthemums is destined for similar honour. Devonshire is often characterised as "the garden of England," and Devonians are most essentially a garden-loving people ; perhaps this trait of character is particularly distinguishable in the neighbourhood of Exeter—a fact supported by the many well-kept gardens and greenhouses to be met with there. *Apropos* Messrs. Lucombe, Pince & Co. are fortunate in this respect, for it is highly encouraging to promoters of horticultural, as well as other shows, to be freely patronised with visitors. Albeit their Chrysanthemum shows of former years have been very good, yet this season's display eclipses any previous one—not so much in point of number as in quality and improved varieties. About 500 specimens are to be seen, and these are arranged in a beautifully coloured bank, the front row being composed principally of the dwarf pompon flowered sorts, and the unbroken mass of flowers and foliage rising gradually to 7 and 8 feet in the back row. *W. N.*

## CYCADS IN FLOWER AT KEW.

The magnificent collection of Cycads at Kew is second only in importance and nobleness of form to the rich collection of Palms cultivated in those gardens, chiefly in the Palm-house. Popularly these two orders—Palms and Cycads—are considered to be closely related; indeed, many people call the commoner garden Cycads Palms, but there is a very wide botanical difference between the two, much wider than between Palms and Pandanuses. In early days even botanists were puzzled as to the proper relationship of Cycads, some classing them along with the Palms, whilst others, relying upon the habit and form of their foliage, ranked them with Tree Ferns! If, however, we glance at the character of the inflorescence of the Cycads we see at once that they must be affixed to Coniferæ, and in the structure of the stem they are evidently Dicotyledons. So near is the relationship between Cycads and Conifers that they can only be distinguished from each other by their habit and leaf characters. In the Kew collection there are now a good number of Cycads bearing their cone-like inflorescences, and to any one interested in these strange yet noble foliage plants these flowering specimens will be specially attractive. As in some genera of Coniferæ, viz., Gingko, Araucaria, &c., the Cycads have their male and female flowers on separate plants, and there is often a wide difference between the form and size of the cones of the two sexes—a difference which often extends to the habit of the whole plant. The kinds now in flower, that is, bearing cones, at Kew, are Encephalartos villosus, a beautiful, arching-leaved plant, with rather large shining pinnæ, the leaves all springing from a short stout stem (see fig., p. 181, vol. xiii., 1880. The cone is on the top of the stem, and is erect, 1½ foot long by 6 inches wide at the base, gradually narrowing to a pointed top, and composed of a great many closely set fleshy scales, on the undersides of which are the large nut-like fruits. As the cone ripens it turns from green to bright yellow, the scales open out, and reveal the deep orange seeds. The ornamental character of these cones when ripe is very attractive. It is remarkable that although the female flowers are not fertilised, yet the seeds grow to full size and maturity; they are, however, devoid of embryo, and, of course, are, therefore, useless for propagation. Zamia mexicana is represented by a large specimen bearing two male cones, and a magnificent plant with a very fine female cone. Nothing can surpass this female plant in the nobleness and grace of its great, feather-like leaves, which are 10 feet long, beautifully arched and twisted, the pinnæ being long and pointed, smooth, shining green, and arranged regularly all along the midrib. It bears a cone 15 inches long by about 6 inches in diameter, which is made up of thick, closely set, fleshy scales, arranged exactly one over the other, not in a spiral, as in the Encephalartos and Macrozamia; each scale is hexagonal in front, with a ridge across the middle, upon which are two spiny horns. Small plants of Zamia muricata, Z. Skinneri, and Z. Miqueliana are also in flower, the cones in these being small and pale brown, except in the last-mentioned, which has the face of the scales broad, two-horned, and coloured olive-green, mottled with brown. A splendid plant of Encephalartos Altensteini, the most striking perhaps in the whole collection, is now bearing two very fine cones, each nearly 2 feet in length, by 6 inches wide at the base, upright, or nearly so, and composed of hundreds of rather narrow, pointed scales, which have separated, and allowed the dust-like waxy pollen to fall out and cover the whole of the heart of the plant. It is impossible to give by mere words a satisfactory description of this noble specimen (see fig., p. 392, vol. vi., 1876); it stands 8 feet high, the leaves springing from a stemless trunk, each leaf over 6 feet long, the spread of the foliage being about 12 feet through. Two large plants of E. caffer are bearing cones, which are 18 inches long by 7 inches wide, and pale brown in colour. An interesting plant, now coning for the first time we believe at Kew, is a female specimen of E. horridus. It has glaucous rigid spine-clothed leaves, and the cone is about a foot long and 6 inches wide, the scales being broad faced, grey, and arranged in a spiral.

A large plant of Cycas Rumphii, with a thick stem 6 feet high, bears a stout cone 1 foot in length and 4 inches wide, its colour being yellowish-brown. There appears to be little difference between this specimen and plants labelled C. circinalis. It is only in very large stoves where room can be afforded these plants to grow into large specimens that their noble character is properly developed. The appearance of the Palm-house at Kew would fall a long way short of its present beauty were the Cycads removed. On a shelf in the same house is a rich collection of the smaller species of this order. It is only in botanical collections that the numerous kinds of Cycads could reasonably be found room for, as for garden purposes many of them are very similar to each other. There are, however, a good many species among such genera as Cycas, Zamia, and Macrozamia, which are well worthy the attention of gardeners, as they are very graceful in form, often dwarf, and of useful size for decorative purposes, and they are at least as well able to withstand rough usage as are many of the Palms. With very few exceptions all the Cycads are easily grown; they require the temperature of a stove or a warm greenhouse, and whilst some of them, such as the Zamias and Cycases, thrive best when kept moist and shaded from bright sunshine, others, such as Encephalartos, are perfectly at home in a dry atmosphere and full sunlight. *W.*

## FRUIT NOTES.

Wall Fruit on a Wooden Fence.—From the fact that the choicer kinds of wall fruit are seldom grown on a board fence it would appear that there is some doubt as to their success. In the southern parts of the country even the choicer Peaches and Nectarines may thus be grown. A half-inch deal weather-board tarred fence forms the boundary of my garden. It is 6 feet 6 inches high, with strong oaken posts 8 feet apart. On this I have grown during the past summer some fine highly-coloured Nectarines, Victoria and Pine-apple, and there is plenty of well-ripened shoots showing prominent double and triple buds as a promise for next year. In addition to the Nectarines there were some remarkably fine Plums—Pond's Seedling, Goliath, and Coe's Golden Drop. Between the trees Tomatos bore a great crop. Low wooden fences of the kind described would be serviceable in many ways and especially for the finer kinds of Pears, such as Pitmaston Duchess, Glou Morçeau, Marie Louise, and Easter Beurré. For Pears and Plums, however, the wooden walls might be double and stand east and west. For these match-boarding might be used nailed to the front of 4-inch posts, and the hollow space filled in with sawdust. It would be easy to protect the blooms from spring frosts by a movable projecting coping. *T. W., Harrow.*

Beurré Rome Gaujard.

This is a seedling from Beurré de Jonghe, raised by M. Gaujard, jun., and by him dedicated to his father. It is figured and described in the *Bulletin d'Arboriculture* for August, from which we take the following particulars:—"The fruit is of medium size, pyriform, skin brownish-green, passing into rust-coloured, and ultimately yellow. The flesh is white, firm, melting, and slightly perfumed. Season, January and February."

Princess and Mary Pears.

By an error these two Pears were written as one on p. 553, under the name of Princess Mary. Both are good Pears, but Princess is the hardier and at the same time the better variety. Both also produce handsome brightly coloured fruit, abundantly freckled. For a small bush on the Quince, or a cordon, few Pears will be found better than Durandeau. A more prolific Pear, trained in these ways, I do not know. As a bush on the same stock Autumn Nelis and Beurré d'Aremberg are full-flavoured and good yielders. A large very hardy sort for an east wall may be mentioned in Doyenné Boussoch. It was omitted in the first list because the quality was very so-so—at least, in the soil in which we had it growing. *C. A. M. C.*

Gros Colmar Grape.

Two remarkably fine bunches of this kind were shown by Mr. Lockie from Lord Fitzgerald's garden at the annual exhibition of the Maidenhead Chrysanthemum Society last week. They were coloured as black as Sloes, with berries of an extra size even for this big-berried kind. The bunches, too, were of large dimensions, therefore in keeping with size of berries. It would be interesting to growers of this Grape who do not succeed in its culture if Mr. Lockie would record his mode of procedure to attain such satisfactory results. *J. Hudson.*

Beurré Clairgeau Pear.

The quality of this Beurré deserves all Mr. Tonks' strictures, albeit I have heard good words spoken of it by Devonshire growers. It, however, has its great and special value; for if any conclusion can be generally valid in Pear culture, it is one of the best varieties extant on which to graft others. *C. A. M. C.*

—— May I say that I think Mr. Edmund Tonks is a great deal too hard upon this Pear in your last impression? It is a favourite of favourites with me in its own line. I grant that Dr. Hogg only gives it third-class honours in point of quality, by which I suppose flavour is meant. But it comes so nearly to a second-class even in this respect, that with others it very often takes a higher grade than he has accorded to it. It, moreover, should be noted that Beurré Clairgeau is most variable in its performances, and I do not think Mr. Tonks would have much to complain of if he had a good specimen brought to him. But, surely, something more than flavour may be considered. I care as much for the gratification of my eyes as for that of my palate in everything which comes out of a garden—and if you want to have a most glorious sight in the autumn months, I commend to you a large pyramid tree laden from top to bottom with Beurré Clairgeau Pears, and whose branches are quite bent down to the ground by the weight they have to carry. The colour of this Pear is to my eyes splendid in the extreme—a sort of pale yellow, with russet-brown, over which there come patches of the most gorgeous vermilion—and is most attractive to look at. The tree quite glows in the sun on a bright October day; and if the fruit had only the flavour of a Potato I would grow it still for the beauty of the picture which it presents. It may be added, that these trees bear so well with me—far better than others I have—that I am sure the produce of a single tree would be worth ten shillings at one of the fruiterers in Ryde, if I cared to dispose of it. Taking their average flavour, extreme beauty of the tree itself, unbounded fertility, into consideration, I think Beurré Claigeau should never be put out of court, but should be met with more frequently than it is. I append two opinions, which may count for something about this matter. André le Roy says, in his *Dictionnaire de Pomologie*, "This Pear is a great bearer. The fruit has a white flesh, which is melting, juicy, and not very gritty, the aroma being agreeable and delicate. It is very variable, however, as regards both shape and quality: although sometimes second-rate, it is generally first-class." In Scott's *Orchardist* I find the following statements:—"It forms a handsome pyramid either on the Pear or Quince stock, and bears so much, that its limits as a grower are circumscribed by its fertility. This is a very variable Pear in size, quality, form, and time of maturity. The fruit sometimes weigh 1½ lb., or more." He speaks of the flavour as second-rate, though sometimes of high excellence. *H. Ewbank, Ryde.*

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Continued from p.* 619.)

Ivybridge and the South Hams.—The following morning found us *en route* for Ivybridge by rail. The line runs through a lovely district of wooded valleys, verdant slopes by winding upland streams, rocks red and grey, mines worked by water and so but little disfiguring the landscape, and distant views of the moorland. Passing the picturesque confluence of the Walkham with the Tavy, the beauties of this class of scenery culminate about Horrabridge and Bickleigh. At the latter point the mass of granite known as Wigford Down, projecting like a peninsula into the Devonian slates, over which it towers in the crag known as the Dewerstone, and altering their mineral condition along the well-marked line of junction at Shaugh Hill, recalled the tradition of the ghostly pack of "swish" hounds that erst swept over the hills in their nightly hunt—thoughts soon dispelled by the sight of the outlying modern earthworks to the north of Plymouth. Milky streams, flowing between broad tidal wastes of chalk-like sediment, telling of the "kaolin," or porcelain-clay, that results from the weathering of the moorland granite, are not delightful, and we were glad, on

leaving Mutley, an uninviting suburb of the great port, to climb the steep incline that soon brought us into the picturesque valley of the Erme. This we had an opportunity of examining by stopping for an hour or two at Ivybridge, where the railway crosses the river-valley by a lofty wooden viaduct rising from stone piers. Here the river, tumbling over huge boulders through a wooded glen, would have been perfectly charming, but for the thriving paper-mill on one side and the unattractive town on the other; and, even with these drawbacks, the single arch with its leafy covering to which the place owes its name, is decidedly picturesque. Below it is a weir, mainly natural, formed of huge ledges of live rock, dipping at high angles northwards, *i.e.*, up stream. The slate in this neighbourhood has been altered by the intrusive granite into a "spotted," or "chiastolite" schist. Just south of the railway station is a very fine specimen of Cupressus macrocarpa, the stem of which is nearly 18 inches through. Finding but little beauty in the dismantled but modern church, its yet more modern substitute, or the town generally, after a comfortable meal at the London Hotel, where there is a very respectable garden, we left for Kingsbridge Road. Getting a good view of the south side of the moor, and crossing several fine viaducts over the streams that flow from it, we reached that uninteresting station, from which, in order to reach the south coast, one has to take a coach-drive of 10 miles. Ten miles, up and down hill, through deep lanes, with banks hung with Hart's-tongue, and hedgerows laden with Nuts, traversing clean, well-cultivated arable land, ignorant of frost—10 miles, moreover, behind a good team, and for the very moderate fare of 2*s.*, is far from disagreeable. Near the somewhat dismal village of Laddiswell we caught glimpses of the bold promontory of Bolt Head, and of the channel to the south-west of it, where the fine tower of the mother-church of Kingsbridge at Churchstowe stands well up on the horizon. Passing the historic gardens of Combe Royal, which we decided on visiting on the morrow, we rattled into the neat little town of Kingsbridge. Piazzas, like those of Totnes, with a queer octagonal clock above the town-hall, and steep streets down to the quay at the head of the beautiful Salcombe estuary, give the place a quaint interest of its own. The fine parish church possesses two of the finest "squints" or "hagioscopes" I have seen, reminding me of those at Shere in Surrey, and besides a good old octagonal granite font, holy-water stoup, and piscina, boasts of a magnificent wooden screen and a marble bas-relief by Flaxman. The comfortable hostelry opposite, the "King's Arms," the starting point of coaches to Dartmouth, as well as to Kingsbridge Road, has a large garden, with extensive vineries and orangeries; but here, as elsewhere, we noticed that under glass the Orange tribe suffer from a disease, apparently fungal, producing black smuttiness upon the leaves. On our way to the quay our attention was attracted by a fine Magnolia, well loaded with bloom, this season having seemingly been very favourable to them, and not here only, for we have since seen one at Starch Green, Hammersmith, in equally good condition. *C. S. Boulger.*

*(To be continued.)*

# The Rosery.

## CLIMBING OR WEEPING ROSES AS STANDARDS.

STANDARD Roses have not been received with very great favour during recent years. The reason of this is perhaps not far to seek. In the first place they have not had justice done them, even when received in good condition, but they are not always received in good condition, especially those that are purchased at sales—they are kept too long out of the ground, and even when they are planted they are placed in such a position that the chances of their producing, even a few good flowers, is very problematical. It is safe to say that the largest proportion of standard Roses for sale in the nurseries are hybrid perpetuals, but then a very large proportion of them are not at all adapted for this system of culture; they do not form good heads, even with the most skilful management, and after three or four years they do not even produce good flowers. In a great many instances the culture is at fault. Even if the plants have good roots, with healthy fibres, they are placed in circumstances where they have to struggle for their food under the most adverse circumstances. It seems to be the right thing to plant a double row of standards from the front gate to the front row of hundreds of villa residences in the neighbourhood of London. In some cases the work of planting is well done, in others it is performed in the most perfunctory manner. A hole is dug out in the hard, unworked, natural soil of the place, scarcely large enough to hold the roots, the earth is thrown back upon them, and the turf is replaced close up to the stem of the unfortunate Rose. I do not recommend planting standards of hybrid perpetual Roses at all, but if they are to be planted, some arrangement must be made to give the roots a chance to grow freely, and some suitable compost must be provided if the ground is not naturally adapted to the growth of Roses. Although I have nothing to say in favour of growing some classes of Roses as standards, there are some Roses that may be grown in that way with the most pleasing results. Thirty or forty years ago standard Roses were frequently to be seen with tall stems from 5 to 6 feet high; indeed, I have a vivid recollection of a towering specimen of the crimson Boursault Amadis with a stem 8 or 9 feet high, in the nursery where I was an apprentice. Some of these gigantic specimens would form a compact head 20 feet or more in circumference. Such specimens form objects of great beauty on a lawn. They are striking features in the landscape, and can well be admired in detail, while a profusion of beautiful Roses can be selected from them as cut flowers. The late Mr. Thos. Rivers, of Sawbridgeworth, wrote the first article in the first volume of *The Florist*, on climbing standard Roses. His words on this subject are well worth quoting:—"Some six years since, having some Rose stocks 5 or 6 feet high, and stout as broom-handles, I was induced to try what effect some of the beautiful varieties of Rosa sempervirens would have if budded on them, as I had some latent idea that they would form very graceful pendulous trees; I accordingly selected from that family a few of its most interesting varieties. These trees are, in the blooming season, pictures; not a shoot has ever been touched with the pruning knife, there is consequently no formality. Their beauty consists in their gracefulness and rusticity, which is quite refreshing in contrast to the closely pruned heads of the finer varieties of standard Roses." The varieties cultivated by Mr. Rivers were Banksiæflora, very double pure white flowers, with straw-coloured centres; Donna Marie, very double, pure white; Félicité Perpetuelle, creamy white, tinted pink on the outside: "it really is perfect enjoyment to see this Rose, in a balmy morning in June, covered with its flowery gems, more numerous than its leaves." Myrianthes, pink, flowers abundantly; Princess Louise, pale pink; Princess Marie. Most of these are white and pink varieties, but the crimson Boursault flowers early, and is dark in colour; so also is Boursault inermis. Mr. W. Paul, of Paul's nurseries, Waltham Cross, recommends Virginian Rambler, Ruga, Flora, Félicité Perpetuelle, Gracilis, Reine Marie Henriette, Maréchal Niel, and Rêve d'Or, for tall standards, such as I have described. One thing ought to be borne in mind—they do not require much pruning. Mr. Rivers remarked of the plants described by him, "not a shoot has ever been touched by a pruning knife." They certainly do not require more in the way of pruning than to cut out any useless wood when the trees are too much crowded with branches. I like also to see the trees well balanced, and in order to have them in this form it may be necessary to lay the foundation for it in the first and second year of the tree's growth. If this is not done the head might all hang to one side instead of growing equally all round. The cultural requirements are simple enough. The Brier Rose grows almost anywhere, and in all kinds of soil, but with the greatest luxuriance and stability in clayey loam. Many gardens do not possess this inestimable boon to Rose growers. A light shallow and gravelly soil is the very worst kind for Roses, and to obtain the very best results when a garden is composed of this material a round hole should be dug out, 2 feet wide and 2 feet deep, and be filled up 3 or 4 inches above the surface with some good clayey loam which has been enriched with a fourth part of decayed stable manure. If the Roses can be obtained they ought to be planted in November, but many persons in the country can obtain such stout, tall Brier stems better than the nurserymen can; and in most old gardens these beautiful climbing Roses can be found rambling in wild luxuriance over old walls, or trained loosely to the walls, or over the porches of the dwelling-houses. Many of these Roses are quite as vigorous as the common Bramble, and might be usefully employed in taking the place of Nettles and other noxious weeds in out-of-the-way corners. When once established on their own roots they can take care of themselves. I alluded to obtaining the Briers from hedgerows and wild places. In that case they ought to be planted where they are intended permanently to remain, and planted too with as much care as if they were Rose trees. Budding standards is a much more pleasant occupation than stooping down and performing the same operation on dwarfs. July is the best month in which to bud Roses. *J. Douglas.*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON*
FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 18, 1885.

| MONTH AND DAY | BAROMETER: Mean Reading, Reduced to Sea-level | BAROMETER: Departure from Average of 18 years | TEMPERATURE OF THE AIR: Highest. | TEMPERATURE OF THE AIR: Lowest. | TEMPERATURE OF THE AIR: Range. | TEMPERATURE OF THE AIR: Mean for the Day | TEMPERATURE OF THE AIR: Departure of Mean from Average of 30 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition.: Dew Point | Hygrometrical Deductions from Glaisher's Tables 7th Edition.: Degree of Humidity. Sat. = 100 | WIND: Average Direction. | RAINFALL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov | In. | In. | ° | ° | ° | ° | ° | | | | In. |
| 12 | 30.02 | +0.23 | 44 | 5 | 41 | 0 | 3 | 5 | 42 | 0 | 0.03 |
| 13 | 29.81 | +0.03 | 48 | 2 | 46 | 5 | 7 | 7 | 14 | 5 | 1.8 |
| 14 | 29.53 | −0.25 | 47 | 5 | 43 | 0 | 4 | 5 | 44 | 3 | 1.8 |
| 15 | 29.58 | +0.21 | 42 | 0 | 32 | 2 | 0 | 8 | 36 | 4 | 5.9 |
| 16 | 30.22 | +0.47 | 42 | 0 | 27 | 5 | 1 | 4 | 5 | 3 | 1 |
| 17 | 30.06 | +0.33 | 49 | 1 | 28 | 5 | 11 | 6 | 33 | 8 | 8 |
| 18 | 29.72 | +0.01 | 40 | 2 | 29 | 0 | 11 | 2 | 33 | 0 | 8 |
| Mean | 29.91 | +0.15 | 43 | 5 | 34 | 5 | 5 | 0 | 0 | 8 | 5 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 91 | S.W. | 0.03 | Nov | 12 | —Very dull day | | | | | |
| 48 | 91 | E.S.E. | 0.00 | — | 13 | —Very dull day | | | | | |
| 47 | 96 | S.W. | 0.14 | — | 14 | —Very dull day; rain in afternoon. | | | | | |
| 42 | 87 | N.W. | 0.00 | — | 15 | —Very fine day and night. | | | | | |
| 42 | 72 | E | 0.03 | — | 16 | —Very fine day and night. | | | | | |
| 49 | 78 | E.N.E. | 0.00 | — | 17 | —Very fine day and night. | | | | | |
| 40 | 83 | E. | 0.02 | — | 18 | —Very fine day and night; lunar halo. | | | | | |
| 43 | 86 | Variable | 0.14 | | | | | | | | |

LONDON: *Atmospheric Pressure.*—During the week ending November 14, the reading of the barometer at the level of the sea decreased from 30.35 inches at the beginning of the week to 30.28 inches by 1 P.M. on the 8th, increased to 30.32 inches by 5 P.M. on the same day, decreased to 30.30 inches by 1 P.M. on the 9th, increased to 30.32 inches by 9 A.M., decreased to 30.31 inches by 1 P.M., increased to 30.32 inches by 5 P.M. on the 10th, decreased to 29.67 inches by 1 P.M. on the 14th, and was 29.70 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.16 inches, being 0.12 inch higher than last week, and 0.19 inch higher than the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 48°.2, on the 13th; on the 11th the highest temperature was 44°.2. The mean of the seven high day temperatures was 46°.

The lowest temperature was 31°.9, on the 8th, on the 14th the lowest temperature was 43°. The mean of the seven low night temperatures was 40°.1.

The greatest range of temperature in one day was 13°.1, on the 8th; the smallest, on the 9th and 12th, was 3°.5. The mean of the seven daily ranges was 5°.9.

The mean temperatures were, on the 8th, 32°.4; on the 9th, 43°; on the 10th, 44°.4; on the 11th, 42°; on the 12th, 42°; on the 13th, 44°.5; and on the 14th, 44°.3; of these the 10th, 13th and 14th were above their averages by 1°, 1°.8 and 1°.8 respectively, the rest were below by 4°.9, 0°.9, 1°.2, and 0°.9 respectively.

The mean temperature of the week was 42°.8, being 1°.3 lower than last week, and 0°.5 below the average of the week.

The highest reading of a thermometer with black-

ened bulb in vacuo placed in the full rays of the sun, was 51°.5, on the 13th. The mean of the seven readings was 47°.4.

The lowest reading of a minimum thermometer placed on grass was 23°.8, on the 8th. The mean of the seven readings was 38°.

*Rain.*—Rain fell on four days, to the amount of 0.29 inch.

ENGLAND: *Temperature.*—During the week ending November 14, the highest temperatures were 55° at Plymouth, 54° at Truro and Leeds; the highest at Cambridge was 45°.8, at Bristol 47°.8, at Bolton, 47°.9. The general mean was 50°.7.

The lowest temperatures were 29° at Cambridge, 30°.6 at Liverpool, 31°.9 at Blackheath; the lowest at Plymouth was 41°.8, at Truro and Leeds 40°. The general mean was 36°.3.

The greatest ranges were 18°.5 at Liverpool, 17° at Sheffield, 16°.8 at Cambridge; the least ranges were 8°.6 at Bristol, 11°.3 at Nottingham, 12° at Sunderland. The general mean was 14°.4.

The mean of the seven high day temperatures was highest at Truro, 52°.4, at Plymouth 51°.3, at Leeds, 48°.5, and was lowest at Bolton, 44°, at Cambridge, 44°.8, at Wolverhampton 45°.6. The general mean was 46°.9.

The mean of the seven low night temperatures was highest at Truro, 45°.4, at Plymouth 44°.3, at Leeds 42°.4; and was lowest at Wolverhampton, 38°.4, at Bolton 38°.5, at Sheffield 38°.8. The general mean was 40°.9.

The mean daily range was greatest at Hull, 8°.4, at Wolverhampton 7°.2, at Truro and Plymouth 7°; and was least at Bristol and Sunderland, 4°.6, at Nottingham 5°. The general mean was 6°.

The mean temperature was highest at Truro, 48°.5, at Plymouth 47°.4, at Leeds 45°; and was lowest at Bolton, 40°.7, at Cambridge 41°.4, at Wolverhampton 41°.5. The general mean was 43°.4.

*Rain.*—The largest falls were 0.49 inch at Sunderland, 0.29 inch at Blackheath, 0.28 inch at Cambridge; the smallest falls were 0.01 inch at Leeds, 0.04 inch at Bradford, and 0.05 inch at Bristol and Preston. The general mean fall was 0.15 inch.

SCOTLAND: *Temperature.*—During the week ending November 14, the highest temperature was 57°.6 at Edinburgh; at Dundee the highest temperature was 50°.9. The general mean was 54°.1.

The lowest temperature in the week was 30°.5, at Glasgow; the lowest temperature at Greenock was 39°. The general mean was 34°.3.

The mean temperature was highest at Greenock, 44°.7; and lowest at Dundee, 42°.5. The general mean was 43°.7.

*Rain.*—The largest fall was 0.17 inch, at Paisley; the smallest fall was 0.07 inch, at Aberdeen. The general mean fall was 0.13 inch.

JAMES GLAISHER, F.R.S.

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SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, November 16, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* was unusually gloomy during the greater part of the period, with a good deal of mist or fog, and in some places drizzling rain. Towards the end of the week, however, the conditions had undergone a change, and, after a general fall of rain, fine bright weather had become prevalent.

The *temperature* has been about equal to the mean in "England, S.," but below in all other districts, the deficit varying from 1° to 2° in most parts of the kingdom to 3° in "England, N.W.," and 4° in "Scotland, E." The maxima, which were generally registered on the 13th, varied between 48° and 54°. The minima were recorded on the 16th, when the thermometer fell to 20° in "Scotland, E.," "England, N.W.," and "Ireland, N.," and to between 22° and 30° in all other districts except the "Channel Islands," where the lowest reading was 37.° During the earlier part of the week the diurnal range was extremely small, that at Oxford on the 12th being only half a degree.

*Rainfall* has been considerably less than the mean in all districts. *Bright sunshine* was altogether absent in most parts of the kingdom till the period drew towards its close, when a rather high percentage was recorded. The percentage of the possible duration for the week ranged from 9 in "Scotland, N." and "England, N.E." to 25 in Ireland, and 34 in the Channel Islands.

*Depressions observed.*—The general distribution of pressure during this period was anticyclonic, and the only depression which appeared in our neighbourhood was a rather large one which travelled east-north-eastwards over the northern part of our area during the 13th. Until the approach of this disturbance light easterly airs were experienced in the south and east, and moderate southerly breezes in the west and north, but under its influence the wind over our islands became south-westerly to westerly, and subsequently moderate from the northward. Owing to the rapid recovery of pressure which took place in the rear of the depression the distribution at the close of the period was again anticyclonic, and on our extreme south-west coasts a moderate to strong easterly gale prevailed.

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# Obituary.

ALEXANDER FORSYTH. — Last week we briefly recorded the decease of Mr. Alexander Forsyth, who had reached a good old age, having exceeded the allotted three score and ten years. For some time past he had been in failing health. Thus has passed away another of the practical gardeners of the old school; one, moreover, who had been a very successful practitioner in his day, having occupied with credit some prominent positions in the gardening world, as well as gained for himself an honourable name in connection with the literature of horticulture. His gardening fame carries us back some few decades, for between forty and fifty years ago he was appointed to the charge of the gardens at Alderley Park, Cheshire, the seat of Lord Stanley of Alderley. Subsequently he became gardener to the Earl of Shrewsbury, at his princely establishment—Alton Towers, Staffordshire. Besides filling these and other situations of importance, Mr. Forsyth had been a constant and frequent contributor to the pages of this journal from its commencement up to a very recent period, and his name is appended to many a cultural essay both in *Loudon's Gardeners' Magazine* and in the later volumes of the *Florist and Pomologist*. Among other topics of interest contributed to our pages we may mention his persistent advocacy of Holly-leaf tea, and his strong recommendation of the compact undeveloped inflorescence of the Rhubarb plant as an esculent, "the pouches of unopened flowers," he argued, "bearing the same relation to the leaves of Rhubarb that Cauliflowers do to Cabbage leaves." For this purpose the Rhubarb was directed to be grown in rich ground, so to get large masses of tender flower-buds, the removal of which would, of course, be beneficial to plants grown also for a supply of the leaf-stalks. Mr. Forsyth died on the 8th inst., in his seventy-sixth year. Of late years Mr. Forsyth resided at Salford, near Manchester, where we believe he held some official position.

MR. SAMUEL WALTERS. — The death of this gentleman, an old inhabitant of Hilperton, Wiltshire, occurred on Wednesday, the 11th inst. He was for many years an ardent lover of flowers, and when quite young abandoned the trade in which he had been brought up, and devoted himself entirely to the pursuits of a florist. Tulips, Ranunculuses, Auriculas, Polyanthuses, Dahlias, and other flowers, were grown by him with great success, the Dahlia remaining to the last one of his prime favourites. He will be remembered as the raiser of Dahlia Beauty of Hilperton, some twenty-five or thirty years ago. He established at Hilperton a florist's business as far back as 1830, in connection with a seed business carried on there since 1810. For about half a century he was one of the most successful exhibitors in the West of England, and for a good portion of time in London also. Owing to his sight becoming greatly impaired he gave up exhibiting some ten years ago, yet to the end he continued to derive the greatest pleasure from the cultivation of flowers. He was a remarkable illustration of a man diligent in business, and from his unvarying uprightness he gained the esteem of all who had dealings with him. In May last he experienced a great bereavement in the loss of his wife, and he was frequently heard to say he should not long survive her. He died at a good age, after a short illness.

## Answers to Correspondents.

*** OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARDCHRON, LONDON," GARDCHRON *being written as one word. Telegrams (but not letters) thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

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ADDENDA: NATIONAL CHRYSANTHEMUM SOCIETY, November 11 and 12. The following Certificates were awarded:—To Messrs. J. Veitch & Sons, for Japanese variety L'Adorable, a bronze-carmine variety of fine quality; to Mr. Davis, Camberwell, for the same kind and Jupiter; to Mr. Mardlin, for incurved Yellow Globe, and for a hybrid pompon, Mr. Mardlin, large full flower of a pleasing character; to Messrs. Cannell & Sons, for Japanese L'Ebouriffe; to Messrs. J. Laing, for Laing's Anemone; and to Mr. Sullivan, for Japanese Pietro Diaz.

ADDRESS: *W. C.* 89, Long Acre, London, W.C.

BOOK: T. Baines' *Greenhouse and Stove Plants.* J. Murray, 50A, Albemarle Street, Piccadilly, S.W. We do not know what is the cost of the book.

BUXTON GRAVEL.—I should recommend *R. L.* to spread Malmesbury gravel over his Buxton gravel. I have seen this done, and it makes a first-rate job, as it will set quite hard, would be far cheaper than cement, and would look a great deal better, the gravel being of a bright yellow colour, and free from earthy matter, it being entirely composed of grit, and it does not tear up after a thaw or heavy rain. I can recommend this gravel with confidence, and I am sure Mr. Fraser, nurseryman, Malmesbury, would be pleased to send him a sample. *Argus.*

CELINE FORESTIER: *H. T. C.* We spoke from our own personal experience. We have it against a west wall on a cold soil. It has been nearly killed outright in severe winters, and only in hot summers does it give any bloom worth speaking of. ED.

CORRECTION: ROYAL HORTICULTURAL SOCIETY.—In our report of the last meeting the names of the exhibitors of fruits were, by an inadvertency, given instead of those of the members of the Fruit Committee.

INSECTS: *A. D. W.* As you have cut off the tops of the shoots of your Corsican Pines which contained the insects which have injured them, we cannot determine whether they have been attacked by the Pine weevil (Hylurgus piniperda) or by one of the Pine moths (Tortrix Turionana or resinana). The only remedy is to cut off and burn the affected parts which contain the insects. *I. O. W.*

NAMES OF FRUITS: *W. E. G., Junior Carlton Club. Pears, small:* 1, decayed; *larger:* 2, Beurré Clairgeau. *Apples, larger red:* 1, Mère de Ménage; *smaller green:* 2, striped Beefing.—*Ayr.* 1, Vicar of Winkfield; 2, Comte de Flandres.—*J. Bell.* 1, unrecognised—very pretty; 3, Autumn Pearmain; 4, Blenheim Orange; 5, Beauty of Kent; 6, Scorpion.—*T. W. R.* 1, Durandeau; 2, Doyenné Gris; 4, Bellissime d'Hiver; 6, Passe Colmar; 7, Bacon's Incomparable; 9, Colmar d'Aremberg; 10, Duchesse d'Angoulême; 11, Caillac; 12, Brown Beurré; 13, Marie Louise; 15, Glou Morceau.—*J. U.* 1, Emperor Alexander; 2, Golden Noble; 3, Cat's-head; 4, Yorkshire Greening; 5, Downton Pippin.—*T. Hewitt & Co.* 1, unrecognised; 2, Wadhurst Pippin; 3, Fearn's Pippin.—*W. H.* 2, Cellini; 3, Mère de Ménage; 4, Rymer; 6, Allriston.—*J. C. B.* 1, Maréchal de la Cour; 2, Passe Crassane; 3, Beurré Bosc; 4, Duchesse d'Angoulême; 5, Passe Colmar; 7, Beurré Rance; 8, Glou Morceau; Doyenné Boussoch and Beurré Superfin—numbers to these missing.—*A. L. F.* 1, Wyken; 7, Fearn's Pippin; 9, Court of Wick; 10 and 12, French Crab.—*A. M. M. Apple* Manx Codlin. *Pears:* 1, Althorp Crassane; 2, Gansell's Bergamot; 3, Beurré Bachelier; 4, Passe Colmar; 5, Knight's Monarch.—*D. I.* 1, Chaumontelle; 2, Winter Crassane; 3, Beurré d'Aremberg; 4, Marie Louise.—*R. B. S.* 1, Flemish Beauty; 2, Old Crassane; 3, Tibbet's Pearmain.

NAMES OF PLANTS: *Whiteberry.* 1, Ligustrum ovalifolium; 2, Lithospermum officinale. The name refers to the stony seed: it is not a gall.—*Barr & Son.* Silene Schafta.—*Old Subscriber.* Specimens too incomplete. Asters cannot be named with safety from little pieces cut off the top. 1, probably diffusus; 2, Novæ-Angliæ; 4, Novi-Belgii; 8, dumosus. The other three we dare not venture upon.—*W. H.* 1, Eria alba; 2, Eria flaccida; 3, Brassia brachiata; 4, Catasetum Wailsei.

NEW PEAR: *V. C. & Co.* There can be no doubt as to the cropping qualities of the variety in America, but we cannot say anything in favour of its texture, which is of the coarsest, or of its flavour, which is much inferior to that of several of our autumn kinds. We have already far too many inferior kinds.

ORCHID BLOOM: *Woolton.* Please send a better bloom and a leaf next week.

PHYSALIS ALKEKENGI: *W. Northfield.* It is a hardy perennial, which may be sown in the open ground at the end of March, or in pots under glass somewhat earlier, and when big enough transplanted into the open border. It seeds freely, and when once obtained is rarely lost, self-sown seeds germinating every spring. It flowers from early sown plants the first season. The botanical name of the Sweet Yam is Batatas edulis. It is not a Solanum.

SOOLY QUA: *W. Y. D.* Your specimen may be true to name. It is a species of Luffa, the fibrous tissue of which is sometimes used, instead of sponge, for baths.

THE GARDENER'S ASSISTANT: *W. B.* No scale is given.

WOODLICE: *G. G.* Trap them with little pots filled lightly with hay, turning them out into hot water every morning at daylight. Keep toads about the garden.

## CATALOGUES RECEIVED.

WOOD & INGRAM, Huntingdon—General Catalogue.
F. & A. DICKSON & SONS, Chester — Forest and Ornamental Trees.
MARTIN GRASHOFF, Quedlinburg, Germany—Seeds.
JAMES COCKER & SONS, Aberdeen—Trees.
SAMUEL BIDE, Farnham—Trees.
FISHER, SON & SIBRAY, Handsworth, Sheffield—Trees.
JAMES BOYD & SONS, Paisley—Illustrated Horticultural Buildings and Heating.
F. C. HEINEMANN, Erfurt—Novelties in Plants for 1886.
STANDARD MAFUFACTURING COMPANY, Strand Arcade, Derby—Tree Pruners.

COMMUNICATIONS RECEIVED:—Hampstead.—H. G. Rchb. f. —W. B.—J. R.—H. H. D'O.—T. M.—J. C. S.—J. A.—J. F. T. D.—W. Y. D.—S. L.—M. D.—V. Fans (yes, please).—F. Sander & Co.—Haage & Schmidt.—Dr. Kranzlin.—G. B. W.—Canon E. (we regret we cannot help you).—F. C. Heinemann.—N. E. B.—F. W. B.—Mrs. E. V. B.—J. F.—J. D.—C. A. A. C.—W. C.—B.—J. R. J.—J. Earl (next week).

# Markets.

*COVENT GARDEN, November* 19.

OUR market for best goods is very depressed, owing in a large manner to the coming elections; Grapes especially being affected. Prices all round subject to offers. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 6– | 3 0 | Pine-apples, Eng. lb. | 2 0– | 4 .. |
| Grapes, per lb. | .. 2 6– | 5 6 | — St. Michael, each | 2 6– | 5 0 |
| Kent Cobs, 100 lb. | 22 6–25 0 | | Pears, per dozen | .. 0 9– | 1 3 |
| Lemons, per case | ..15 0–30 0 | | — per ½-sieve | .. 1 6– | 3 0 |
| Melons, each | .. 0 6– | 1 6 | | | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, per doz. | 1 0– | .. | Mushrooms, punnet | 1 0– | 1 6 |
| Beans, Kidney, lb. | 1 0– | .. | Mustard and Cress, do. | 0 4– | .. |
| Beet, red, per dozen | 1 0– | 2 0 | Onions, per bunch | .. 0 6– | .. |
| Broccoli, bundle | .. 0 9– | 1 0 | Parsley, dozen bunch | 2 0– | 3 0 |
| Cabbages, per dozen | 1 6– | .. | Parsnips, per dozen | 1 0– | .. |
| Capsicums, per 100 | .. 1 6– | 2 0 | Potatos, per cwt. | .. 4 0– | 5 0 |
| Carrots, per bunch | .. 0 6– | .. | ,, kidney, per cwt | 4 0– | 5 0 |
| Cauliflowers, per doz. | 2 0– | 3 0 | Salsafy, per bundle | 1 0– | .. |
| Celery, per bundle | 1 6– | 2 0 | Scorzonera, p. bundle | 1 0– | .. |
| Coleworts, doz bunch | 2 0– | 4 0 | Seakale, punnet | .. 2 0– | .. |
| Cucumbers, each | .. 1 0– | 1 6 | Shallots, per pound | .. 0 3– | 0 6 |
| Endive, per dozen | 1 0– | 2 0 | Spinach, per bushel | 2 0– | 4 0 |
| Herbs, per bunch | .. 0 2– | .. | Sprouts, per pound | 0 3– | .. |
| Leeks, per bunch | .. 0 3– | 0 4 | Tomatos, per lb. | .. 0 6– | 1 0 |
| Lettuce, per dozen | 1 0– | 1 6 | Turnips, bunch | .. 0 6– | .. |

POTATOS.—Magnum Bonums, bad trade, 50s. to 80s.; Regents, 60s. to 80s. per ton; German Reds, 2s. to 2s. 6d. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0– | 18 0 | Evergreens, in var., per dozen | .. 6 0– | 24 0 |
| Arbo. vitæ (golden), per dozen | .. 6 0– | 18 0 | Ficus elastica, each | 1 6– | 7 0 |
| — (common), dozen | 6 0– | 12 0 | Ferns, in variety, per dozen | .. 4 0– | 18 0 |
| Arum Lilies, dozen | 9 0– | 18 0 | Foliage Plants, various, each | 2 0– | 10 0 |
| Begonias, per dozen | 6 0– | 12 0 | Hyacinths, Rom., pot | 1 0– | 1 3 |
| Bouvardia, doz | 4 0– | 18 0 | Marguerite Daisy, per dozen | .. 8 0– | 12 0 |
| Cineraria, per doz. | 10 0– | 12 0 | Myrtles, per dozen | 6 0– | 12 0 |
| Chrysanth., per doz. | 9 0– | 18 0 | Palms in var., each | 2 6– | 21 0 |
| Cyperus, per dozen | 4 0– | 12 0 | Pelargoniums, scarlet, per dozen | .. 6 0– | 9 0 |
| Dracæna terminalis, per dozen | .. 30 0– | 60 0 | Poinsettia, per dozen | 12 0– | 18 0 |
| — viridis, per doz. | 12 0– | 24 0 | | | |
| Erica, various, doz. | 12 0– | 21 0 | | | |
| Euonymus, in var., per dozen | .. 6 0– | 18 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0– | 4 0 | Marguerites, 12 bun. | 2 0– | 4 0 |
| Arum Lilies, 12 blms. | 6 0– | 8 0 | Mignonette, 12 bun. | 1 6– | 3 0 |
| Azalea, 12 sprays | 1 0– | 2 0 | Pelargoniums, per 12 trusses | .. 1 0– | 1 6 |
| Bouvardias, per bun. | 0 6– | 1 0 | — scarlet, 12 trusses | 0 9– | 1 0 |
| Camellias, 12 blms. | 2 0– | 6 0 | Poinsettia, 12 blms. | 4 0– | 8 0 |
| Carnations, 12 blms | 1 0– | 3 0 | Roses (indoor), per dozen | .. 1 0– | 3 0 |
| Chrysanth., 12 blms. | 0 6– | 4 0 | — 12 bunches | .. 6 0– | 12 0 |
| — 12 bunches | 4 0– | 12 0 | Stephanotis, 12 spr. | 5 0– | 6 0 |
| Eucharis, per dozen | 4 0– | 6 0 | Tropæolum, 12 bun. | 2 0– | 3 0 |
| Gardenias, 12 blooms | 4 0– | 6 0 | Tuberoses, 12 blms. | 1 0– | 1 6 |
| Hyacinths, Rom., 12 sprays | .. 1 6– | 2 0 | Violets, 12 bunches | 1 0– | 1 3 |
| Lapageria, white, 12 blooms | .. 2 0– | 3 0 | — Czar, Fr., bunch | 1 0– | 1 6 |
| — red, 12 blooms | .. 1 0– | 2 0 | — Parme, Fr., bun. | 4 0– | 5 0 |
| Lil. longifl., 12 blms. | 6 0– | 8 0 | | | |

## SEEDS.

LONDON: *Nov.* 18.—All descriptions of Clover seed exhibit great firmness, but the demand is small. No supply of red seed can be expected this season, either from the United States or from Canada. Trefoil seed is now obtainable at extremely low rates. For Canary seed more money is asked, but Hemp seed continues unusually cheap. The colder weather, as might have been expected, has somewhat hardened the values of boiling Peas and Haricot Beans. Feeding Linseed is steady. In other articles there is no quotable change. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

## CORN.

MARK LANE: *Nov.* 16.—Rather a firmer tone was evidenced in the Wheat market, and buyers showed a little more disposition to operate at previous rates, but not at any advance. Flour moved more slowly than Wheat, but maintained steady value. Malting Barley was without quotable change, but grinding sorts were the turn dearer. Beans and Peas moved off steadily at unaltered rates. Maize was 6*d.* higher on the week. Oats were quite 6*d.* above the rates of Monday last.

*Nov.* 18.—Business generally opened with a stronger tone, especially for feeding stuffs; but the want of demand was still unrelieved, and the result of the day's business was disappointing, the few small sales leaving prices all round without quotable improvement.

*Average prices* of corn for the week ending Nov. 14: —Wheat, 31*s.*; Barley, 30*s.* 4*d.*; Oats, 19*s.* For the corresponding period last year:—Wheat, 31*s.* 5*d.*; Barley, 31*s.* 10*d.*; Oats, 19*s.* 1*d.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Nov.* 18.—Good supply of all kinds, prices moderate, demand fair. Quotations:—Cabbages, 3*s.* to 6*s.*, and Apples, 2*s.* 6*d.* to 5*s.* per bushel; Cabbages, 2*s.* 6*d.* to 4*s.*, and Savoys, 2*s.* to 4*s.* per tally; Celery, 7½*d.* to 10*s.* per dozen bundles; Brussels Sprouts, 4*s.* to 5*s.* per sieve; bunch greens, 4*s.* to 5*s.* per dozen bunches; Turnips, 3*s.* to 4*s.* do.; Carrots, 2*s.* 6*d.* to 3*s.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Beetroots, 2*s.* 6*d.* to 3*s.* per dozen; Onions, 4*s.* to 5*s.* per cwt.; Carrots, in sacks, 32*s.* to 50*s.* per ton; white Turnips, 45*s.* to 60*s.* do.; Swede do., 30*s.* to 32*s.* 6*d.* do.; and Mangels, 22*s.* 6*d.* to 25*s.* do.

STRATFORD: *Nov.* 17.—There was a good supply, and a fair trade was transacted at the following prices:—Cabbages, 3*s.* to 6*s.*, per tally; Savoys, 4*s.* to 10*s.* do.; Cauliflowers, 8*s.* to 10*s.* do.; greens, bunch, 3*s.* to 4*s.* per dozen; Sprouts, 4*s.* to 6*s.* per sieve; Mangels, 20*s.* to 21*s.* per ton; Swedes, 25*s.* to 27*s.* do.; Onions, 70*s.* to 100*s.* do.; Turnips, 50*s.* to 60*s.* per ton; do., bunch, 3*s.* to 4*s.* per dozen; Apples, best, 2*s.* to 5*s.* per bushel; do., common, 4*s.* to 5*s.* per cwt.; Carrots, cattle feeding, 30*s.* to 35*s.* per ton; do., household, 40*s.* to 45*s.* do.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 17.—Fair supplies and slow trade. Prices:—Regents, 70*s.* to 100*s.*; Magnum Bonums, 50*s.* to 85*s.*; Champions, 60*s.* to 80*s.*; Early Roses, 60*s.* to 85*s.*; Belgian kidneys, 70*s.* to 90*s.*; German reds, 60*s.* to 70*s.*; Snowflakes, 50*s.* to 60*s.* per ton.

COLUMBIA (East London): *Nov.* 18.—Demand fair. Magnums, 55*s.* to 75*s.*; Regents, 60*s.* to 70*s.*; Victorias, 55*s.* to 65*s.*; Champions, 50*s.* to 58*s.*; Early Roses, 60*s.* to 65*s.*; Heros, 70*s.* to 80*s.*; and Beauty of Hebron, 70*s.* to 80*s.* per ton.

STRATFORD: *Nov.* 17.—Good supply and fair trade. Magnums, 50*s.* to 75*s.*; Regents, 65*s.* to 70*s.*; Champions, 50*s.* to 60*s.*; and Reading Hero, 70*s.* to 80*s.* per ton.

*Imports.*—The imports into London last week consisted of 325 bags 713 sacks from Stettin, 2852 bags 5 sacks from Hamburg, 2 bags from Bremen, 81 bags from Rotterdam, 2 bags from Antwerp, and 1170 bags from Ghent.

## HAY.

WHITECHAPEL: *Nov.* 17.—Trade dull, with good supplies, and a decidedly drooping tendency in the price of Clover. The tone for hay was firm for best qualities. A more liberal supply of straw, and the top quotation barely supported. Quotations:—Clover, prime, 90*s.* to 105*s.*; inferior, 60*s.* to 80*s.* Hay, prime, 70*s.* to 90*s.*; inferior 50*s.* to 67*s.*; and straw, 25*s.* to 38*s.* per load.

CUMBERLAND (Regent's Park): *Nov.* 17.—A large supply, with better demand. Prices:—Clover, best, 95*s.* to 102*s.* 6*d.*; second, 60*s.* to 90*s.* Hay, best, 75*s.* to 87*s.* 6*d.*; second, 50*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

## CATTLE.

METROPOLITAN: *Nov.* 16.—Prime cattle were short this morning, and cleared more readily at rates against buyers, though hardly apparent in quotations. Middling qualities did not improve. Sheep sold more freely at late rates for wethers, and occasionally slightly better prices for ewes. No change transpired in the calf and pig trade. Quotations:—Beasts, 3*s.* 6*d.* to 4*s.* 5*d.*, and 4*s.* 8*d.* to 5*s.* 4*d.*; calves, 2*s.* 8*d.* to 4*s.* 10*d.*; sheep, 3*s.* 10*d.* to 4*s.* 4*d.*, and 4*s.* 8*d.* to 5*s.* 6*d.*; pigs, 4*s.* to 4*s.* 6*d.*

*Nov.* 19.—Quietness was characteristic of the trade. Beasts were a slow sale at barely Monday's prices, except for fine qualities, which were scarce. Prime sheep were fairly steady, other kinds weak. Calves were steady, and pigs dull.

## COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 15*s.* 6*d.*; Tunstall, 15*s.* 6*d.*; Lambton, 17*s.*; Wear, 15*s.* 6*d.*


GREENHOUSE GLASS, 1½*d.* per foot, in boxes. Suitable for Frames, Conservatories, &c. PATENT NON-POISONOUS PAINT for Greenhouses, 6*d.* per lb., or 42*s.* per cwt.—B. LAMB AND CO., Glass, Lead, Paint, and Varnish Merchants, Builders, and Decorators, Sundrymen, 8, Bucknall Street, London, W.C.

PRUNING MADE SAFE AND EASY.




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Lengths from 2 to 12 feet. Prices from 4*s.* 6*d.* to 10*s.* 6*d.*

SAWS for cutting large branches; will fit all our Pruners. Prices—Curved, 3*s.*; straight, 2*s.* These and extra KNIVES (1*s.* to 1*s.* 6*d.*) post-free. Patent Solid Steel PRUNING HOOKS and BILLS; also TROWELS, FORKS, RAKES, and HOES, in active progress, and will be strongest and cheapest ever sold.

Price Lists of the STANDARD MANUFACTURING Patentees and General Machinists, Strand Arcade, Derby; and Sold by the Principal Ironmongers and Seedsmen.

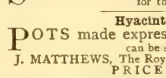
Rhubarb and Seakale Forcing.

STRONG WELL-MADE POTS for the above.

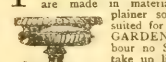
Hyacinths in Pots.

POTS made expressly for HYACINTHS can be supplied by J. MATTHEWS, The Royal Pottery, Weston-super-Mare. PRICE LIST free.

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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.



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_____ 1885.

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G. C., Nov. 21, 1885.

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| 9 „ ... | 0 | 5 | 6 | 20 „ ... | 0 | 11 | 0 |
| 10 „ ... | 0 | 6 | 0 | 21 „ ... | 0 | 11 | 6 |
| 11 „ ... | 0 | 6 | 6 | 22 „ ... | 0 | 12 | 0 |
| 12 „ ... | 0 | 7 | 0 | 23 „ ... | 0 | 12 | 6 |
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HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
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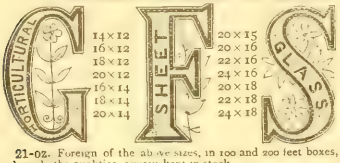
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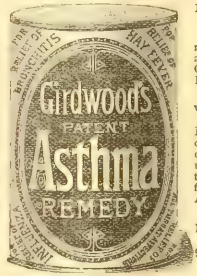
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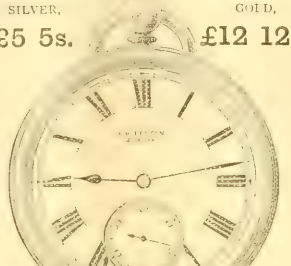
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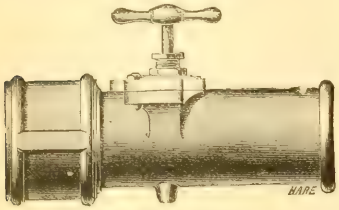
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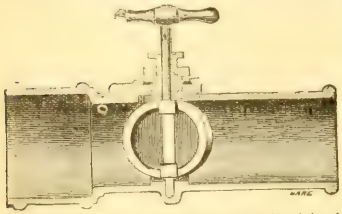


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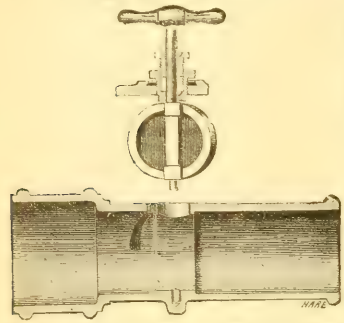
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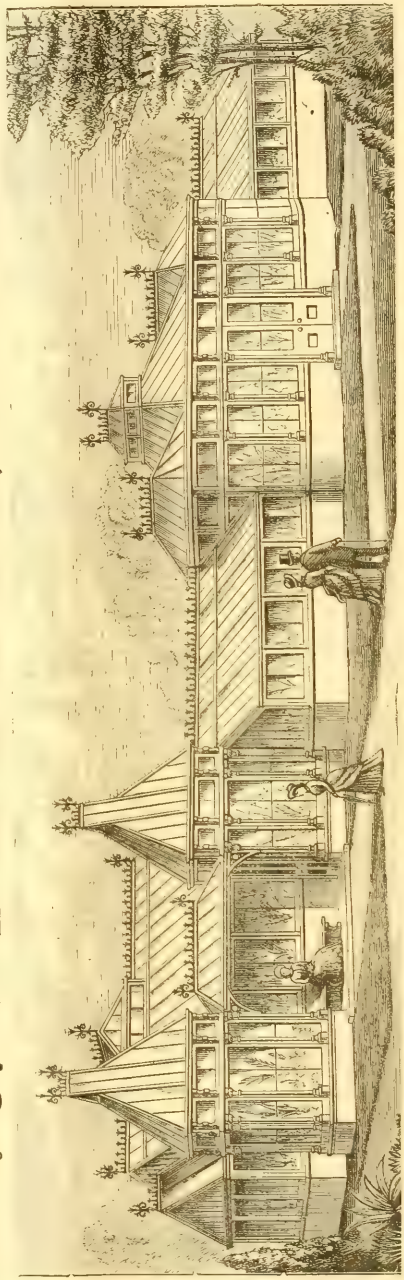
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BRANCHPIPES, SPREADERS, ROSES, &c.

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THE

# GARDENERS' CHRONICLE.

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## GARDENERS' CHRONICLE OFFICE

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*NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should be made payable at DRURY LANE.*


KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.
The TENTH ANNUAL EXHIBITION will be held on TUESDAY and WEDNESDAY, November 9 and 10, 1886. Schedules are in course of preparation, and will be forwarded when ready on application to
T. JACKSON, Hon. Sec.
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THOMAS LAXTON, Seed and Novelty Grower, Bedford.

DOUBLE TUBEROSES, extra fine, 2s. per dozen; LILIUM AURATUM, splendid Roots, 4s. and 6s. per dozen; LILY of the VALLEY, German Crowns, 5s. 6d. per 100; SPIRÆA JAPONICA, 3s. per dozen; AZALEAS and CAMELLIAS, from 18s. per dozen. Large quantities at cheaper rates. Trade price on application.
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Good strong, 3 years plants, 6s. per dozen.
Good strong, 2 years plants, 4s. per dozen.
This variety originated in Northumberland. The most productive Gooseberry grown; fruit large, when ripe dark red, hardy, excellent flavour.
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A. M. C. JONGKINDT CONINCK begs to offer strong 1-year Seedlings of this beautiful Hardy Rose-coloured WATER-LILY. Price on application.
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R. OWEN is offering strong flowering plants (DELAUX) varieties for 1886, 21s. per dozen; Cuttings, rooted, 10s. 6d. per dozen; twelve varieties for 1885; Green Plants, 10s. 6d. per dozen; Rooted Cuttings, 3s. 6d.; Cuttings, 5s. Best Exhibition and Decorative sorts—Cuttings, 12. 6d. per dozen, two dozen, 2s. 6d. Catalogue 6d., free to purchasers.
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PAUL'S NURSERIES, Waltham Cross, Herts (entrance from Waltham Cross Station). — Purchasers of ROSES, FRUIT TREES, ORNAMENTAL TREES EVERGREENS, BULBS, &c., are invited, before purchasing, to inspect the stock at the Waltham Cross Nurseries, half an hour from London, Great Eastern Railway. Priced CATALOGUES free.
WM. PAUL and SON, Waltham Cross.

Special Offer of
TWO HUNDRED THOUSAND DWARF ROSES, on Manetti, the best plants money can buy, 25s. per 100, 50 for 13s., 12 for 3s. ASPARAGUS, 2-yr., 2s. per 100; 3-yr., 3s. per 100; 4-yr., 4s. per 100. MANETTI STOCKS, fine, 4s. per 100 25s. per 1000. Cash with orders. Packing free.
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WANTED, TO EXCHANGE, tender PALMS, 5 feet to 8 feet, and other FOLIAGE PLANTS, for One good Specimen ORANGE TREE, about 6 feet high, in fruit, and Six large AGAPANTHUS UMBELLATUS, in pots or tubs.
W. SWANBOROUGH, Glasslough, Co. Monaghan.

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TENDERS WANTED for Supplying and Planting about 250 WESTERN PLANES (Platanus occidentalis) at Finchley. The Plants not to be less than 12 feet high. Specifications and Forms of Tender may be obtained on application to FRANCIS RAVENSCROFT, Birkbeck Land Society, 29, Southampton Buildings, Chancery Lane, W.C.

WILLIAM DENMAN, SALESMAN and HORTICULTURAL AGENT, Covent Garden, W.C., has a large demand for CHRYSANTHEMUMS, EUCHARIS, CALLAS, CAMELLIAS, and other CUT FLOWERS.
Large quantity of strong flowering LILY of the VALLEY CROWNS on hand. Low price on application.

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SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM, ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

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WISE and RIDES, Fruit and Flower Salesmen, Fruit Market, and 101, Flower Market, Covent Garden, London, W.C.
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It is said that Conservatives have no Policy. Being a thorough one I declare my Policy to be to deal honestly, to sell all I can, and to give general satisfaction. Send for CATALOGUE.
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PAUL and SON, The "Old" Nurseries, Cheshunt.
The great all-round Hardy Plant Nursery.

CROUX ET FILS, NURSERYMEN, Vallée d'Aulnay, à Chatenay, Seine.—50 Hectares.
GREAT SPECIALTY—FRUIT TREES, carefully trained, very strong, in full bearing.
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Grand Christmas Trees in great variety.
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LARCH FIRS, 2 to 3 feet, 15s. per 1000.
LARCH FIRS, 3 to 4 feet, 20s. per 1000.
All well-rooted with good roots.
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The Grand New Regal Pelargonium.
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J. LEWIS and SON, Newtown Nurseries, Malvern

DOUBLE AFRICAN TUBEROSES.—Extra fine, 10s. per 100, £4 per 1000; extra large, finest ever imported, 12s. 6d. per 100.
AMERICAN PEARL, ditto, 12s. per 100, £5 per 1000.
LILIUM AURATUM, extra large firm bulbs, very low
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LARCH, 1-yr. 1-yr., 5s. 6d.; 1 to 1½ foot, 10s. 6d.; 1½ to 2 feet, 15s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s. 4 to 5 feet, 30s. 6d. per 1000. Nett cash. Ground wanted. Trade prices on application. Apply at once.
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CHRISTMAS ROSES.
HELLEBORUS NIGER ANGUSTIFOLIUS, "Brockhurst" variety, pure white, very free, good grower, grand for Forcing and the best of all the Christmas Roses. Strong clumps, 12. 6d., 2s., and 2s. 6d. each; 18s., 24s., and 30s. per dozen.
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PEARS—PEARS—PEARS.—PYRAMIDS, of the finest varieties, 6s., 9s., 12s. per dozen; TRAINED TREES, 12s., 15s., 18s. per dozen.
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WILLIAM THE FIRST,
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All harvested without rain.
Price 10s. per Bushel. Special quotations for 40 Bushels and upwards. Apply,
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H. AND F. SHARPE have to offer fine samples of WINDSOR and LONG-POD BEANS, and will be pleased to submit samples and prices on application
Seed Growing Establishment, Wisbech.

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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, first-class BULBS, received direct from farms in Holland, lotted to suit all buyers. Sales commence at half-past 12 o'Clock, and finishing generally at half-past 4 o'Clock.

Catalogues sent on application.

**Wednesday Next.**—(Sale No. 7031).

FIRST-CLASS ROSES, GREENHOUSE PLANTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 2, at half-past 12 o'Clock precisely, a great variety of first-class Standard and Dwarf ROSES, from well-known French and English growers. STOVE and GREENHOUSE PLANTS, BORDER PLANTS, several hundred lots of DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7032)

5000 LILIUM AURATUM, &c., from Japan.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 3, an importation of 5000 splendid Bulbs of LILIUM AURATUM, and a quantity of another LILY, believed to be L. tigrinum Fortunei, just received from Japan in very fine condition.

On view morning of Sale, and Catalogues had.

**Thursday Next**—(Sale No. 7032)

IMPORTED AND ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 3, at half-past 12 o'Clock precisely, a fine importation of ODONTOGLOSSUM CRISPUM, ALEXANDRÆ of the very best type, in fine masses and good condition; also ESTABLISHED ORCHIDS, including Masdevallias of sorts, Odontoglots, Barkerias, &c., by order of Messrs. Shuttleworth, Carder & Co.; also thirty fine plants of CATTLEYA VELUTINA (true), fully semi-established VANDAS, hardy CYPRIPEDIUMS, &c.

On view morning of Sale, and Catalogues had.

**Dutch Bulbs.—Monday, Thursday, & Saturday Next.**

GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, THURSDAY, and SATURDAY NEXT, at half-past 11 o'Clock precisely each day, about 800 Lots, comprising thousands of Double and Single HYACINTHS, TULIPS, NARCISSUS, CROCUS, and other BULBS from Holland, in excellent quality, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

**Important Sale of Choice Double Camellias, Azalea** INDICA, and other GREENHOUSE PLANTS, 400 fine Standard and other ROSES, selected FRUIT TREES, hardy CONIFERÆ SHRUBS, AMERICAN PLANTS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, December 1, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

**Wednesday Next.**

A consignment of AZALEAS, PALMS, LAURUSTINUS, and AZALEA MOLLIS, from Belgium; imported SPIRÆA JAPONICA, well grown; FERNS and DECORATIVE PLANTS, and 700 Standard and Dwarf ROSES of the best named sorts, from English Nurseries; LILY of the VALLEY crowns, a choice assortment of Hardy English-grown LILIES and BULBS, CHRISTMAS ROSES, ACHIMENES, NARCISSUS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, December 2, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Cranston's Nurseries, King's Acre, Hereford.**

POSTPONED to WEDNESDAY and THURSDAY NEXT, Dec. 2 and 3 (instead of Dec. 1 and 2, as advertised last week).

Important Two Days' Sale of unusually well-grown NURSERY STOCK, the whole of which is in excellent condition for removal, having recently been transplanted.

MESSRS. PROTHEROE AND MORRIS are instructed by The Cranston Nursery and Seed Company, Limited (who are requiring the ground for the extension of the cultivation of Roses, a specialty of their establishment), to SELL by AUCTION, on the Premises, Cranston's Nurseries, King's Acre, Hereford, adjoining the Railway Station, on WEDNESDAY and THURSDAY NEXT, December 2 and 3, at 12 o'Clock precisely each day, several Acres of first-class NURSERY STOCK, carefully grown, and in capital condition for removal, comprising 10,000 Standard, Pyramid, and Dwarf-trained Fruit Trees; splendid Specimen Conifers, Ornamental and Deciduous Trees and Shrubs in great quantity, Large Limes, Poplars, Chestnuts, and other Standard Trees; 1200 Portugal Laurels, Laurels of sorts, 200,000 Larch Firs, 3 to 6 feet; 20,000 Scotch Firs, 3½ to 6 feet; Thorn Quicks, thousands of Spanish Chestnuts, 4 to 6 feet; and other Stock.

May now be viewed. Catalogues may be had on the Premise, at the Seed Warehouse, Broad Street, Hereford; or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Conveyances will meet the morning Trains at Barr's Court and Barton Stations to take intending purchasers to the Nurseries.

**Friday Next.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 4, at half-past 12 o'Clock precisely, a splendid importation of ODONTOGLOSSUM ALEXANDRÆ, MASDEVALLIAS in variety, ODONTOGLOSSUM GRANDE, in large masses; several fine TRICHOPILIAS, several ONCIDIUMS from Central America, and many other ORCHIDS.

On view morning of Sale, and Catalogues had.

**Friday Next.**

KENTIA SEEDS.—Just received, 30,000 to 40,000 SEEDS of KENTIA BELMOREANA and K. FORSTERIANA, co lected in Lord Howe's Island.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 4, at half-past 12 o'Clock precisely, 30,000 to 40,000 KENTIA SEEDS, as above.

On view morning of Sale, and Catalogues had.

**Coldharbour Nursery, 245, Coldharbour Lane,** BRIXTON, S.W., within one minute's walk of Loughborough Junction Station, L. C. and D. Railway, and only three minutes' walk from Loughborough Park Station, on the South London Line.

MESSRS. PEED AND GREAVES are instructed by Messrs. Woollett & Son to SELL by AUCTION, on the Premises, Coldharbour Nursery (in consequence of part of the ground being required for building purposes), on MONDAY, November 30, at 11 o'Clock precisely, well-grown NURSERY STOCK, comprising 8000 Forest Trees and Shrubs, 500 Fruit Trees, 200 standard and dwarf Roses, 2000 Rhododendrons, 2000 Euonymus, 4000 flowering and other Border Shrubs, 2000 Greenhouse Plants, consisting of specimen Camellias, 4 feet to 8 feet high; Azaleas, Gardenias, Dracænas, Isolepis, Clematis, Palms, Ferns, &c.; also the erection of Six GREENHOUSES, Five Ranges of Brick PITS, Tubular and other BOILERS, Hot-water PIPES, and other effects.

May be viewed one week prior to the Sale, and Catalogues had on the Premises; and of Messrs. PEED AND GREAVES, Horticultural Auctioneers and Valuers, Loughborough Road, Brixton, S.W.

TO BE LET or SOLD, a NURSERY, 6 miles from London. Comprising an Acre of Ground, 8 roomed Dwelling-house, Stable and Coach-house, 12 Greenhouses in thorough working order.

Apply, Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

WILLIAM CLAPHAM,

*Garden Architect and Natural Rock Builder,*

SHAW HEATH, STOCKPORT.

Ferneries, Grottoes, and Rockwork, in common with Landscape Gardening, to suit any locality.

ALL PERSONALLY CARRIED OUT.

Silver Medal awarded Preston Guild, 1882.

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A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Lisbria Park, Stamford Hill, N.

FORSALE, CHEAP, 18 Pots of EUCHARIS, each pot containing 8 to 12 flowering bulbs. For price W. JACKSON, Bilkedown, near Haslemmere.

SEAKALE for Forcing.—Excellent large Crowns 50s. per 1000; under 500, 12s. per 100. Orders to be accompanied by cheque or P.O.O.

ALFRED ATWOOD, Grower, 51, Shillington Street, Battersea, S.W.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above and all other leading varieties at greatly reduced prices.

T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

VIOLETS.—We have several thousands in 5-inch pots of Marie Louise and Swanley White (warranted the same as that falsely called "Count Brazza"), full of bud; yield a large crop up to April, 5s. per dozen, 30s. per 100; 8s. per dozen, 54s. per 100; 10s. per dozen, 68s. per 100.

H. CANNELL AND SONS, The Home of Flowers, Swanley, Kent.

**Bermuda Easter Lily.**

LILIUM HARRISII.—This Lily, coming direct from Bermuda, must not be confounded with the variety generally sent from America under the above name, to which it is much superior, and different in bulb, growth, and flower.

Mr. WILLIAM BULL has just received his usual large importation direct from Bermuda, and can supply good bulbs at 2s. 6d. and 3s. 6d. each; gigantic bulbs, 5s. and 7s. 6d. each; a few monster bulbs, 1 foot in circumference, 10s. 6d. each.

LILIUM AURATUM.—Mr. WILLIAM BULL is now booking orders for good, plump, sound bulbs at 6s., 9s., 12s., 18s., and 24s. per dozen. All other good Lilies at equally low prices.

Established 1860 for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

**Home-grown Vegetable and Field Seeds.**

H. AND F. SHARPE will be pleased to forward on application their Wholesale Special Priced LIST of Home-grown VEGETABLE and FIELD SEEDS of 1885 growth, all raised from the best selected stocks, and harvested in splendid condition. The Prices will be found very advantageous. Seed Growing Establishment, Wisbech.

TELEGRAPHIC ADDRESS—"GILBERT, STAMFORD."

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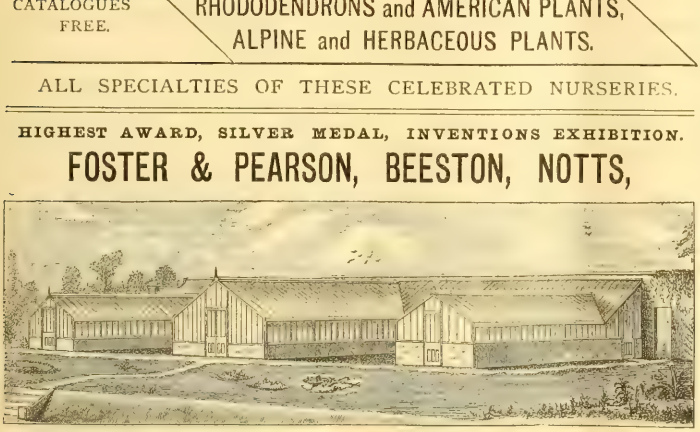
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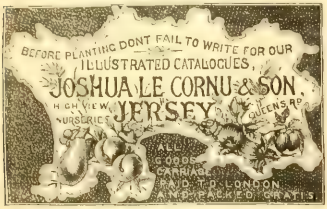
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THE

Gardeners' Chronicle.

*SATURDAY, NOVEMBER 28, 1885.*

## THE RAISING OF HARDY FRUITS.

I HAVE read with much pleasure Mr. Ingram's interesting article (p. 589) on raising new varieties of Pears and Apples from seed, and am delighted to see that one occupying his distinguished position as a horticulturist and a writer has leisure to devote his talents to such a praiseworthy and interesting pursuit.

The floral favourites of this generation will probably be all but forgotten in the next, but the raiser of really good Apples may reasonably hope that his productions may, like the Ribston and Golden Pippins, and the old Pearmain, survive and occupy positions of honour among Apples centuries hence. I know that many gardeners view the introduction of new fruits with mistrust and aversion, on the ground that too many varieties exist already.

I readily admit that far too many kinds of Apples are grown, and would gladly see a liberal weeding out of inferior varieties, but at the same time I would be sorry to think that our British Apples were capable of no further improvement, for even the best of them fail to meet the requirements of the times, and in many of our markets are practically excluded by American varieties. Some maintain that this is as it should be ; that ours is not a fruit-growing country ; and that it is hopeless for fruit growers here to try to compete with the large, fine, and highly-coloured fruit, which is supplied in such large quantities from America. I do not take this view of the matter. Though a genuine free-trader, and glad to see a plentiful supply of good fruit, from whatever source obtained, brought within reach of the people ; still, I think that we should not resignedly accept the present state of matters as inevitable, but should endeavour by every means in our power to improve our home-grown fruits, not only by careful selection of existing varieties and proper modes of cultivation, but by endeavouring to raise new and improved kinds. Further, I see no reason to doubt but that persistent, earnest, and well-directed efforts on the part of British fruit raisers may result in a race of Apples suited to our climate, and in no respect inferior to the best American fruit.

We have sorts that attain the largest size, we have varieties that excel the best American Apples in flavour, we have sorts of handsome and regular outline ; many of our varieties cannot be surpassed as bearers, while there are not a few that put on the richest colour even far north in Scotland. Now, in the hands of enthusiastic and skilful cultivators is there not a possibility, by means of raising seedlings from selected fruit, or, perhaps still better, by systematic crossing, of combining all these qualifications in the same variety? The ideal might never exactly be reached, but the efforts to attain it could not fail to produce many valuable acquisitions. Thus, a Stirling Castle with greater vigour of growth, an Ecklinville of more attractive colour, and a Blenheim Orange that would come sooner into bearing,

would all be decided improvements, and probably easy of attainment.

That increased attention has lately been directed to this subject is evident from the number of really good new varieties of hardy fruits that have been introduced and certificated within the last few years, while at almost every monthly meeting of the Royal Horticultural Society new claimants for honours are submitted, and though most of them are relegated to obscurity, still the sign is a healthy and a hopeful one.

The writer has for a number of years devoted a considerable amount of attention to the raising of new varieties of hardy fruits. Special attention has been given to the Apple as likely to give the best results in Scotland, but numerous seedlings have also been raised of red, white, and black Currants, Raspberries, &c. Among the seedlings that have fruited few, so far, have been thought worthy of special distinction; but the pursuit has been interesting and instructive, and many promising looking seedlings have yet to disclose their qualities; and among them something may be found worthy of being handed down to posterity. In raising seedling Apples those varieties only should be used as parents which succeed well in the district in which the raiser resides. American and Continental sorts, however fine (except the few that have proved to do well in this country), should be avoided as not likely to produce offspring suitable for cultivation in our climate.

This, at any rate, was the experience of Van Mons in regard to seedlings of French *versus* Dutch Pears, and no doubt the same thing holds good in regard to other fruits and other countries. I would also recommend that those varieties chiefly should be selected as seed parents which are large, smooth, round, and finely coloured, while on the contrary fruits of awkward outline, angular, knobbed, or ridged, with deeply sunk eyes and stalks or unattractive in colour, should be avoided.

Peasgood's Nonsuch, Stirling Castle, and new Northern Greening, may be cited as examples of Apples of pleasing outline; while Devonshire Quarrenden and Worcester Pearman exhibit the perfection of colouring. A preference should also be given to late flowering sorts, as likely to produce varieties calculated to escape the late spring frosts, which so often play havoc with our fruit crops, though I have seen the Oslin Pippin escape by reason of its extreme earliness, the set fruit evidently withstanding the frost better than the expanded blossoms of later flowering varieties.

The method I have generally followed in raising seedling Apples is to save the seed from choice fruit as opportunity offers, and to sow in pots in a greenhouse or frame early in spring. Each variety is kept separate, and a record kept of the parentage. By autumn they are nice plants, 9 to 18 inches high, and they are then planted out and carefully labelled. In the spring one or two scions are taken from each of the strongest seedlings, and grafted on Paradise stocks in the nursery lines. After a season's growth they are planted out in the experimental ground, 3 feet apart each way, and kept within moderate compass by means of pinching, and, if necessary, root-pruning, and in a few years they show flower and fruit.

It is very interesting to watch the characteristics of the different seedlings as they develope. Some sorts seem to reproduce themselves with little variation, as far as foliage, wood, and habit of growth are concerned. Thus in numerous seedlings from King of Pippins (or the variety generally grown by that name) almost every one has the upright habit of the parent; and the progeny of Potts' Seedling nearly all exhibit the peculiar knob or thickening of the shoot below each leaf-bud so distinctive of that variety. On the other hand, some of the seedlings have nothing in their appearance which would give a clue to their parentage; thus a number of seedlings from Warner's King are small and twiggy in their growth, poor in foliage, and do not raise any lively expectations as to their future. Among seedlings from Stirling Castle are several of evidently greater vigour than their parent, while one is so beautifully pendulous as to promise to be an acquisition as an ornamental tree. Seed from very free bearing Apples often seems deficient in vitality, a result probably of overcropping. Thus the seed of Lord Suffield often fails to germinate, and of those that come up many are weak and are carried off by mildew the first year. In the case of such free bearing sorts the seeds should be taken from fruit on young trees, bearing a thin crop. Seedlings which have thin twiggy growths and small leaves are scarcely worth the trouble of grafting, for though there may be a few exceptions, nearly every good Apple recommends itself to the experienced eye by its foliage, wood, and style of growth.

It may be interesting to record that among a considerable number of seedlings of white Currants which have fruited, none so far have produced red fruit. Seedling Raspberries exhibit a great variety of growth, though they preserve a general resemblance to the parent. In my latest lot of seedling Raspberries I observe several which have canes entirely free from spines.

Afraid that I have already encroached too much on your valuable space, I will reserve some further observations for a future occasion, if thought desirable. *James Grieve, Pilrig Park, Edinburgh.*

# New Garden Plants.

## ALOCASIA SINUATA, *N. E. Br., n. sp.*

This is a very striking and distinct novelty, recently introduced by Mr. W. Bull from the Malay Archipelago. It is a handsome plant, very different from anything else at present in cultivation, so far as known to me, and remarkable for the unusual number of leaves produced by each crown, which, taken in conjunction with their fine dark colour and the strongly sinuate margin of the blade, make it a very ornamental and highly effective foliage plant, and one of the most striking Aroids that I have seen for some time. The specimen from which the description given below was made, was a flowering plant, and I am informed by Mr. Bull was very much below the average size, and that according to the statements of the collector a full grown plant would be about 4 or 5 feet in diameter; a grand and noble Aroid. From this it will be understood that the dimensions given below are introduced to show the proportions of the various parts. The boat-shaped limb of the bracts is a remarkable character, and well illustrates the transition from the blade of a leaf to a spathe, and indeed it is very similar to the limb of the actual spathe. I have not noticed it in any other species. This plant is also interesting as forming a connecting link between Alocasia and Schizocasia, and I am now, after examining this species, inclined to adopt Engler's former view, that the two genera should be united.

Leaves numerous (for an Alocasia). Petiole 6 inches long, flattened on the face, rounded on the back, sheathing at the base, dull green. Lamina sagittate, with strongly marked sinuous margins, 9 inches long, 4 inches broad (growing to a very much larger size), the front lobe oblong, very obtuse, with a short triangular point, the basal lobes about half as long as the front lobe, triangular, obtuse, with straight inner margins, and separated by an acute triangular sinus. Primary lateral veins about seven or eight on each side of the midrib, spreading, straight or variously curved, the four lower ones stout and rather distant; those near the apex much more slender and closer together. The postical branches of the midrib which run into the posterior lobes, give off two distant lateral veins from their upper edge; intramarginal vein about ¾-line distant from the margin. All the veins are strongly impressed above and prominent beneath, making the surface somewhat bullate. The upper surface of young leaves is of a very dark green along the principal veins, and of a lighter cheerful green between them; but in old leaves the lighter green deepens and becomes less distinguishable, although the contrast is still evident. Under-surface whitish-green, with the principal veins darker. Scapes several, from the centre of the rosette of leaves, each with two sheathing bracts, the outer furnished with a stalked, lanceolate, acute, boat-shaped, green lamina; the inner membranous, lanceolate, acute, concealed within the sheath of the outer bract. Scape 8 inches long, ¼ inch thick, slightly compressed, terete, light green. Spathe about 3 inches long (tube 7 — 8 lines long, lamina 2½ inches long), entirely light green inside and out; tube a little compressed, ellipsoidal, nearly as broad as long, lamina erect, narrow boat-shaped, about ½ inch broad, convolute-acuminate at apex. Spadix 2¼ — 2½ inches long (female part 4 lines, neuter part between ovaries and stamens 5 lines, male part ⅓ inch, and the cylindric-conoidal appendix 1 — 1¼ inch long), ovaries rather few, in two or three whorls, globose, green, with a large 3 — 4 lobed whitish stigma; the rest of the spadix milk-white. Malay Archipelago. *N. E. Brown, Herbarium, Kew.*

## BARKERIA VANNERIANA, *n. sp.* (*hyb. nat.* ?).*

This is a very fine plant, nearly intermediate between Epidendrum Skinneri and Barkeria Lindleyana. Its flowers are equal to those of the last named, fine rosy-purple in colour, with a small whitish disc on the lip. The column is quite Barkeroid, but the rounded acute lip is far more like that of Epidendrum Skinneri. Is it a hybrid? I had it from Mr. F. Sander, who obtained it from my excellent correspondent, Mr. H. Vanner, of Camden Wood, Chislehurst, to whom it is dedicated with pleasure. It would, however, be unfair not to state at once that I have known the plant since December, 1883, when Mr. W. Bull sent me just the same thing under No. 823. When I asked him for more material, it had, I believe, been disposed of, and thus the plant was left in my herbarium and kept unpublished. There is still another very curious undescribed Barkeria from Mr. Bull in my herbarium. *H. G. Rchb. f.*

## CATTLEYA WARSCEWICZII, *Rchb. f.*

I lately had a gorgeous flower of this little-known grand Cattleya from Messrs. A. Spae's successors, E. Vervaet & Co., Mont St. Amand-lez-Gand. Not to speak of the uncommonly delicate colours, I may say that the dried flower (of course smaller than the fresh one) before me measures 1 inch from the top of the dorsal sepal to the tip of the lip, and the line between the tips of the petals is of the same length. I learn that the plant had three such flowers, one of which was forwarded to Sir Trevor Lawrence, another to M. Massange de Louvrex. *H. G. Rchb. f.*

[The plant, which had twenty bulbs, is now the property of Sir Trevor Lawrence, Bart., M.P. *E. Vervaet & Cie.*]

## ANGRÆCUM GLOMERATUM, *n. sp.*†

At a recent meeting of the Horticultural Society there was shown by Major Lendy a curious Angræcum, with a request for its name. I have been unable to recognise it as a described species, and herewith offer a description of it under the name of Angræcum glomeratum. It has the narrow bilobed leaves and short stem of A. pertusum, and bears a single lateral compact head of forty small white sweet-scented flowers. The bases of the heads are covered with ovate brown membranous bracts. The structure of the flowers is like that of A. clandestinum, Lindl., but the lip is less open, the spur quite straight, parallel to the smooth white ovary,

* *Barkeria Vanneriana.* — Vultu Barkeriæ Lindleyanæ: labello oblongo acuto non undulato-crenulato, callis depressis ligulatis acutis in basi gaminis, lineis carinato elevatis, ungue ad apicem terminis, columna purpurea. Speciosa planta cel. H. Vanner dedicata. Ut videtur hujus Vanneriana, Rchb. f. *H. G. Rchb. f.*

† *Angræcum glomeratum.* n. sp. - Folia ligulata bilobata, caulis brevis. Anthela capitata laxiaris densa, basi squamis membranaceis brunneis, marginibus scariosis, tecta. Flores parvi albi. Petala et sepala ovata obtusa. Labellum infundibulare integrum. Calcar cylindraceum acute rectum, cylindraceum apice clavato. Columna linguiformis, marginibus incurvis rostello elongato acuto. Anthera truncata. Caudiculæ ampullæ duæ, discus oblongatus oblongus integer. Sierra Leone. *H. Rchb. f.*

and clubbed at the end. Major Lendy tells me he purchased it from F. Sander in 1884. It was introduced for Messrs. Sander by the late Mr. S. Schröder from Sierra Leone. *H. Ridley.*

Calanthe Langei.

Leaves elongate-lanceolar, gradually acuminated, narrowed into a channelled stalk, several tufts of leaves from one rhizome: flower-stalks basal, much surpassed in length by the leaves, beset by several large green clasping bracts; flowers numerous, pendent, crowded into a dense glabrous raceme; floral bracts membranous, linear, gradually much pointed, reaching to the summit of the calyces, early deciduous; stalklets short; calyx-tube about half as long as the lobes; the latter deep yellow, not spreading; upper one ovate and somewhat acute; lateral lobes lanceolar, blunt at the base; inner lobes nearly as long, ovate, acute; labial lobe slightly shorter, adnate up to the summit of the gynostemium, thence spatular-obovate, apiculated, at the base of the free portion lobulated by two minute almost deltoid teeth, towards the base gradually raised into two slight longitudinal elevations; spur hardly half as long as the calyx-lobes, turgid, ovate-cylindric, blunt; rostellum not elongated.

In New Caledonia, from whence it was transmitted by Consul E. L. Layard, C.M.G., to Fr. Lange, Esq., of Melbourne, in whose splendid garden it bore flowers in August, 1885.

Leaves attaining a length of about 2 feet, and towards the middle a width of 2½ inches. Racemes 3—4 inches long. Flowers not perceptibly odorous, almost vitellinous in colour. Calyx-lobes about ½ inch long, or not much longer; saccate basal prolongation of the labellum about as long as the ovary at the time of flowering, filled with nectar liquid; free portion of the labellum somewhat hastate.

This handsome and evidently rare plant is closely allied to Calanthe curculigoides, from which it differs in the flowers being more bent downwards, in the smaller lateral lobules of the labellum, in the shorter, much thicker, and straight spur, and also in the not long-pointed rostellum. From C. speciosa it is distinct in having smaller flowers, the inner calyx-lobes or petals not rhombiform, and the labellum not cristate but somewhat turgid from callosities towards the base. From C. ventrilabra in the outer calyx-lobes not being acuminate, and in the labellum not being provided with five radiating elevations.

This is the third Calanthe made known from New Caledonia, where the widely distributed C. veratrifolia occurs as well as the endemic C. angræciflora (H. G. Reichenbach, in Garcke's *Linnæa*, xli., 75); but Limodorum unguiculatum (Labillardière, *Sertum*, 19, t. 25), placed by Bentham (B. and H. *Gen.* iii., 521), also generically under Calanthe, belongs to Spathoglottis, as shown already by H. G. Reichenbach, in Seemann's *Flora Vitiensis*, 300. *Baron von Mueller, in "Wing's Southern Science Record,"* vol. i. (new series), 1885.

## BERRY-BEARING PLANTS.

During the dull winter season, when flowers are scarce, berry-bearing shrubs are of great service, their brilliant colours coming in well either for Christmas decoration or brightening up the dull corners of our gardens and shrubberies.

Cratægus pyracantha.

Foremost amongst these we feel inclined to place Cratægus pyracantha, which, with its agreeable dark glossy foliage and dense clusters of orange-scarlet berries, is certainly one of the most effective of wall plants during the winter season. Complaints are, however, by no means few as to the berries being produced only on the upper branches of this Thorn, but this is simply the results of insufficient knowledge regarding its treatment. To induce free blooming and an even distribution of berries an annual pruning back of the lower branches is all that is required, and which will also have the effect of greatly improving the general appearance of the plant. As regards soil it is by no means fastidious, although the deeper and richer this is, so in proportion will be the vigour of the plant. A northern aspect seems to suit it best.

C. coccinea,

the scarlet-fruited Thorn, is another highly interesting and desirable shrub for winter decoration, the clusters of large coral-red fruits being both attractive and ornamental in no small degree. For growing singly as a lawn or garden plant this is invaluable, the bold vigorous growth, large shining deep green leaves which in autumn assume a yellowish-scarlet tint, and profusion of berries being all recommendations of the highest order.

Euonymus europæus,

the Spindle tree, is at all times deservedly popular in ornamental plantations and grounds, but more particularly during late autumn and winter, when the pale scarlet fruit is open and revealing the orange coloured aril of the seeds, thus producing a strikingly beautiful effect. Like the Privet, this native plant is almost an evergreen, the hardiest of the genus, and invaluable for planting in maritime districts. As a standard it always looks best, and, as it bears pruning with impunity, it can always be kept within bounds, and of a trim, tidy appearance. There are several desirable varieties, the most interesting of which is the white-fruited kind, which, however, differs in no way from the species save in the colour of the capsules. Then there is the dwarf form—nanus—an acquisition for rockwork, and a variety with scarlet leaves, which, when well placed, offers a rich contrast to the normal species.

Cotoneasters.

Amongst these C. frigida is just now one of the most effective of all our berry-bearing trees, and certainly constitutes an important element in the garden landscape at this season. To see it when well covered, as it usually is, with its coral clusters of fruit, as they stand out against a dark background, is truly a pretty sight, and makes one wonder why this handsome and distinct shrub, or rather small tree, is not oftener seen in our gardens. It is perfectly hardy, a rapid grower, and of the easiest culture. Another distinct and beautiful species is C. Simonsii, the bright vermilion-coloured berries borne all along the slender shoots giving to a well-covered bush quite a glow of red. C. microphylla may well be added to the list; its pretty and numerous white flowers, its dark, shining foliage, and, above all, its never-failing crop of dull red berries, rendering it a general favourite for walls, or covering bare rocky patches of the garden borders. It bears pruning with impunity; in fact, the more it is cut the denser it grows, and it is by no means uncommon to see it so thickly studded with its beautiful berries that the wall against which it is trained is a glow of red.

Holly.

The common Holly is by most persons considered king of the berry-bearing shrubs—a title it, no doubt, well deserves, for when laden with its bright scarlet berries—which, by-the-bye, are well set off by the dark, shining green foliage—it has indeed few equals amongst our hardy evergreen trees. It has, however, one fault—if fault it can be called—that, unlike most berry-bearing plants, it rarely bears fruit for two years in succession. As an ornamental evergreen the Holly is of particular value, possessing as it does the great merit of growing and thriving luxuriantly under the shade and drip of other trees. In the formation of hedges it has few equals; but its slow growth and seeming difficulty to transplant, has doubtless much to do with the unfrequency of its use in this way. For planting in elevated positions it is also invaluable, the closeness of its foliage causing it to furnish a large amount of shelter in proportion to the space it occupies.

Hippophae rhamnoides,

or the Sea Buckthorn, when laden with its bright orange-coloured berries, is certainly not to be despised, and there is no reason why it should not be planted in our shrubberies, for there are few plants whose berries are so attractive, or of such an unusual colour, at the present season. To see this plant as it is at present in some gardens along the sea coast, where the numerous long twiggy branches are covered for about a foot of their length with crowded clusters of the brightest orange berries, is simply grand, and would scarcely be credited by those who have not had the good fortune to see it in its most luxuriant form. Although usually considered a seaside plant, yet it is by no means exclusively so, for in many inland counties of England it blooms and fruits freely enough. Like the Aucuba this shrub is dicecious, so that to have a production of berries male and female plants should be placed in close contiguity. Good strong loam suits it well, although in this respect it is by no means fastidious, thriving well on that of very opposite characters.

Arbutus Unedo,

the Strawberry tree, is now not only gay with its greenish-white flowers, which hang amongst its dark evergreen foliage like so many waxen bells, but also abundance of Strawberry-like and highly-coloured fruits. Two years are required for the fruit to ripen, therefore the production of flowers and fruit goes on at the same time. When favourably placed and well developed the Arbutus is massive and pleasing in outline, but this perfection is rarely attained unless the plant is grown on light porous subsoil, or where shingly rock crops out at the surface. Here both shape and beauty are brought out, the shrubby habit is left off, and the proportions of a fair-sized evergreen tree taken instead, while its floriferous and berry-bearing nature is likewise enhanced in due proportion. Cold, damp soils are unsuitable for its growth, which may also be said of high-lying exposed situations. *A. D. Webster.*

(*To be continued.*)

## CACTUSES.

Hardy Cactuses.—Apart from Opuntia missouriensis, O. Rafinesquii, and O. vulgaris and their varieties, we have very few hardy Cactuses. I have succeeded in wintering safely O. pescorvi and some others, but with uncertainty. I have found Echinocactus Simpsoni very uncertain; it would live through one winter all right, and rot off during the next one. Echinocereus phœniceus and a form of Mamillaria vivipara I have known to survive several winters, but not in my garden; and Mr. Menand showed me in a neighbour's garden at Albany a bunch of what he called Echinocereus Krausei, which had been growing there out-of-doors for several years. As a garden plant I have found Opuntia missouriensis the hardiest and most accommodating of all Cactuses, and I never knew it to miss flowering; with me it always blossomed copiously. In the case of hardy Cactuses I have found they must be grown where water does not lodge in winter, as for instance on raised ground, and if they can be covered over by some leaves, thatch, or, better still, snow, in the winter, they come through with less injury in spring. My old neighbour, Mr. John C. Hovey, an ardent admirer and grower of Cactuses, gave me the following list of Opuntias which he found to be hardy in his garden, ordinary level clayey soil:—Opuntia vulgaris, O. Rafinesquii, O. R. grandiflora, O. cymochila, O. stenochila, O. hystricina, O. missouriensis, O. m. macrosperma, O. m. albispina, O. fragilis, O. fusiformis, and O. pescorvi. Among those mentioned by Mr. Siler I have tried Cereus Englemanni, Echinocactus cylindraceus, Opuntia rutila, and Mamillaria chlorantha, also Agave utahensis as hardy plants, but all died. I would say here that I have grown some fifty distinct species and varieties of Agave, and have found A. utahensis the most difficult of all to grow. Dr Edward Palmer, the eminent botanical collector, sent me plants from their native places, and I have raised it from seeds and coaxed it in many ways, but without avail; the plants appeared unhappy. And this is the only species of Agave I have failed with.

Tender Cactuses.

I regard all Cactuses not absolutely hardy as being tender, and treat them accordingly. While a few degrees of frost may not hurt some of them, still it does not do them any good. Epiphyllums, Phyllocactuses, Rhipsalises, Melocactus, and the more tropical Cereuses, as C. grandiflorus, C. Jamacaru, C. nycticalis, and C. cœrulescens like warmish winter quarters. The general run of "Cushion" Cactuses, Opuntias, and the like, if kept in dry airy places and inactive, may be wintered safely in a moderately low temperature, but under 40° is unsafe. All Cactuses delight in being set out-of-doors in summer. Cereuses, Echinopsis, and Opuntias enjoy being set out in open sunny places; but Mamillarias, while they like being planted out, very much dislike moist foggy weather, heavy rains, warm weather immediately succeeding wet weather, and cold or heavy night dews; all of these cause "rust," and "rust" is incurable. I have always grown Mamillarias and all other delicate, weakly, new, rare and valuable Cactuses in cold frames in summer, and covered them over with sashes as a preventative against the above

evil conditions. In propitious weather they were fully exposed.

I prefer planting out even in frames in summer to keeping them in pots, because I thereby have a good opportunity to see that my plants are thoroughly cleaned twice a year—at planting out and lifting time—and the plants grow much better and bigger, and bloom more copiously, when planted out than when kept along in pots. If [growers] had much to do with Opuntia exuviata, I should not wonder if [they said] something naughty; but, that species excepted, what in earth is there in other Cactuses to incite an evil word? There is a knack in handling Cactuses. For a good many years I handled the fullest collection of cactaceous plants in the country, and twice a year every plant passed through my own hands. I myself planted them out in May, and lifted or repotted them in September, and all because I was afraid if I trusted any of the workmen with the job they would be more careful of themselves than of the Cactuses. And I can assure you no orchidist ever watched the progress of Vanda Sanderiana or Phalænopsis Stuartii with more anxious pride than I did my Cereus Thurberi, C. Palmeri, C. Greggi, Echinocactus myriostigma, E. phyllacanthus, and other pets. And how disgusted I [was] when to some visitor I would point approvingly to Cereus giganteus, 20 inches high and ten years old, to be informed, "Oh, that's nothing; you should have seen it at the Centennial." And so I did, and elsewhere, too; but such another life-long garden-grown plant as that is I never came across east of the Mississippi.

I have found that each and every kind of Cactus that I have grown will do well in a gritty turfy loam. Drain the pots well and pack the soil firmly. Lime rubbish, pounded bricks or rotten stone added to the soil has no visible beneficial effect whatever; the drainage will not clog nor the soil get sour if you don't over-water your plants. *W. Falconer, Glen Cove, Long Island, New York, in the "Gardeners' Monthly and Horticulturist."*

## THE GENUS ODONTOGLOSSUM.

(*Continued from p. 589.*)

THE Andersonianum section and others allied, conjecture hath it, are the result of crosses between the many varieties of O. crispum and the very variable forms of O. odoratum, which run from the small-flowered kind originally figured in various grades up to that called gloriosum (fig. 149). Gardeners generally, who are, perhaps, the best judges of Orchid physiognomy, think the case pretty clearly made out, the features of each being merged in the progeny, as will be seen by reference to our illustrations, and a comparison of them with those of O. crispum vars., illustrated in our issue for November 7. The following are the best known varieties; most of them have branching flower-spikes and numerous flowers:—

O. ANDERSONIANUM (fig. 150) was first described in the *Gardeners' Chronicle*, June 6, 1868, from the plant which flowered in the Meadowbank collection. Its flowers, which are harder in texture than those of O. crispum, are pale yellow or cream colour, blotched with various shades of brown.

O. A. FLAVEOLUM.—A very fine form with large branching spike of bright yellow flowers marked with red. Mr. Ballantine received a First-class Certificate for it at the Royal Horticultural Society, December 9, 1884, when he exhibited it for Baron Schroeder.

O. A. OBTUSATUM has flowers rather smaller than the type, and with a shorter labellum, but similar in other respects.

O. A. LOBATUM (fig. 151) is a very elegant form, with nearly white flowers, marked with brownish-crimson. Its labellum is curiously elongated, and recurves when mature, as seen in the illustration.

O. A. PICTUM is a very handsome variety, certificated at the Royal Horticultural Society this year. The flowers are yellow, prettily marked with bright blood-red. Sir Trevor Lawrence has it in his collection.

O. HEBRAICUM.—This is very close to O. Andersonianum, it having little but the disposition of the marking to distinguish it. O. hebraicum has flowers with pale yellow ground colour marked with reddish-brown, the peculiarity being that the marking is not continued the whole length of the two petals, but confined to the lower half next the column, and arranged in irregular radial lines supposed to call to remembrance Hebrew characters. Sir Trevor Lawrence has a very fine form, which is amply distinct from O. Andersonianum (*Gard. Chron.*, 1881, xvi., 173).

O. H. LINEOLIGERUM.—In this variety, which flowered with Mr. James Cypher, of Queen's Road Nursery, Cheltenham, the irregular markings on the petals of the type are in this departed from, the marks being in lines.



FIG. 149.—ODONTOGLOSSUM GLORIOSUM.

O. BAPHICANTHUM in form resembles O. Andersonianum, indeed it may be said to be an unspotted pale yellow form of that variety.

O. DELTAGLOSSUM.—This also is very close on the preceding, and both of them give a very tangible link between Andersonianum and crispum by the nearness to which they approach it through the varieties of O. C. aureum and O. C. flaveolum.



FIG. 150.—ODONTOGLOSSUM ANDERSONIANUM.

O. JENNINGSIANUM comes near to O. Andersonianum and bears also traces of some of the narrower petalled forms of O. c. guttatum. Its flowers are white or cream colour blotched with dull crimson.

O. J. PARCIGUTTATUM is a form of the preceding with very few reddish-brown blotches on the petals.

O. J. LIMBATUM.—This is a very pretty variety, approaching O. Ruckerianum. Flowers white, spotted with crimson, petals edged with yellow.

O. POLLETTIANUM (fig. 152, p. 681).—This may fairly be put at the top of the Ruckerianum varieties as being by far the best. Its flowers resemble those of a good large Ruckerianum marked with the bright crimson tints of the O. crispum guttatum. Spikes upright, much branched, flowers large, white, tinged with rose, and heavily marked with crimson. O. Pollettianum is one of the finest varieties of its class, and H. M. Pollett, of Fernside, Bickley, was awarded a First-class Certificate for it at the Royal Horticultural Society, February 12, 1884. *James O'Brien.*

(*To be continued.*)

## NOTES FROM A BUCKINGHAMSHIRE GARDEN.

*Sunday, September* 13.—Autumn or spring! "I know not which is sweetest, no not I"—the deep mellow calm of an evening such as this, in the middle of September, or the green brilliance of the spring. The colour is rich, like an old Venetian master; and how sad! with the strange sweet sadness of all last things—last days, last hours. The air is filled with a golden warmth, and all tremulous with the sound of bells. The chimes of four churches make music together, within a half circle of four miles. Save for the dazzling glow of tall crimson Phloxes, or where the leaf of some Virginian vine, impatient of the lingering summer breaks into sudden scarlet, or where great Sunflowers burn in fair majesty serene, the tones of colouring are subdued and solemn; the young moon alone shines coldly through thin saffron clouds that pass across the far azure of the southern sky, while in the west a pink flush, deepening into orange fires, reflects back rosy-gold upon the lulled earth beneath. Across the Petunias and many-coloured Zinnias bend fruitful branches of Apple and of Pear. There is a sense of settled calm and peace, of home, and of all that may be most pleasureful and most secure, in these plenteous boughs weighed down by the load of their good great Apples and gently swelling Pears, and the mellow round of each ripening fruit glows as if illumined from within. And now a great silence steals on upon the air. The bells have ceased, their last vibrations lost along the far-spread fields. The sharp "tzit, tzit," of a robin, or a beetle's drone in passing flight, seem but to intensify the stillness. In this beautiful hour, as twilight deepens down upon the flowers, they seem to open their hearts to you and speak. The half-cold, withdrawn look of common day has vanished from each lovely face, and as you pass by, voiceless, they tell you sweet nothings without words.

It is more strange than perhaps at first sight appears, the illumination of flowers and bright coloured objects after sundown, while the green of surrounding grass and foliage is lit only with a sombre radiance. I may be pardoned for giving a suggested theory in explanation thus. The colour of all objects depends upon the kind of illumination they receive. A completely yellow light thrown upon a nosegay will kill all colour excepting in the yellow flowers. Newton discovered that sunshine and all white lights have the power of pouring every conceivable shade of colour upon all objects, and these again have the power of extinguishing all shades except the few which suit their own substances and textures. "A blue Salvia extinguishes all the red, yellow, green, and possibly the violet rays, while a red Poppy absorbs all the violet, blue green, and possibly yellow. We therefore see the latter brilliantly red, and the former purely blue." When mellowed fruits and yellow and red flowers shine at evening it is because the sunset light comes to them through more and more of the air that envelopes the earth, and which, though invisible, quenches almost entirely the violet, blue, and green. All objects disposed towards yellow and red are then illuminated as with a pure light of these two colours, and they gleam out triumphantly, because all other green, blue, and violet objects are more or less deprived of their favourite rays. Nothing of this, however, quite explains why white and yellow flowers often appear so bright at night, or why some other flowers—and notably some kinds of crimson Snapdragon (Antirrhinum)—do often shine, so as to attract the eye from a distance on some very dull grey days. These (as, indeed, all flowers in some degree) doubtless have a self luminous power, which we call phosphorescence, whatever that may be.

We have already had large store of delicious, well-sunned wall fruit—Peaches, Figs, and Plums. I can believe that, had we means to build and keep up long ranges of houses—Peach-houses, and Nectarine and Fig-houses—they would be built, and we should draw

from their rich produce the same enjoyment that others do who possess glass. But I do not believe that these houses would ever give me the same delight as does the little basketful of fruit and flowers that is brought in to me every morning on these late summer days. I do not believe that the finest fruit ripened under glass could compare at all with the beautiful red sun-ripened Peaches picked from the old brick walls! My basketful holds sometimes one such perfect Peach, two or three purple Figs, yellow Plums and China Roses too, all fresh and dewy. The quantity of immense bunches that are gathered out of our one small house, lasting up to nearly Christmas, never fails to be a surprise to me, although it is always the same every year.

*October* 19.—My best yellow autumn window curtains are up! No other curtains could ever please me so much as these. But to make it understood how perfect in their way they are, the windows also must be described. They are almost the only windows in the house that are not old-fashioned casements. At that period, in the beginning of the century, when in most old houses the picturesque and small-paned casements were made into sash-windows, the windows of what is now my room were enlarged and modernised. Here then, are two very large sash windows, almost due south, with the large frames and dull bald character usual to such windows. Ugly as they are, they were never altered, for the sake of the fine wide opening when the sash is thrown up. Covering the entire space of the upper half, and enframing the whole, hang my curtains: green for summer, and in autumn golden yellow. The pair is odd, for there must be nothing commonplace about the room; so the one is Magnolia, the other chiefly Vine. On the right is a bold intricate pattern of glossy leaves with here and there a great white creamy blossom—a chalice of so rich a scent—set here or there upon the branches, with blue sky between. The left is all Vine, made admirably to suit the seasons. In winter the curtain is drawn back, as it were; for a few interlacing barren lines keep out no light. The thin delicate arabesque of spring gives place to summer, when the green comes full and cool and shades the noonday sunlight. And now in autumn, my left-hand curtain is all yellow gold, reflecting back gold sunshine of its own. There should be dispersed amid the gold, bunches of ripe green Grapes, like clustered berylls. That part of the needlework has not been well done this year, and the Grapes are mostly shrunk and mildewed. To repair the loss of them, slender Jasmine twigs set round with dark green leaves, hold out little silver stars, peering round the corners, stretching round the window-sills, while across them comes a dash of red Virginian climber. The one fault I find, is that my curtains do not endure. Come a sharp frost, or strong gust of wind, they are gone in a moment. The failure of the Grapes is this year a serious disappointment to the birds, who count upon their vintage at the windows; yet the shutters opening in the morning discover them some times at work. There is a blackbird, with full black chest, swallowing the Grapes as fast as his golden bill can manage it; or a thrush sits in the Vine taking breath between his mouthfuls, while the sun shines sidelong on his spotted breast; or a robin shows his red waistcoat for a moment. He is not, I fear, my robin that has till now been so constant to the window for twelve months past—he has hardly missed a day. Bold and familiar in the winter, silent and hurried at nesting time. Not a feather in his tail, and very shy when moulting. Gay and *insouciant* in his new suit, looking as big again, and trilling half a bar at a time short and full, but "always regular to his meals" at the saucer of sopped biscuit. Dear little, tame robin! I shall grieve if he is dead; but I think he will come back in the winter, when birds are hungry. They say that robins go to the seaside in October; and another saying would have the young birds kill the old ones at this season. Even this is better than the way my friends the swallows behave. Up to the time when they all left England—about the 13th—they seem to have been still occupied with late broods of young. It was indeed without my consent that they thus foolishly employed themselves here in the north porch. If they could but have understood, I should have persuaded them to stay a little longer, to give their young a chance. On the 16th only one swallow was seen, and three days after a tragedy happened in the porch! Late in the afternoon a poor little full-fledged swallow lay dead on the cold ground. The forforsaken nestling may have fallen in its hungry efforts for food, or have attempted in its weakness to follow the strong-winged parents, whose cruel desertion it is hard to forgive. Strange and inexplicable is the migratory instinct with birds. It is then more powerful with them than even mother's love! and yet love is said to be stronger than death. The habits of the swallows who make themselves at home in our entrances, north and south, are full of interest. The red-throated chimney swallows like best the north. On the south side are martins Both kinds agree in departing from ancestral laws in their way of house building. The typical swallow's nest used formerly to be neatly built up—usually under the eaves—with a hole for them to fly in and out. Our swallows of to-day make flat hasty nests on projecting ledges inside the porch. One nest (re-filled three times last summer) is made up of ugly black clay, bearded with long straws of hay hanging down. Is it not a new thing for swallows to build with hay? We have only one really well-rounded, neatly-finished nest, and this is a martin's. The chimney swallows seem to be the most hurried and careless. One of our families makes no nest at all, there is simply a layer of mud laid on the ledge. Along the rim the five newly feathered young ones sit in a row to be fed, like five old owls in miniature. There is one thing that a swallow never forgets or forgives, and that is destroying the old nests. The place remains empty to this day where once we cleared away two overcrowded nests. They love overcrowding. I watched the old birds, on their return the following May,



Fig. 151.—Odontoglossum andersonianum var. lobatum. (see p. 680)



Fig. 152.—Odontoglossum pollettianum. (see p. 680.)

bursting with sugared juice, a golden Pear, a few Muscat or Madresfield Court Grapes, lovely in their exquisite bloom of misty gold or green, while single flowers of richly-scented Tuberose and dainty pink Begonias lie intermixed with the green Vine leaves and the fruits. Our sole pride of glass fruit culture is in the vinery. Season after season our Grapes excel in size and in flavour. The Muscats remind me of the Grapes of Italy. Travelling along the Corniche in days before railroads, Grapes, large and golden-green as these are the peasant people would bring to us and pour into our laps, with green Figs

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inspect the place, flying in and out and round about it; but either they forsook altogether, or nested elsewhere about the house.

Flowers still are blooming everywhere in the garden. There are still beautiful red Roses, smelling as sweet as June. Rosa rugosa has only just ceased to flower. A great clump of pale blush Anemone japonica at the south end of the broad walk has flowered grandly for some time past. A clump of white ones from the kitchen garden is to be planted there also, since it is plain that they look best in large masses. Had we room I should like to plant blue Salvia next to the white Anemones. The fine blue of this old Salvia enriches now the whole garden in almost every part. The colour is said by some to be in a false key, and as such to be out of tune with the more natural greens and blues around, contrasting ill with the lovely tones of Nemophila or of the blue Daisy—or even with the firmament itself. I know not how this may be, but to me it is nevertheless a magnificent blue—nearest, perhaps, in tone to the deep blue of the alpine Gentian, and losing beside the Gentian only because it lacks its depth of black heart. Pure ultramarine must be used in the painting of either flower. Our old walls are all well furnished with the vivid orange-scarlet glow of Tropæolum. It gives promise, too, of lasting on as long as winter frosts delay. I cannot give the name of this special variety of Tropæolum; its leaf is bluish and round, and the plant seems to be always in flower, from August until far into November. In the entrance court the old useless Green Gages and Golden Drop Plum trees against the walls are dressed out in these gay flowers, climbing, streaming, creeping, clustering about all over them—branch and stem. The vivid colouring is splendid; it seems but a few days since it mixed in many places with the purple of Jackman's Clematis. At this moment the blossoms intermingle here and there with tall yellow Helianthus. The aged fruit trees are doomed, and flowering climbers are to cover the walls in their place. The standard Cherry tree between the pyramid Yews is to be cut down, and a broader flower border to be made. It is hard to sentence the Cherry tree. In spring it is so like a great round nosegay of loveliest blossom, and when the Cherries begin to redden a thrush so loves to build its nest in it, and at evening to perch on the top and sing the lingering day away. Yet the Cherry tree must go. These kind of changes which at intervals have to be made throughout the garden cause me a thousand regrets. When the young trees and shrubs thrive and grow all round as Nature intended, the very success and growth of them overturns all our plans, and changes are inevitable. "The Fantaisie" has changed its character, and is not the same in any way as it was when first laid out. Then flowers and evergreen shrubs grew together on either side the turf walk, and each enhanced the other's charm. Twelve or thirteen years later the Cryptomerias and Aucubas and Berberis have grown so large that nearly all the flowers are crowded out, and a new aspect takes possession of the whole. The law of change which thus rules the garden has lately forced us to remove a large English Yew from the spot which it has occupied for many years. It was pushing its dark growth right into the beautiful grey foliage of an Abies amabilis. So last month the grand move had to be arranged. To watch the transplanting of a tree is one of my best amusements of autumn in the garden. The work begins early in the morning. Two, three, four hours or more, according to the size of the tree, is taken up with digging round and throwing out the earth. The roots and rootlets have to be carefully separated: not cut or severed more than is necessary. The tree is tied close with strong cords: all its lower branches bound up together. The head gardener watches and gives his orders quietly, jumps down into the trench, and lends a hand himself with spade or pick; walking round, returning again and again. Silently, cheerfully, the men work. A wholesome fragrance of new earth spreads upwards in the air. The labour is severe, but at last the tree stands free, with a great ball of earth round his roots. The bell goes for the men's dinner; powdered all over with brown mould they scramble up and shake themselves, throw an old mat over the roots, and depart for their hour of rest. The men return refreshed, and set to work again with a will; and now three tall stout poles, the ends meeting at top in a triangle, are set up and fixed, with ropes and pulleys fastened to them. It may take long to adjust all right, but at last the tree swings high in the air, dangling from the summit of the triangle. The excitement of the moment grows intense. Two or three men in the pit below steady and guide the ascending mass; four or five pull the ropes with might and main. The tree swings fair above the centre of a trolley, wheeled up to the edge ready to receive it. The gardener holds on to the strong shaft or handle of the trolley, his eye fixed anxiously on the swaying tree, encouraging the men, directing every movement. The ropes are tight; the tree is well up. "Now let go! Slacken the ropes!—gently—so!" Gently the tree is lowered down upon the platform of the trolley, and the ball of earth once more is wrapt in mats. Now begins the dragging, and pushing, and pulling; there's a shove and a tug all together, and the tree is fairly off on its journey. Toiling along the gravel-walks, the triumphal car rolls slowly on. The progress may be short or long; somewhere it ends, at the edge of a big hole prepared in the special spot designated to receive the tree. Soon he slides safely down into the bed ready made in the hole. There is a merry shovelling in and stamping of the earth, leaving a little ditch all round to hold the great watering which is the ending of the work; and there the tree is left, looking as if he had been there all his life. Unmoved the neighbouring trees and shrubs stand round, and not a green leaf flutters welome to the new-comer; it is henceforth as if the transplanted tree had never been anywhere else. Should the tree we have to move be larger than usual, it may take to do it twenty-six working hours or more.

Men of old time planted trees for posterity. With far-seeing wisdom they planned many a stately avenue, which still remain the ornament and pride of our fine old country houses. We do not in these days seem always to look so far beyond the present. When a few years ago I planted a row of young Limes (in old books they are "lines") as a continuation of the Lime avenue, with Arbor-vitæ between each tree, and parallel to these a double row of Larch, and a Beech hedge along the walk between the Limes and the Larch, I did not forsee the dilemma that has ensued. A decision must before long be made between the selfish enjoyment of the present, extending perhaps to a few uncertain years, or the future and lasting improvement of the place, which I shall not see. While we hesitate the trees grow on. The stems of the Limes grow thick and smooth, and their branches spread; the beautiful green Arbor-vitæ flourish, and are rapidly making handsome trees; my favourite Larch send up strong tall shoots every season, threatening to overwhelm everything; while the Beech hedge is so luxuriant that I am tempted to sacrifice all to it. Which is it to be? *E. V. B.*

## ORCHIDS IN FLOWER AT MR. B. S. WILLIAMS' NURSERY.

HERE, at this place, as elsewhere, flowering Orchids are very rare at the present time, but what there are deserve a passing note. We found Pilumna fragrans small but fragrant, perfuming the air in the Vanda-house. The odour of Hawthorn pervading these flowers reminds one of spring hedgerows, but is certainly unpleasant when inhaled at very close quarters. The New Guinean Dendrobium superbum was in flower—its light purple and white blossoms, airily disposed on slender spikes of great height, render it desirable for associating with Ferns and mosses. Lælia Dayana, a pretty purplish flower, the plant of very low habit, was flowering in baskets.

Many Calanthes were blooming, including C. vestita oculata, the white variety with a purple-crimson eye. Of Cypripediums there were Chantini, otherwise punctatum, a handsome form of C. insigne, the dorsal petal being abnormally large, mainly of a white colour, sparsely spotted with brown; C. Harrisianum, a flower of generally reddish-copper colour as to lip, and dark petals and sepals; C. (Selenipedium) Roezlii, a long-tailed green flower, and a pretty continuous bloomer, was likewise showing spikes that were almost over for this season. This is one of the late Benedick Roezl's earliest introductions to this country, and is deserving of a place in collections for its singular appearance.

Vanda Cathcarti showed two bloom-spikes not yet open, and a pale form of V. Sanderiana was in flower. This is much paler than the better known variety, and is less handsome. As yet but little variation from the type has been observed, but some may be looked for amongst the importations now coming to this country. Some few Odontoglossum Alexandræ and O. Pescatorei were showing flowers, the latter getting now past its prime. The display of pitchers of Nepenthes was very rich, the major part of the species being fully provided with them.

In Palms of recent introduction, and which are well suited to do service in the dwelling, may be mentioned Calamus ciliaris, a very graceful pinnate-leaved species, reminding the observer of a miniature Cycas revoluta, the foliage, as indicated by the specific name, being soft and hairy to the touch, but not to the sight. Rhaphis humilis, a rare species, slow growing, with more graceful foliage than R. flabelliformis, and increasing in the same way by rhizomes; and R. *f.* variegata, a handsome Palm with pale yellow-stripped foliage—an acquisition if it should prove constant.

Amongst Bromeliads were Massangeana tigrina, an enduring hard-foliaged plant which ought to be much grown by those having indoors decorations to carry out—its handsome, barred, dark bronzy leaves, which are coated with white mealiness, are very striking. On the Continent this plant is making much headway, as does any other plant of this or allied genera.

## THE BOTANICAL GARDENS IN JAVA.

DURING the last few years so many useful and important improvements have been made in the botanical gardens at Buitenzorg and Tsi-Bodas that it might not be amiss if the attention of the readers of *Nature* were again drawn to these valuable seats of systematic and philosophical research.

On entering the gardens at Buitenzorg the stranger is at once struck with the wealth and luxuriance of the vegetation he sees, the great height of the trees whose trunks and branches are in many cases covered with heavy creepers, the dense copses of the different species of Bamboo, the eccentric-looking Screw Pines, and the handsome Palm trees; but the scientific observer is also struck with the care that has been taken to arrange all these many varieties of tropical plant life in, as far as possible, their systematic order, and that each specimen has its scientific, and in many cases its Malay name also, clearly and distinctly printed on a little board by its side.

It is not difficult for any one to find his way about the garden, and in a very short time he can discover the particular family or group of plants which he may desire to study. Many families have probably more representatives in these gardens than in any in the world. The Sapataceæ, for instance, so rarely seen in Europe, are here represented by a great variety of genera and species, and the Palmaceæ, the Rubiaceæ, the Burseraceæ, the Orchidaceæ, and other families, have now a large number of rare and interesting representatives.

The herbarium, which is attached to the garden, contains a large collection of dried plants and seeds collected together from the many expeditions into the little or unknown parts of the Archipelago, and from other sources. Attached to the herbarium there is a comfortable and convenient little library, which contains most of the important botanical books and journals.

The laboratory, which, thanks to the energy of Dr. Treub, the director, is now completed, is a large, lofty, and, for these climes, particularly cool room, and is well fitted out with reagents and apparatus for carrying on botanical research. The generous invitation which Dr. Treub has issued to naturalists, and to which the attention of the readers of *Nature* has already been directed, has attracted several scientific men of different nationalities, and some excellent research has already been made in this laboratory.

When I arrived in Buitenzorg Dr. Treub was at Tsi-Bodas; so, after spending a few days in study in the gardens, I made the journey across the mountains to pay him a visit. The road from Buitenzorg to Tsi-Bodas crosses the Poenchuk Pass, and is full of interest and beauty. On the way the traveller passes quite close to the Talaga Werner, the crater of an extinct volcano which is now filled with water, and forms a most beautiful little lake hidden in the dense foliage of the mountain slopes. The path from the road to the lake is through a dense wood of fine forest trees, and amongst the undergrowth are found many fine shrubs and plants which are not found in the low-lying country beneath.

The gardens at Tsi-Bodas are situated on the slopes of the Gedeh Mountains, at an altitude of 5000 feet, and here I found Dr. Treub at work in the comfortable little house which is attached to the gardens.

From this spot a very wide range of vegetation may be studied, from the rich and varied vegetation of the plains to the interesting vegetation of the Gedeh and Pangeranso peaks, at an elevation of 10,000 feet. In the gardens themselves a very fine collection of Coniferæ from America, China, Australia, and other parts of the world, has been got together, and spaces have been cleared for the growth of the various species of Eucalyptus, Cinchona, and

other plants. Year by year the surrounding forest is being encroached upon by these gardens to make room for new importations. I was extremely sorry that I could not prolong my stay at Tsi-Bodas, but I had to return to Batavia to catch the Molucca boat. I saw, however, enough to convince me of the great importance of these gardens for the advancement of our botanical knowledge, and the great opportunities they afford for research into all branches of the science.

I need hardly say that the climate in this region is extremely pleasant and invigorating, and the neighbouring village of Sindanlaya is much resorted to by Europeans and others whose health has suffered on the coasts or low-lying districts of the Archipelago. At Buitenzorg the climate is by no means unpleasant or unhealthy, but as it lies a few thousand feet lower than Tsi-Bodas, it is naturally a good deal warmer; but I am assured that several Europeans have worked there for several years without feeling their health the least bit affected.

It is hardly necessary to add that every one who has come over to Java to work in these gardens has been amply repaid for the time spent in the long journey over the sea, for the insight which can be gained here into what tropical botany really is is one which can be gained nowhere else in the world so well, and leaves an impression which is not likely to be forgotten in a lifetime. *Sydney J. Hickson, Batavia, July, in "Nature."*

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Continued from p. 666.*)

Salcombe and its Estuary.—"Time and tide wait for no man," so to our chagrin we found that, it being spring-tide, we should only reach the much-vaunted Salcombe by night-fall; and in order to be in Exeter, as we were obliged, on the following night, that we must leave at 9.30 next morning—and this, when we had been rejoicing in the spring-tide as affording us an opportunity of finding the British coral-polype in one of its few localities on our south coast! The evening journey by steamer down the beautiful estuary was, however, very pleasant in itself, Undulating hills of ripe cornfields on all sides, with well-timbered hedgerows and copses of Oak coming down to the water's-edge, owing to the winding course of the shallow inlet, gave it all the appearance of a lake. The transparently clear water was scarcely ruffled by a single ripple, and as the fading sunlight tinted it with pink and gold, while the green of the trees on shore gradually became black, the scene reminded one forcibly of Windermere. Real mountains and wooded islets were, however, absent, so that the resemblance was not complete. As we neared Salcombe the outline of the church tower was just visible, but the terraced grouping of the little town was rendered apparent by the already numerous lights; and on landing our exploration of a place where Myrtles, Bays, and Oranges were reported to flourish in the open was performed under the difficulty of almost total darkness. Touch and taste, however, told of the whereabouts of many fine evergreens, and this evening ramble was supplemented by one in the early morning, after a comfortable night at the homely Victoria Inn, the best apparently in the town. The water is certainly beautifully transparent. Bolt Head and the rocks that lie off the mouth of the estuary, introduce the element of grandeur into the scenery. Many of the villas are pretty; but, it must be confessed, our general impression of Saleombe itself was one of disappointment. The farmers in the neighbourhood used also to engage in ship-building, turning out many handsome schooners for the fruit trade of the Mediterannean, and we saw a little ship-building in progress on the estuary; but the screw steamers have ruined the trade. The old town is as dirty as that of Folkestone, which is saying a great deal, and the rest is new, painfully so. Still, everything thrives as a matter of course; for here in the South Hams, as this district (once all known as Totnes) is called, frost is unknown, the mean annual temperature being 47° F.

Combe Royal.

Having steamed back to Kingsbridge, watching the cormorants and kittywakes now flying and now swimming over the estuary, we walked up the lane to Combe Royal, noting by the way the occurrence of Geranium striatum, doubtless originally an escape, though not now cultivated hereabouts. Entering the lodge gate we found the drive sweep along the east side of the long and narrow combe, about midway up its slope.

On our left an underwood of Euonymus japonicus, with a foreground of Hypericum calycinum, was arched over by larger trees, whilst on the right was a grassy slope down to the American garden, a group of fine Elms and Planes and a small pond, on which a black swan was disporting itself, and beyond, the other slope of the combe was well timbered with Sycamore, Copper Beech, and other sheltering trees. Near the lawn gate rose a magnificent Plane, beneath which a large clump of Hydrangeas were in full flower. They are all blue-tinged here. Noting the two well-loaded Fig trees near the stables while we waited for Mr. Horsman, the gardener; when he arrived we were most courteously conducted over the whole of the extensive gardens, the management of which is entirely carried out by himself and three under-gardeners. The vinery, where a good crop of Madresfield Court on young wood looked as if it would be all the better for thinning, seemed to tell of an insufficient staff, whilst in the small stove there were some good Crotons, Gloxinias, and Adiantums, besides a Bougainvillea and a Banana that fruits every year, and has even borne twice in one year; but, probably owing to deficient moisture, Mr. Horsman has not been successful with Adiantum farleyense. In the kitchen garden Raspberries were a good crop in spite of the too numerous blackbirds from the nearness of the sheltering woods, and there was a good promise of wall-fruits, the walls all having projecting stone eaves, from which reed-mats are hung in winter. The conservatory, with small old-fashioned panes, was most rich in such climbing plants as require comparatively little oversight—Lapageria rosea, Allamanda, Tacsonias, Bignonia, Datura sanguinea, and Begonia fuchsioides—all of which looked well. Mr. Horsman next took us past two fine old Palms on the front lawn, which are entirely unprotected in winter, to the orangery, one of his main attractions. It is simply a gravel terrace, with a high wall facing the south-west, in which are nine or ten shallow recesses, each accommodating one large tree of a species of Citrus. Here was one tree, a Seville Orange (C. communis), if memory does not deceive, 250 years old; and another, planted by Mr. Horsman's grandfather a hundred years ago! The common Orange (C. aurantium) and its Maltese variety, the Lemon (C. limonum) and the Sweet Lime (C. limetta), the Citron (C. medica), and the Shaddock (C. decumana), each had its niche, and was flourishing and fruiting freely in the open air, without any of the smut-like appearance seen on those under glass at Kingsbridge. The trees are kept severely pruned back, are protected by mats in winter, and are thoroughly manured yearly with soot and guano, the gravel being turned back from their roots for the purpose.

On the slope above this terrace were many interesting trees; Camellias, the Loquat (Eriobotrya japonica), Embothrium, a fine Araucaria, and a large Eucalyptus, with clumps of Bamboo (B. metake and B. glaucescens), and bushes of Leycesteria formosa and a Hypericum, which I believe to be H. patulum. There is an interesting series of this genus in the pleasure-garden at Kew just now; but I failed to recognise this species among the pretty branched shrubby kinds. Walking along a wood-side path I was much struck by the beauty of Ilex latifolium, forming a large bushy tree, and by the numerous fine Cypresses, whilst Euonymus seemed to more than replace Holly as an evergreen under trees. Crossing the meadow towards the American garden, I first realised the great distinctness of habit in the Cornish Elm. Not sending out horizontal limbs, it has a Pear-like, almost pyramidal outline, with dark, glabrous, markedly oblique leaves, of a medium size. It does not usually fruit, but does not seem either to give off many suckers.

Luxuriating in perfectly undressed natural soil, a clayey loam, which is, I presume, mainly kaolin from the granite and slate of the interior, the American garden exceeds even the rest of the grounds in its wonderful luxuriance. We entered between walls of every kind of Rhododendron, the Himalayan species and many hybrids rivalling ponticum in size and general health. Unfortunately none of the plants are named. Gunnera scabra was not placed so as to show to advantage, as it does on Sir George Macleay's lawn at Pendell; but a large tree of the rare Halesia hispida, whose large pendulous racemes of white flowers were now over, a fine Chinese Juniper, and a gigantic Cupressus macrocarpa formed a most effective group. The latter tree, one of the earliest introduced, had a stem fully 2 feet in diameter, and more resembled a bushy young Lebanon Cedar than a Cypress. Winter's Bark (Drimys Winteri) in flower, Magnolia Yulan, the interestingly ternate-leaved Orange (Choisya ternata), and a variety of flourishing Eucalypti, were also among the collection. The latter, received as small plants from Kew, have now no names, but the Blue Gum, E. globulus, is not among them, as even here a winter is occasionally too much for it. Some of the trees rivalled in rapidity of growth those exhibited from the south of France at the Edinburgh Forestry Exhibition, giving a diameter of 4 inches for seven years' growth. An artificial streamlet filled with a luxuriant growth of Richardia æthiopica was the last feature we noticed before, having thanked Mr. Horsman for showing us a garden that reflects so much credit on his industry, we set off to catch the coach for Dartmouth. *G. S. Boulger.*

(*To be continued.*)



# Orchid Notes and Gleanings.

CATTLEYA BOWRINGIANA (AUTUMNALIS).

This very lovely new introduction is in bloom in several examples with Messrs. James Veitch & Son, who are the importers and holders of the stock. At first sight it might be taken for an autumn-flowering C. Skinneri, but examination reveals peculiarities which render it totally distinct from that species, or, indeed, from any Cattleya in cultivation. The chief peculiarity consists in each of the pseudobulbs having an enlarged and flattened base, so that each of them seems to spring from a formation something like a pseudobulb of Broughtonia sanguinea or Læliaopsis. The pseudobulbs, too, are clad with sheaths of very peculiar structure, and the leaves have a glaucous tint, which makes them resemble a tall form of Epidendrum ciliare or E. cinnabarinum more than a Cattleya Skinneri. The flowers are in neat bunches, the sepals and petals being mauve-tinted rose, and the labellum dark crimson, with yellow stain in the throat. Flowering, as it does, in the very dullest season, C. Bowringiana will be a great acquisition, and more demands will be made for it no doubt than the limited stock will meet. *J. O'B.*

Vanda cœrulea.

There was lately at Lake House, Cheltenham, in the collection of G. Nevile-Wyatt, Esq., a plant carrying the unusual quantity of ninety blooms. *J. Cypher.*

Calanthe vestita oculata gigantea [Oh!]

possesses a remarkably showy character, and blooms after some of its allies, thus affording a continuity of bloom. The foliage, moreover, remains green during the time of its flowering. It has long arching spikes, 3—4 feet in length, producing numerous flowers, which are large, and of a soft creamy-white colour, with a white lip, the base of the lip and underside being of a dazzling fiery red, which feature is the most striking characteristic of the variety. It blooms in March and April, and continues flowering for two months or more. *Condensed from the "Orchid Album," t. 211.*

Odontoglossum ramosissimum.

M. Linden, who discovered this brilliant species in the dense forests near Merida in Venezuela, at a height above the sea of more than 2000 metres, has described it by saying, "A magnificent species, with oval compressed pseudobulbs, flower-stem 2—3 feet long, covered with innumerable flowers of the purest white, petals rosy-purple at the base, lip purple." M. Roezl adds that it grows also between the rivers Canca and Magdalena at a height of 4000 metres, exposed to slight frost at night and where a thick icy fog prevails almost constantly. *Lindenia, t. 17.*

## ALPINE PLANTS.

LINARIAS. — The genus Linaria comprises about fifteen species, suitable to decorate our walls and rockeries. Some belong to the section of Cymbalaria, creeping over and hanging from the rocks, and are good for furnishing old walls. Their flowers are placed on long slender stems, which spread out on all sides or form long spikes. Others are erect, and show themselves in the form of a little bush, whose stems, more or less long and stiff, terminate in a bunch of flowers usually as compact as those of Linaria vulgaris. Lastly, a third section includes the species which, although creeping or trailing, bear their flowers on a terminal spike, as in L. alpina. None of these plants are difficult to cultivate, and if each has its special requirements it is easy to supply them. In the first section we find :—

*Linaria cymbalaria*, Linnæus.—So common as to need neither description nor particulars of cultivation.

*L. hepaticæfolia*, Duby., is a charming species, much more graceful than the preceding, and which when placed in good conditions is covered with flowers during all the season to such an extent that its leaves cannot be seen. It was covered with flowers until lately on our rockeries, where it has been flowering since the early spring. Much less inclined to run over the ground than L. cymbalaria, this elegant species, a native of the Corsican mountains, however, very rapidly covers the rockeries and the ground on which it is placed. It also suits walls very well. It succeeds everywhere, in the shade as well as in the sun ; but if many flowers are wanted, it must be placed in the sun in a hole with little soil.

*L. pilosa*, De Candolle, a native of the Apennines, is a plant which approaches L. Cymbalaria, but never developes itself so much and which even is rather difficult to propagate. The leaves are smaller and rounder than in L. Cymbalaria and covered with hairs. The flowers are of a reddish-violet. It does best when fully exposed to the sun.

*L. pallida*, Tenore, of the Apennines, is the most beautiful of all the Linarias. Its flowers are very large, of a violet-blue, and decorated with a pretty spot of orange-yellow as in L. alpina, but much more apparent. It is sweet-scented. The large greyish leaves are like those of L. Cymbalaria. This is one of the most decorative of rock plants. It likes a vertical position on the stones and the old walls, which it rapidly spreads over. It must be exposed to the sun and be planted in a strong soil. It is easily multiplied by parting the roots.

*L. origanifolia*, DC.—A native of the south of Europe, differs from the preceding in its foliage, which is near the other Linarias, and by its flowers which are less violet-blue.

*L. macropoda*, Boissier and Reuter, is near to L. origanifolia. It is very graceful, with flowers on a longer peduncle and of a pale lilac colour. It comes from the lower zone of the Sierra Nevada, and requires exposure to the sun.

The second section includes :—

*L. genistifolia*, DC.—Southern Europe. This is the largest species which is cultivated on rockeries. The stem is 0.15 to 0.20 centimetres (6—8 inches), and bears broad and glaucous leaves. Flowers large, yellowish-white, and arranged in loose spikes. It requires a good and fertile soil, and is multiplied by seeds.

*L. linifolia*, Willdenow.—Tauria, Podolia. A smaller species, more compact, with small flowers of a bright yellow. It flowers all the summer.

*L. striata*, DC.—This is a charming little lilac flower, striped with lines of a deeper colour It flowers all the summer.

*L. tristis*, Miller, is a species rarely cultivated. This plant, a native of Spain, is short, and has broad dark green leaves. The flowers, to the number of five or six, are placed in very short terminal bunches, and are marked by a blackish-brown spot on the upper lip. This spot is rather large and of a rather dark brown, so that the name tristis is quite appropriate to this species. L. tristis succeeds in a sandy, gravelly, and light soil exposed to the sun. It is reproduced by means of seeds and by the division of its tufts.

*L. pyrenaica*, DC., from the French Pyrenees, is a small compact species, very slender, and inconspicuous. It forms tufts, whose flowers, of a golden-yellow, are very decorative. It hardly attains the height of more than 5 or 6 centimetres (2—2½ inches), and assumes the appearance on the rocks of a golden button, the outer stems lying on the ground as if to sustain the upper ones.

*L. melanantha*, Boiss.—Sierra de Guadariama. A very pretty species, with delicate foliage, flowers of a brownish-yellow, fairly large and glandular. It likes dryness and exposure to the sun.

The third section furnishes :—

*L. alpina*, Miller, of the Alps of Europe, is one of the most pleasing species of the genus. Its glaucous leaves spread on the soil, and form little rosettes, which are pretty objects alone. I do not know what to say of the nice flowers on slender spikes rising from the centre of the pretty tuft. The corolla is of a fine lilac, with an orange spot on the upper side. L. alpina is generally supposed to be an annual or biennial species ; but I have, however, grown some specimens which have lasted five or six years, which proves to me that it is a perennial. Its cultivation is easy. It wants a sandy soil, granitic or slaty, if possible, and very porous. When sown where it is desired to remain it succeeds better than when it is transplanted ; however, if care is taken to transplant it in the autumn it will be sure to succeed. I brought some back from an excursion made on March 2 with my friend, Mr. Scott Wilson, and I notice with pleasure that they have made many roots in the pots into which they were put. They are in a very good condition, and to me appear to be prospering very well. Nevertheless I have observed that the plants raised from seed always become stronger and more floriferous than the others.

*L. petræa*, Jordan, seems to me to be nothing else than a variety of L. alpina. It is peculiar to the chain of the Jura, where the true type, L. alpina, is never met with. L. petræa is stronger and more vigorous than L. alpina. The stems, instead of lying on the ground are erect, or raise themselves at the extremity of their branches, the base of which creeps on the ground. The flowers are smaller, more numerous, and often deprived of the pure orange-yellow spot which characterises the species alpina. It has been flowering until lately on our rockeries.

*L. anticaria*, Boissier and Reuter, of the Spanish mountains (Trocal des Antequera).—L. anticaria is one of the best of the rock plants introduced from Spain. This species differs entirely from those described previously. Somewhat resembling L. alpina, it possesses a great likeness to L. tristis. Its foliage is glaucous and very elegant. Its stems are erect as in L. petræa, but much stronger. Its flowers are large and in compact bunches of a very pale lilac, nearly white, with dark spots on the upper lip. It is multiplied by seeds.

*H. Correvon, Geneva.*

## The Apiary.

### MOVING BEES.

THERE is no better time than the months of November and December for moving hives of bees. Many mistakes are made by novices on this point. If the habits of bees are studied these mistakes will not occur. When bees are provided with "seats and a station," as Virgil says, they immediately mark the spot, and when loaded with honey or pollen rise up into the air and fly in a straight line to their much-loved home. Now, if on a summer evening you move your hive only a dozen yards, you will have the following results :—The bees will rush out the next morning and will fly away to their work, not knowing their hive has been moved. When loaded they will fly straight to the old spot, and, not finding their home, some will fly wildly about the old spot till they sink exhausted ; while others, perhaps, will endeavour to enter other hives, with almost the certain result of being slain. Even if their home is within a dozen yards they would never find it. If it is necessary to move hives in the summer move them a yard or less a day, but even that is better avoided ; and from experience I would earnestly give the advice sometimes given to those about to get married, viz., "Don't."

But this time of the year, as bees are not flying, hives may be moved with impunity. I moved all my hives the first week in November, and I have not lost a bee. The reason is obvious. The bees are not flying at the present time. If a warm day came they would only play about their hives and go in again. During the winter some (very often many) old bees die, and others are born. In fact, a good part of the population by April will be new, and when the bees, whether young or old, take their first spring flight, they will mark the spot and return.

There is no better way of arranging beehives than that called quincunx, or arranging them in fives. To make this clear, just mark off a perfect square on a plot of ground, put one hive at each corner of the square, and one in the middle, *i.e.*, where the diagonals would cross each other. This arrangement was so unintelligent to the ancients, who were by no means so unintelligent as some imagine. Cicero recommended planting trees in this order, and Cæsar applied it in the formation of his army. The advantages are these. The hives are equally distant from each other. Space is economised, because the quincunx system allows the greatest possible number of hives on a given area, and at the same time allows them to be the greatest distance apart. Even the bees teach us the quincunx system, for they make their cells on each side of the honeycomb with a very thin floor or septum between them. But the cellsa re not opposite each other, thus they do not have a common base, but the centres of the bases are arranged in fives, thus giving, at the same time, the greatest strength and the greatest space.

Once more, you may at this season of the year move your hives any distance, great or small, and if the bees, according to the ancient legend, come out on Christmas Eve and sing a carol, be very sure they will go in again when it is sung. *Agnes.*

## FLORAL PYRAMIDS.

THOSE who have only seen Ivy-leaf Pelargoniums in an ordinary pot or bedding plant form can have no idea of the wondrous beauty got out of some of the free-growing kinds when treated to that end, and there can be no doubt that, as shown in the illustration (fig. 153), Mr. Profit, gardener to B. W. Currie, Esq., at that gentleman's truly lovely place at Coombe Warren, Surrey, has succeeded in displaying the highly decorative features of these plants in a very beautiful fashion. As basket plants, or even as ordinary pot plants, these Ivy-leaf forms have proved most serviceable. Generally, as bedding plants, with some few exceptions, they have proved too free of growth and shy of bloom, whilst for trellis, wall, or pillar training they have proved invaluable, though for those purposes they are too little used.

Few men have done more for the Ivy-leaf Pelargonium than has Mr. George, of Putney, and he will no doubt be specially interested to learn that the kinds which Mr. Profit finds so amenable for the production of those marvellous pyramids at Coombe Warren are of his raisng. They are single forms, free growers, and profuse bloomers, not named at the time they came into Mr. Profit's hands, but the colours of the flowers are chiefly rosy-cerise, deep rosy-red, and rosy-lilac. There is no considerable admixture of colours in the sorts employed, not more than two being found in any one pyramid, as a too liberal employment of floral hues might materially detract from the undoubted beauty produced now. These pyramids, and there are many, composed both of these Pelargoniums and of Heliotropes, stand at the outer edge of the upper lawn terrace immediately fronting the quaint yet charming house, and range from 8 to 9 feet in height, with bases from 6 to 7 feet broad. They are not in tubs and composed of single or even of a few plants, for they are planted out, and the secret of the wondrous beauty found in the pyramid lies in the fact that Mr. Profit prepares his plants beforehand, having them of graduated heights, the tallest and those of full height being in the centre, and others worked in when the pyramid is tied out to fill the apex, and thus at the time of planting in May the whole of the trellis is neatly furnished. It does not do to prepare the plants for this sort of decorative work in the preceding year only. Really a large number are propagated every autumn and grown on through the following year in pots, tied close to small sticks, and thus in case of failure of old plants there is always an ample stock to fall back upon at planting-out time. The plants forming the pyramids are all lifted and potted in the autumn. In doing so the leaves are largely removed to enable the wood to be gathered up closely, and thus they occupy but a small space. A little warmth induces root-action and just enough is kept to prevent absolute stagnation until as the spring advances new growth is induced and the greater portion of these old ones live through the winter to go out again, the ample stock of succes-

sional plants on hand helping to fill vacancies. The trellises are composed of iron supports fixed in round the margins of the pyramids and brought together in the form of a cone; over which are secured stout wire and iron hoops, so that there is ample support to tie to. In every instance, not only were the pyramids perfectly furnished with short-jointed growth and luxuriant leafage, but they were almost masses of bloom. Of course, Heliotropes are less gay, but they prove admirable foils to the more glossy Pelargoniums. The method of producing plants is just the same, and the course of treatment throughout identical. At Coombe Warren the true pyramidal form is carefully ensured, but that is not an absolute necessity, for if the plants having once filled the trellis were permitted somewhat free growth, they might develope into gigantic mounds or bushes. In the former case the plants are secure from injury by storms; in the latter they may suffer, although only in exposed positions. Certainly there are few gardeners who have seen or may see these beautiful pyramids but would wish to imitate them. On a wall backing a pretty parterre flower garden, Ivy-leaf Pelargoniums, with a few plants of the variegated Abutilon here and there, have been employed with striking effect to cover it, and there are growing in this garden a large number of dwarf standard plants of the Fuchsia Wave of Life, each some 2 feet in height, and with perfect umbrella-shaped heads, 30 inches over, that are at once singular and beautiful. These show, by their profuseness of bloom, striking foliage, and admirable habit, how very effective Fuchsias may be made in the flower-garden. At Coombe Warren one meets with a series of surprises, for its arrangements are diverse and unique, thus in another small enclosed garden may be found a wall covered with panels of Heliotrope, some 4 feet in width, alternated with half-pyramids of scarlet zonal and Ivy-leaf Pelargoniums. These so arranged prove to be a singularly attractive feature, whilst Ampelopsis Veitchii is being introduced to give a green background to the heads of the half-pyramids another year. Large quantities of standard and sharp-pointed pyramid Laurustinus, Bays, Euonymus, Euryas, and other suitable and striking shrubs are grown here and line the terrace walks, or dot the lawns. Not a few of these pyramids are 10 feet in height, and are most striking. All the features about the grounds are uncommon: as, for instance, a grass bank exposed to the sun planted with large quantities of Heaths in great variety; and in a few years—so well do the plants thrive in the soil—this lot of Heaths will have grown into a perfect mass. The variable features of the house are well matched by the interesting varieties met with in the grounds. Certainly the 30 acres enclosed within the fence, and which forms the pretty estate of Coombe Warren, are now nearly all converted from wild wood and Heather into delightful glades and beautiful smooth lawns, charming terrace garden, or other pleasing features of garden formation; but even yet other alterations and improvements are projected, and doubtless will be carried out. In a large house were to be seen a lot of old standard Orange trees in big tubs: these had been beheaded in the summer, and then stood here with a quantity of stable manure about them to promote bottom-heat, and had broken remarkably well. Being retubbed next spring, they would another year certainly develope grand heads. *X.*



FIG. 153.—PYRAMIDAL IVY-LEAF PELARGONIUM. (SEE P. 684.)

## MESSRS. VEITCH'S NURSERY.

THE large house built for the Cattleyas at this nursery contains, at the present time, but little in the way of bloom to delight the senses if we except a group of Cattleya autumnalis at the northern end, the cheerful tints of this most attractive species making the plants conspicuous a long way off. Nothing can exceed the healthy appearance of the other inmates of this house, the bulbs bigger and foliage stouter and fuller developed than we remember ever seeing in Cattleyas. With fine growth it is only natural to expect fine flowers, and the promise of these, as seen in the thousands of sheaths on the plants, is remarkable.

In the Cypripedium houses about twenty varieties and species were giving evidence of the blooming season having commenced, if, indeed, it ever comes to an end now. Seden's improved variety, named Schroederi, is worthy of especial mention, as being a distinct and pretty flower—the tints more decided and brighter than in the original, and the inner surface of the lip is prettily spotted. The long tail-like side petals are very distinctive appendages of the variety. C. Leeanum is another hybrid which was found in bloom. It is a hybrid between C. insigne var. Maulei and the beautiful C. Spicerianum. The colour of the lip is brighter than in any other insigne variety, and the white colour is disposed as a margin to the dorsal petals, instead of being spread over the greater portion. It is a distinct variety, and worth attention. C. Harrisianum superbum is another handsome flower, the dorsal sepal in this variety being marked with very dark brownish-purple stripes, arranged vertically. Others were C. Ashburtoniæ, C. porphyrophyllum, C. Spicerianum, C. Sedeni, C. barbatum varieties, C. Arthurianum, and C. vexillarium.

A strong piece of Vanda Sanderiana, with a fine mass of bloom on it, had been in flower some few weeks; the long-enduring blooms were showing just here and there slight signs of decay. Few Orchids last so long in bloom as this, or are of easier culture.

The curious Angræcum recently mentioned in these pages was observed in a small specimen carrying two blooms, the plant being accommodated in a teak-wood basket.

A few Oncidiums were blooming, notably O. Jonesianum and O. Kramerianum; a few also of Phalænopsis, as violacea fragrans and P. Sanderiana, but the bulk of the species were exhibiting only many long and strong spikes, yet to open in their proper season. P. Esmeralda was just past.

In Odontoglossums there were in flower O. Rossi, a winter-blooming Mexican species, with white and purple flowers, always grateful at that season. There were a good many shades of colour noticed amongst these winter gems of the Orchid-house.

Pleiones, that associate well with the last-named, were likewise observed to be still in bloom. Of forms of Odontoglossum crispum, there was seen much variety in the numerous lovely spikes that were open in the house set apart for these plants. In the same were Oncidium O'Brieni, a diminutive flower of brown and gold, a useful thing in personal decoration, but not much of a decorative object in a pot—O. varicosum and O. incurvum lighting up with their bright hues of white, and brown, and pink.

Trichosme suavis and Calanthe veratrifolia, the first conspicuous by the scent of its minute blooms, and the other by its pure white flower-spike, were in flower in the Odontoglossum house.

In other houses Ipomœa Horsfalliæ alba was showing many flowers, trained under a rafter; the late flowering Amaryllis aulica platypetala, a Brazilian species of some beauty at this time when the showing hybrids are at rest; and the Æschynanthus splendens, a plant every one with a stove ought to have, were showing bloom. As a greenhouse winter flowering plant, Babingtonia camphorosma is worthy of mention; it is not showy in any stage, but it is neat, elegant, and useful, either in the cut state or on

the plant, and blooming at this time is an additional merit. The colour is white, the flowers being single, salver-like, and disposed in erect spikes. *M.*

GREENHOUSE RHODODENDRONS.

The collection of greenhouse Rhododendrons to be seen at the present time is one full of interest to the visitor, for they are not only very attractive, but they afford an illustration of how rapidly an improvement of a marked character can be made with a flower when subjected to the operations of an intelligent cross-breeder.

The first of the race—Rhododendron javanicum—was introduced from Java in 1846, and in 1849 R. jasminiflora, a beautiful species with pure white flowers, having a pink eye, came from Malacca. This is a plant of an intermediate character, between a stove and a greenhouse subject, and should be grown in an intermediate-house. In 1860 R. Lobbi was introduced from Penang, and all three were grown at the Exeter Nurseries, by Mr. Taylor. This came from Mr. Lobb, and proved of great service by giving salmon and buff colours: and to all appearance gave other tints also of a desirable character. The first cross made by Mr. Taylor was at Exeter, between javanicum and jasminiflorum, and from this came Princess Royal, with long funnel-shaped tubular flowers of a bright rose-colour; and Princess Alexandra, with flowers of the same shape, pure white in colour with pink stamens. There is no doubt but that the long-tubed character of the flowers was derived from R. jasminiflorum.

The main business of the firm having been removed from Exeter to Chelsea, Mr. Taylor went thither with his Rhododendrons, and resumed operations in the way of crossing. Lobbi, javanicum, and jasminiflorum were crossed in various ways. From this came Duchess of Connaught, brigh vermilion-red; Duchess of Edinburgh, bright orange-scarlet; Taylori, bright pink; Maiden's Blush, white, suffused with the most delicate rose; and Princess Fredrica, soft pale buff, becomingly tinged with rose. Duchess of Edinburgh appeared in 1874; Maiden's Blush and Princess Frederica in 1876; Taylori in 1877; Duchess of Teck, bright buff-yellow, dashed with orange-scarlet, and Prince Leopold, salmon-buff, in 1879; Duchess of Connaught in 1881, and Queen Victoria, light buff-yellow, suffused with rose, in 1882. These were all the results of Mr. Taylor's work, and all of the varieties were awarded First-class Certificates of Merit by the Royal Horticultural Society.

At this point Mr. Heal took up the work, and crossed several of Mr. Taylor's hybrids, and any fine seedlings that were available for the purpose, with the result that all the new varieties raised during the past three or four years are great improvements upon those which preceded them. Monarch, Sir Garnet Wolseley, Excelsior, Favourite, Sir B. Seymour, and Aurora appeared in 1882; Baron Henri Schroeder, Princess Christian, Thomas Moore, Scarlet Crown, Diadem, and Brilliant, in 1883; Princess Beatrice, President, Empress, and Conqueror, in 1884. During the past summer the following have been named:—Militaire, Cardinale, Incarnatum floribundum, Indian Yellow, Pearl, Minerva, and Apollo. Nearly all of the foregoing have received Certificates of Merit from the Royal Horticultural Society, and all are single-flowered types.

There are something like three double-flowered varieties, and they originated in this way. Some seed was sown in 1876, and among the progeny Mr. Heal noticed one flower with a tendency to develope other petals in the centre; all the flowers but this were removed from the truss, and it was fertilised with its own pollen; from this cross came Balsaminiflora, rose; Balsaminiflora alba, white; and Balsaminiflora aurea, yellow.

The seed of the hybrid Rhododendrons is sown as soon as ripe in a gentle heat, and it germinates in three weeks or a month, but some more quickly than others. In twelve months they are in the thumb-pots, and then grow on, and bloomed in 48-sized pots; but none of them flower under five years. But little culture is necessary for seedlings, except that the plants are kept in a fitting temperature, kept clean, and not allowed to suffer for want of water. The soil used is two-thirds peat, one-third loam, and a little sand.

These Rhododendrons are increased both by cuttings and by grafting. Cuttings may be put in at any time of the year; a shoot is taken off at a joint, put into a thumb-pot of peaty soil with some sand on the top; generally the cutting is at the side of the pot, and the pots placed in a gentle bottom-heat. In autumn two months will expire before they take root; but in spring they root much more quickly.

Grafting is the more rapid process by which stock is increased. The best stocks are Princess Royal and Princess Alexandra. If a graft be taken with a good well-formed bud it will flower, and it is in this way the tiny flowering plants sometimes seen at South Kensington are produced.

The double varieties are very persistent in the duration of their blooms, and will last six and seven weeks in flower. They produce no pollen, and any additions to the group can be obtained only by the self-fertilisation of flowers producing superabundant petals. *R. D.*

## TREES AND SHRUBS.

TAXUS BACCATA FASTIGIATA (THE IRISH YEW).—Unique examples of this very distinct variety of a dark green fastigiate form are more or less common in many of the more important gardens of the West of England. In the geometrical garden at Montacute House, in Somersetshire, are very handsome specimens, and Messrs. Lucombe, Pince & Co., Exeter Nursery, have some of the largest and finest I am familiar with (I say familiar advisedly, for I have known these intimately from my childhood), and they are flourishing in their prettily designed Italian garden. For contrast, there are some admirable dwarf rounded masses of Abies clanbraziliensis and hemispherical Golden Yews, and pyramidal variegated Hollies, among which some handsome vases are interspersed, the whole producing an excellent effect. Altogether there are seventy-two of these grand formal-looking Irish Yews in this Italian garden.

SOPHORA VIOLACEA.

From its dwarf and compact, early flowering habit, this plant would seem to merit cultivation as a stove flowering subject. The leaves are long, narrow, and pinnate, with ovate and oblong obtuse leaflets. The inflorescence consists of terminal and lateral many-flowered racemes of blue or violet coloured flowers, the individuals of which are rather small. The upper petal or standard is much the larger, and serves to give character to the whole flower. The flowers are abundantly produced in the wild state, and a plant flowering lately in the stove at Kew was only 1 foot high. It is a native of Ceylon, and is found near the seashore on the south-west of the island, about, or not far from, Matura. The long jointed seed-pods produce seeds but sparingly, and these, being comparatively large in this as well as other species, give the fruit a knotted appearance, reminding one very forcibly of jointed Charlock. This species has recently been introduced to this country, and does not seem to have been figured anywhere. *J. F.*

PICEA PINSAPO CONING.

In the *Gardeners' Chronicle* of October 10 there appears an illustration of Abies Pinsapo, or more commonly called Picea Pinsapo (fig. 99, p. 465), also on p. 468 an account is given of the above tree bearing cones at Penrhyn Castle. Here, at Chesterford Park, one tree is loaded with cones—over 200; another with 100, and one with fifty. They do not grow singly on the branch as represented in the illustration, but in groups of various numbers. *Henry Eldridge.*

CASTANEA PUMILA

is to be recommended for its dwarf habit (3 to 4 feet), hardiness, and profuse production of catkins of white flowers, which contrast well with the dark green leaves. M. Goeschke, in the *Garten Zeitung*, recommends that the tree or bush be cut down occasionally, so as to induce the formation of new shoots, on which the flowering spikes are produced. It is a native of the Southern United States.

DESFONTAINEA SPINOSA.

I notice that during November and December of 1877 there was much interesting correspondence concerning this charming Peruvian evergreen flowering shrub in the *Gardeners' Chronicle*, and at p. 787, vol. viii., Mr. G. Dodd, of Woodstock Park, Kilkenny, promised to plant a bank of rockwork with ten dozen plants at 600 feet above sea-level. He also speaks of a specimen, 3 feet 9 inches by 4 feet, having flowered well with him that season, and that its longest annual growth was 9 inches. Now after a lapse of eight years it would, I am sure, be useful information to many (presuming that the said plantation was made) to know how this bank of 120 Desfontaineas succeeded, and their condition and appearance at the present time. There is something so quaint about its shining, spiny, Holly-like foliage, and its singular Fuchsia-like flowers. In Cornwall it is quite at home, and perfectly hardy; in fact, it is comparatively a common shrub there, and I remember seeing huge specimens in flower not long since in the highly ornamental grounds of Scorrier House, near Truro, but I have only met with a few small plants in Devonshire, excepting at Chaddlewood, Plympton, where are some of the finest specimens I know. The Desfontainea has never come under my notice in the adjoining counties. *W. Napper.*

## THE ORCHID HOUSE.

SEASONABLE NOTES: CATTLEYAS.

THE weather during the first half of November has been more than usually trying to Orchids of all sections; but there is, I fancy, most danger of the occupants of the intermediate-house being injured during a long spell of dull weather. The right thing to do under the present trying conditions is to avoid unduly exciting the plants into growth. Take the Cattleyas, for instance. We have in our house two descriptions of plants—those that made their growth very early, and those that made late growths, or have not yet completed them. With large specimens of such Cattleyas as C. Mossiæ, C. Mendelii, C. Trianæ, &c., there is no difficulty; they make their growths steadily after the flowering period is over, and steadily rest until it is time to develope their beauties, which they do with regularity. On the other hand, recently imported plants that have not flowered—or, perhaps, have done so once only—are with difficulty restrained; they made strong flowering growths in the summer, and unless most skilfully controlled they will again start into growth at most uncertain periods during the autumn and early winter months.

How is this unseasonable and useless growth to be prevented? It cannot be prevented entirely, but it may be held in check by close attention to the habit and vigour of the plants. When a very vigorous young plant has made its growth it ought to be kept rather dry at the roots, and in a cooler, more airy place. This is all that can be attempted at present. We have many plants of recently imported Cattleyas and Lælias which are yet in all stages of developement and formation of their pseudobulbs. We have placed such in the lightest and warmest part of the house, where they will continue slowly to develope their growths through the winter months.

Some of the Pleiones have gone out of bloom, others yet continue to develope their delicate beauty and tracery of colouring in the gloom of this murky month. They should be potted once in two years, and as soon as they go out of bloom. The young rootlets are already pushing out from the point where next season's flowering bulb is starting, and the sooner they are potted the less probability there is of injury. Some people grow them in shallow Orchid-pans; I fancy they grow stronger in ordinary flower-pots. The pots during the season become full of roots; a sure sign that they require more space than shallow pans can possibly afford them.

Enough has been said about Vanda cœrulea, but these are now in full beauty here, arranged in a group with Ferns and other plants. They remain a long time in flower at this season, if the atmosphere is kept rather dry, and the temperature not more than 50° to 55° at night. The roots are not very active at present, and the plants do not require much water. Cymbidiums are now growing freely; indeed, this is a good time to repot any of them that may require it, especially such as C. Lowianum. The flower-spikes of this species are now pushing from the base of the last formed pseudobulbs; when this takes place they may be repotted. Some persons use peat only; others loam and peat mixed; while they have been found to do well in soil used for bedding plants.

The ordinary daily management of the houses consists in keeping up a night temperature of about 55°,

falling to 50° in cold weather. The amount of evaporation must be regulated by the weather. In close damp weather use water sparingly, and more freely when the pipes have been well heated to keep out sharp frosts. The atmosphere may be too dry, but it is more likely to be too moist, and it is better to err on the dry side.

ODONTOGLOSSUM CIRROSUM AND OTHER ORCHIDS.

I grow this species in the Cattleya-house during the winter months, and in the cool-house in summer. When they were grown in another cool-house, well exposed to the sun in winter, they did not require removal to the Cattleya-house. Our cool-house is now a lean-to, with a north aspect, and plants that succeeded well in the old house will not do in this during winter. The O. cirrosum is an illustration; the plants would all have been dead by this time if they had not been removed to the intermediate-house in winter; this was proved by keeping some of the plants in the cool-house. We grow the O. Rossi majus and O. Cervantesii in the cool-house; they are there now, and are doing well—just as well as the O. cirrosum are doing in the Cattleya-house. Cœlogyne cristata, Lælia anceps, and Lycastes we grow in the Cattleya-house. Referring for a moment to Lycaste Skinneri, we had two plants in the cool-house which made no progress. I moved one of them into the Cattleya-house, with the result that this plant very speedily grew away with much greater vigour than the other still in the cool-house; that plant was ultimately removed into the warmer house, where they are both doing well. I well remember the magnificent specimens of Lycaste Skinneri grown by Mr. Ward at The Poplars, Leyton, in a cool-house not any warmer than our own; we have treated them the same, but cannot command a like success; I am, therefore, quite prepared to admit that it is not easy to lay down a general rule as to the treatment of Orchids, but cannot admit that it is impossible to do so. It is quite possible, if all the cultural details are given, and the conditions under which the plants are grown. I believe success is attained in every branch of horticulture and floriculture by attention to the most minute details of the work, and have constantly urged the desirability of this. The position in which the plants are placed in the house is of very great importance also. The plants of Odontoglossum Rossi majus and O. Cervantesii are suspended close to the glass in baskets in our cool-house: perhaps they would not succeed so well as they do if they were placed on the stage.

Lælia autumnalis and L. majalis require rather different treatment; we are trying about a dozen plants of each placed quite close to the glass, and well exposed to the sun, in a warm greenhouse temperature, 40° to 45° in winter, with ample ventilation, keeping the plants very dry at the roots, but not altogether without water. I have been successful in growing and flowering L. autumnalis year after year, but cannot boast of a like success with L. majalis. *J. Douglas.*

# The Flower Garden.

THE next two months is the most trying time for bedding-out plants which, by being kept too closely shut up, damp and mildew will attack them. Air should be given freely on fine days, and keep the plants carefully looked over and all decayed matter should be removed. See that all pits and frames are well protected at night; all tender plants, such as Coleus and Alternantheras, should have a minimum temperature of 60°—they do not winter well in a lower temperature, but most of the other flower garden plants will winter and be all the better in a temperature of 40° to 50° if they are kept dry both as to soil and atmosphere. Always water on fine days, and give plenty of air to dry the plants off.

TRANSPLANTING.

As the weather keeps mild this work should be pressed forward with all possible speed, so as to complete it before a change takes place. When frost and snow set in there will be but little chance of delicate shrubs succeeding, as the temperature of the soil decreases so rapidly at this season, and the atmospheric conditions are also most unfavourable to growth. The operation of transplanting should not be delayed a day longer than is necessary. This work should be performed skilfully and quickly with great care not to expose the tender roots to the effect of the cold cutting winds, which is the cause of so many failures, and cannot be too strongly condemned. To obviate this mats should be in readiness. As soon as the tree or shrub is taken up the roots should be covered till it is replanted. Before commencing to plant either trees or shrubs the object and use for which they are ultimately intended should be duly considered, and only select such trees and shrubs whose habits and characters are found more suitable for the purpose intended. Due care should be taken to plant such kinds only as will succeed in the soil and situation to be planted. Inattention to these matters is too frequently the cause of failure and disappointment. Great care and attention should be paid to digging large holes, and where the soil is bad good fresh soil should be provided to plant the trees and shrubs in. As the operation proceeds every plant should be watered and mulched with litter, which protects them from frost and also from the cutting north-east wind in spring. The soil should be made firm round the stem and roots, and the stem firmly secured against wind and storms. *W. Smythe, The Gardens, Basing Park, Alton.*

# The Propagator.

THE PROPAGATION OF CONIFERS.

(*Continued from p. 527.*)

THE Thuiopsis varieties are excellent for ornamental purposes. In small pots they will last a considerable time in healthy condition, and are, therefore, very useful for the decoration of cool conservatories and winter gardens. A general batch of the cuttings should be taken at this time of the year.

*Thuiopsis dolabrata*.—For the cuttings ripe and well developed pieces of the side growths, from 2½ to 3 inches in length, should be selected. The botttoms of the stems should be levelled with a sharp knife, and any small leaves for an inch up the stems should be trimmed off. Twelve pieces can be dibbled round the edge of a 48-pot, and four in the middle. Each piece should be pressed in firmly, and the holes caused by dibbling should be filled up with dry sand. After having been watered the cutting-pots should be placed on a cold bottom in a shallow case or frame. While in the frame they must not be watered overhead, but with a fine spout-pot, and this must be done carefully to prevent the soil being washed up. Air must be given for an hour in the morning and for half-an-hour in the afternoon, and on sunny days they must be shaded. As soon as the cuttings are well rooted, the lights of the frame should be raised an inch, and left so day and night, and as the plants gain strength the lights should be raised higher and higher, until at length they are strong enough to be stood out upon the open platform of the house. They should be kept out upon the open platform for about ten days, and then be potted off into small 60-pots. After having been watered they should be placed on a coal-ash bottom on a front platform. The house, by the way, should be heated just enough to keep out the frost.

When the plants have rooted through small 60's they should be potted into small 48's, watered, and replaced on the platform. They can be potted again when they are strong enough. They should be carefully watered during the winter months, and not allowed to become dry. As soon as the plants are well developed they can be taken to a cold house or frame, to be taken from thence and used for decorative purposes as required.

The cuttings of T. dolabrata variegata, T. borealis, T. b. variegata, and most of the Cupressus, can be treated in a similar way after they have been potted, but, unlike T. dolabrata, it is better to pot these cuttings into long thumb-pots,

The soil for the cuttings should be made up of half good yellow loam, quarter peat, and quarter sand and additional small quantities of charcoal and potsherds, both finely broken up. The soil should be well mixed together and sifted and rubbed through a quarter-inch-sieve. 48-sized pots or deep pans should be used for the cuttings of T. dolabrata. The pots should be well drained and filled with the soil abovenamed, pressed in level with the rim of the pot. The soil should be watered before the cuttings are dibbled in.

When the plants are potted into 60's and afterwards, the soil used should be composed of half good yellow loam, quarter leaf-mould, and quarter river-sand, and small quantities of charcoal and ballast. *T. O'B.*

# Fruits Under Glass.

PEACHES AND NECTARINES.

IN the second division all ordinary work, as cleansing the house, &c., should be done off-hand. Prune the trees, and wash them with weak soapy water and a soft brush, and after cleaning the trellis, regulate and tie the trees to it again. Take about 3 inches of the old stuff off the surface of the border, and replace it with fresh material of a similar nature, and afterwards mulch and well saturate the border with water, and all will be ready for starting the trees at the time appointed.

LATE PEACHERIES.

These of late years have wonderfully increased in numbers by reason of many of the old Peach walls being now covered with glass constructions. This move undoubtedly is in the right direction, particularly when the variableness of our climate, and its detrimental effects on these subjects when fully exposed to the elements, is duly considered. The reasonable cost of appliances now-a-days also has materially conduced towards the same end, so that with structures, and the means in them to exclude frost, with proper attention, the crops may safely be depended on under any external conditions whatever. As Peach and Nectarine trees can be transplanted and moved so readily when they have been properly planted beforehand without much damage to them being apprehended, no hesitation need exist in the mind of growers of limited experience about loss accruing to the subsequent crop through the operation. It more often happens that this is made even more satisfactory in every way. Trees of a reasonable size, or others can with safety be moved at any time when not frosty in the interval between November and March. Although it is computed by some that great advantages result from early planting of these subjects, I have as yet failed to discover any, and prefer, under whatever conditions the trees are placed, to let the wood of the current year's growth be as well matured as possible, before doing so. In the process of planting the chief matter to see to at the time, is to have the roots moist and to embed them firmly in the soil, and keep them moist subsequently. Any trees in an unsatisfactory state should have the roots seen to now, and those that are over-exuberant should be partially lifted, the roots shortened, and replanted. *G. T. Miles, Wycombe Abbey.*

# The Kitchen Garden.

ROOTS.

IT would be advisable to lift from the open quarters at once such roots as the following:—Asparagus, Parsnips, Jerusalem Artichokes, and Horse Radish—just sufficient for a few weeks' supply in case sudden sharp frosts should harden the ground and stop the lifting from open quarters. These should be laid in close together where protection will prevent the soil freezing much, so that a few thongs may be drawn out for use at any time, no matter how severe the weather may be. The bulk of the main lot of Parsnips and late sown Carrots will be best left in the ground and dug up as required.

The main sowing of Carrots which have completed their growth should now be lifted, trimmed and stored in a cool cellar, or in a clump out-of-doors, similar to Potatos. When storing, reject all damaged and split roots from the bulk.

Seakale roots which are intended to be removed from the open ground and forced under cover, should be lifted at once. Until required for forcing they should be laid in thickly in well drained soil, and the crowns protected from frost with leaves and litter. When lifting the plants save all the largest thongs for making cuttings for next spring's planting.

The cutting may be made at once, or the roots selected for this purpose may be placed in damp soil in a shed, or out-of-doors under protection. The cuttings can then be made at convenience when the weather is unfavourable for other work. Permanent plantations of Seakale and Rhubarb should have some leaves and litter placed over the crowns, and on the approach of severe weather some Rhubarb roots should be lifted for forcing. *G. H. Richards, Somerley.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Nov 30 | Sale of Dutch Bulbs, Roses, Fruit Trees, &c., at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms |
| TUESDAY, | Dec 1 | Sale of Roses, Plants, Bulbs, &c., at the City Auction Rooms, by Protheroe & Morris. |
| WEDNESDAY, | Dec 2 | Sale of Dutch Bulbs, Roses, Fruit Trees, &c., at Stevens' Rooms. Sale of Plants, Roses, &c., at Protheroe & Morris' Rooms Sale of Nursery Stock, at Cranston's Nursery, Hereford, by Protheroe & Morris (two days) Annual General Meeting of the National Rose Society. |
| THURSDAY, | Dec 3 | Sale of Imported and Established Orchids, and 5000 Lilium auratum, &c., at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Dec 4 | Sale of Imported Orchids, at Protheroe & Morris' Rooms |
| SATURDAY, | Dec 5 | Sale of Bulbs, Roses, Fruit Trees, &c., at Stevens' Rooms Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

THE announcement that at the end of this month KEW GARDENS will be without a HOOKER at their head will be read not only with regret, but with something approaching to consternation. Kew and HOOKER, HOOKER and Kew, were, as it seemed, so inseparably combined that no severance could take place. If a HOOKER did not plant the seed he transferred it from the seed-bed and nursed it till it became a goodly tree, while another HOOKER still further developed the tree till it bore abundantly of flower and fruit and seed. In painer terms, Sir WILLIAM HOOKER found the garden at its lowest ebb. Shortly before his accession to the office of Director, to such a state of stagnation had the garden arrived that it was seriously proposed to hand over the collections to the Horticultural Society. In consequence of the report and recommendation of the former Editor of this journal, Sir WILLIAM (then Dr.) HOOKER removed from Glasgow, where he had already done wonders in establishing and maintaining a botanical correspondence and interchange of plants with all parts of the world, and assumed the post of Director of the Royal Gardens, Kew. Those who remember the old state of things, speak of HOOKER'S transforming touch as something magical. By his clear-headedness, his untiring diligence and zeal, his extensive knowledge, his stately courtesy, and the encouragement he extended to all occupied in horticulture and botany, he raised Kew in a very short time from its low estate, and with the assistance of the ex-Curator, who still survives, made it the botanic garden of Europe. Actually dying in harness, at a ripe old age, just twenty years ago, Sir WILLIAM was succeeded in the directorate by Dr. (now Sir JOSEPH) HOOKER. The career of the son is well known, at least its main features, to every botanist, and to most gardeners. His early travels in the antarctic regions with Sir JAMES ROSS, his adventurous wanderings in Sikkim Himalaya, whence he introduced so many of the glorious Rhododendrons, gave him fame, if not fortune, and on his return from India he occupied himself with the determination and distribution of the immense collections made by himself and Dr. THOMSON, and shortly after became Assistant-Director of the Gardens under his father, so that on the decease of Sir WILLIAM in 1865 it was universally felt that he, and he alone, was a fit successor.

During the twenty years that have elapsed, the record of Kew is one that the proudest administrator might envy; the area has been greatly extended, the succulent-house, the T-range, have been erected, old houses have been removed, the herbaceous ground remodelled, the fruticetum and rock garden constructed, the arboretum vastly extended, the museums (three in number) greatly enlarged and improved, the new herbarium built, the "North" gallery installed, the Laboratory erected. The two latter establishments testify to the confidence reposed in the Director. Such munificent gifts would never have been made to the public had there not been a general admiration of the administrative ability and competence of the Director. While all this new work has been undertaken and carried to a successful issue the maintenance and improvement of the old have been such as to elicit admiration; and herein the chief has been well seconded by the Assistant-Director, Mr. DYER, Mr. JOHN SMITH (who occupies the same position that his namesake did under the directorate of Sir WILLIAM), and the other officers of the establishment.

So far we have alluded to results which all can see for themselves, but all the time that this work of extension, supervision, and maintenance has been going on, a vast amount of work has been thrown upon Sir JOSEPH, or rather he has himself developed it in connection with India and our colonies. The father, Sir WILLIAM, early endeavoured to make Kew the great botanical centre of the English-speaking world, and the idea has been fully developed by the son. Kew is now the head centre of a series of botanic gardens and similar establishments throughout the empire. The diffusion of information, the interchange of plants has been most beneficial, but it has entailed on the directorate at Kew a vast amount of correspondence on all matters connected not only with scientific botany but with practical or economic botany, and with methods of cultivation. In this way Kew has taken a large share in the collection and dispersal of the Cinchonas in India and elsewhere, which is of untold and ever-increasing value. A similar statement may be made with reference to Tea, to Gutta-percha, and Caoutchouc yielding trees, and to very many more useful plants distributed mainly through the agency of Kew. This is, indeed, a vast work, but one of which but few of the hundreds of thousands of annual visitors to Kew know anything. While all these labours have been carried out unintermittingly Sir JOSEPH has found time to undertake and carry through an amount of purely scientific work which if he had done nothing else would have of itself been considered remarkable. We have not space to do more than mention his many classical papers, on systematic Botany and Botanical Geography, his Floras of the antarctic regions, of New Zealand, of Tasmania, and his co-operation with the late Mr. BENTHAM in the elaboration of the *Genera Plantarum*. When one calls to mind the amount of detail and drudgery which must have been encountered to bring such works to a conclusion it becomes a matter of astonishment how in the midst of the official duties of administration so much can have been achieved. But this is not all. While all this was in progress Sir JOSEPH, abandoning the traditions of his early education, warmly adopted the now generally accepted Darwinian views of evolution, took his share in the government of the Linnean, the Geographical, the Geological, the Royal, and of other Societies. For a few years he filled the chair of NEWTON at the Royal Society; he has presided over the British Association, and taken much active interest in the Royal Horticultural Society, over the Scientific Committee of which he has presided for some years.

It is no matter for wonder that Sir JOSEPH should, after twenty years' such labour, varied by travel in Western America, and in Syria, and in the far less accessible Morocco, desire to be relieved from the strain and responsibility of official duties, but his reasons are characteristic. The *Flora of British India* has occupied several years to bring it to its present state, with the assistance of several collaborators; at least a third remains to be accomplished. Apart from his pre-eminent capabilities as a botanist Sir JOSEPH has a knowledge of local and special matters relating to Indian botany that no one else possesses, or is likely to possess. To obtain leisure to complete the *Flora of India* is, then, one of the main reasons which have induced Sir JOSEPH to tender his resignation. It is some satisfaction to know that the completion of this work will necessitate his frequent presence at Kew (though in an unofficial capacity). There, in the noble herbarium originally formed by his father, so largely extended by himself, and in which so much of his own life and work has been spent, Sir JOSEPH will, it is to be hoped, find leisure to complete those works which heretofore must have been sadly hampered by administrative duties.

In any case we respectfully offer to Sir JOSEPH, on his retirement, the expression of our admiration and gratitude for his botanical services, and for the proud consciousness that, much as we may be behind some nations in certain branches of science, in no country in the world is there an establishment of like nature which can take rank with Kew.

—— APPLE AND PEAR CONGRESS, EDINBURGH.—We have obtained through our reporter a skeleton report of the fruits of Scotland, Ireland, and Canada. That for England, which was represented by sixteen counties, and Wales by one, will appear, together with more detailed information, in our next issue. The exhibits noticed are stated to be the most important of the show.

—— "HOLLY LEAVES."—The Christmas Number of the *Illustrated Sporting and Dramatic News* has been published, and will be found varied and attractive. The woodcuts are numerous and good, and the coloured plate alone worth the money.

—— LINNEAN SOCIETY OF LONDON.—A meeting will be held on Thursday, December 3, at 8 P.M., when the following papers will be read:—1. "On Castilloa elastica and some allied plants," Sir J. D. HOOKER. 2. "Effects of the Solar Spectrum on the Transpiration in Plants," Rev. G. HENSLOW. 3. "Parasites collected by the late CHARLES DARWIN," Professor COBBOLD. 4. "Variations of the Cirri in Comatulæ," P. H. CARPENTER.

—— BEURRÉ CLAIRGEAU.—MR. EWBANK writes that, not having the record at hand when he wrote previously, he under-estimated the produce of this tree. We now learn that from one tree the gardener plucked *manu propria* 300 large Pears. At least another hundred were gathered early to obviate damage by the wind, or were blown off. These windfalls were all utilised in one way or another.

—— "JOURNAL OF THE SCOTTISH METEOROLOGICAL SOCIETY.—This valuable publication contains the third of Mr. BUCHAN'S papers on the climate of the British Isles, and which is devoted to the consideration of the rainfall. Mr. BUCHAN here has made use of the very extensive series of records got together by Mr. SYMONS. The heaviest rainfall —80 inches and upwards—occurs in Skye, the Lake district, and the mountain districts of Wales. Dartmoor is nearly as wet, as also is Galway. In the Lake district, at Stye, the rainfall amounts to as much as 185 9 inches, at Beddgelert, in Wales, to 116 9 inches. The smallest rainfall, from 22—25 inches, occurs in the south-eastern districts. Everywhere it is seen that the key to the distribution of the rainfall is the direction of the rain-bringing winds, to the physical configuration of the surface. Tables are given showing the mean annual rainfall for 547 places in Scotland, 1080 in England and Wales, and 213 in Ireland. Papers follow on the meteorology of Ben Nevis, of Culloden in Inverness-shire, of Dundee, Central Uruguay, San Antonio (Buenos Ayres), of the several northern lighthouses, as well as tabular results of very numerous stations in Scotland, the whole forming a most valuable mass of statistical information for future use.

—— "AUSTRALIAN ORCHIDS."—The last part of this valuable publication, embodying the observations of Mr. FITZGERALD, and with full-sized illustrations and copious analytical details, is before us. The species figured and described are Eriochilus autumnalis and scaber, Caladenia reticulata and leptochila, Bolbophyllum minutissimum, Galeola Ledgeri, Chiloglottis trilabris, diphylla, Gunnii and Muelleri;

Cryptostylis longifolia, C. ovata, Pterostylis recurva and turfosa, Cleisostoma Beckleri, C. Keffordii, Thelymitra crinita and T. mucida. Very few of these would find favour with those who grow Orchids only as pretty flowers, but to real Orchid lovers and students many of them are of very great interest, and by them Mr. FITZGERALD's notes and illustrations will be very highly valued, as indeed they deserve to be. Bolbophyllum minutissimum has already been mentioned in our columns as the tiniest of Orchids. It looks more like a Jungermannia at first glance than an Orchid. It grows on rocks in wet situations exposed to the sun at Ballina, on the Richmond River, and was first found in 1849 on the site where now the city of Sydney stands. It is one of those species likely soon to disappear. Mr. FITZGERALD shows that it is distinct either from Dendrobium or Bolbophyllum. Contrasting strongly with this is Galeola Ledgeri, the subject of the next plate. This is the largest Orchid in Australia, and is found in the same locality as the preceding. It is worthy a place in the collection for its showy appearance. It is an epiphyte growing on trees, with no true leaves, but leaf-like bracts at the base of the main branches of the inflorescence. From the nodes opposite to these bracts, and also from the ordinary nodes, proceed long roots [?] which dilate at the distal end into flat sometimes lobed and digitate expansions, by means of which it adheres to the trees. These are very curious, and their development and structure should be studied by those who have the chance. The yellow flowers are numerous, in loose branching panicles, sometimes 6 feet in length, by 3 feet in breadth. Each flower measures 1½ inch and upwards across. The five segments are oblong acute, waxy, dull yellow, the lip projecting, trowel-shaped, rosy-pink in colour, and covered with numerous irregular fleshy lobe-like processes. Chiloglottis trilabra has all three petals lip-like, as happens in cases of peloria, but the lip still differs from the other petals in being jointed, and therefore adapted to insect fertilisation, the lip acting as a spring and pressing the insect visitor with its load of pollen against the column. The species of Thelymitra have nearly regular flowers (as in regular peloria), but nevertheless, according to Mr. FITZGERALD, they are fertilised by insects, or rather "fertilisation passes in Thelymitra from total dependence on insects to constant self-fertilisation, according to the cohesive or crumbling character of the pollen."

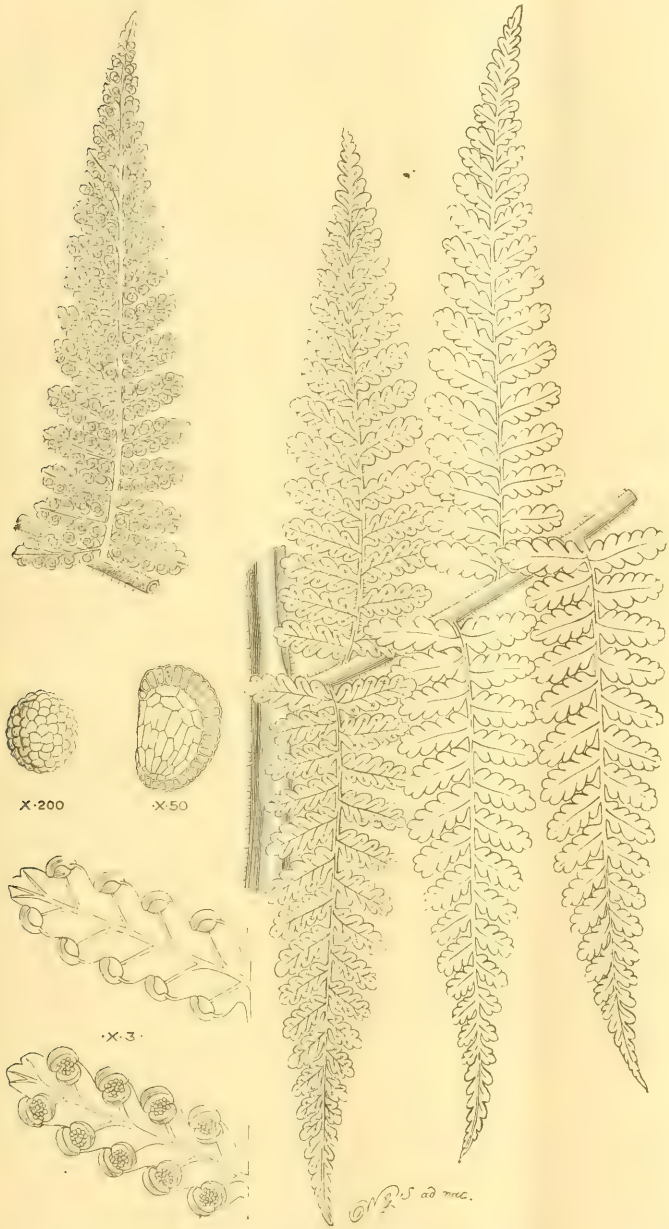



FIG. 154.—DICKSONIA LATHAMI.

—— DICKSONIA LATHAMI.—We are now enabled to give a figure (fig. 154) showing a portion of the frond, and some botanical details of the noble and remarkable Fern described by our old colleague, Mr. THOMAS MOORE, at p. 584. The interest attaching to it is enhanced by the probability of its hybrid character.

—— A HYBRID PALM.—Some years ago M. NAUDIN mentioned in our columns the fact that the flowers of Chamærops humilis, fertilised by the pollen of Phœnix dactylifera, had produced fruits and seedlings. Some of the latter have since flowered, and M. CARRIÈRE gives, in a recent number of the *Revue Horticole*, an account of a second cross effected by fertilising the flowers of the hybrid with pollen from Chamærops excelsa. The original hybrid received the name of Microphœnix decipiens × ; M. CARRIÈRE now proposes the name MICROPHŒNIX SAHUTI × for the new hybrid raised by M. SAHUT, of Montpellier. From the description given it appears that the new hybrid is quite intermediate between its parents, resembling the pollen-parent in the fruit and the purple colour of the base of the leaf-stalk, and partaking of the habit, mode of growth, and foliage of the seed-parent.

—— LILIUM POLYPHYLLUM.—The *Illustration Horticole*, t. 565, gives a coloured figure of this handsome Afghan Lily, which has lanceolate leaves, drooping funnel-shaped flowers, about 4 inches long, with recurved segments, yellowish, sprinkled with reddish-purple spots of about the same length as the narrow flower tube.

—— PLANT LICE.—Those who read French will be glad to possess M. LICHTENSTEIN'S *Les Pucerons*, for Mr. BUCKTON'S splendid work on *British Aphides* is, unfortunately, not likely to be available for the majority. The part before us contains a list of the works consulted by the author, a complete list of species and genera, and, what is of great service to botanists and cultivators, an alphabetical list of all genera of the plants known to be affected by particular aphides, with the names of the latter. Thus, species of Rosa find sustenance for ten different species of aphis, species of Salix to twenty-three; Fuchsias have but one species, and Aconitum is also only credited with one, but as the latter plant is as poisonous (to man) as the Fuchsia is harmless, it would seem that one which is a man's poison may be an insect's food. To these lists follow chapters on the anatomy and life history of the insects, which are of the greatest importance to cultivators, as in the case of the Phylloxera, but which we cannot here enter into, partly by reason of their complexity, partly because some of the most important matters connected with it are still matters of controversy. Three coloured plates, illustrative of various galls on the leaf-stalks of Poplars, accompany this useful

treatise, which may be had of WILLIAMS & NORGATE, or other foreign booksellers.

—— BROMELIADS.—The sixth part of M. F. ANTOINE'S magnificent publication, *Phyto Iconographie der Bromeliaceen*, has lately been issued. It consists of large folio lithographic plates, partly coloured and showing the habit and details of the species. The species illustrated are Karatas Innocenti, t. 26, sometimes referred to Nidularium, the innermost or floral leaves of the nest-like tuft being of a red colour. The leaves are oblong, strap-shaped, acute, recurved, finely toothed at the edges. The flowers are greenish. Karatas Scheremetiewii—a name few Englishmen could hope to pronounce or spell—has a similar habit, but the leaves are narrower, more acute, and the flowers blucish at the tips. Karatas Laurentii has oblong leaves, obtuse, with a strong curved mucro, and more or less blotched and spotted. Karatas acanthocrater is a noble species, with very broad, oblong, obtuse leaves, terminated by a stout mucro. K. coriacea is similar but smaller, and with the leaves entire, not toothed at the margin.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The funds of this institution appear to be in a more satisfactory condition than heretofore, thanks to the great exertions that have been put forth by the committee of management, greatly assisted by their energetic Secretary, Mr. CUTLER. Such being the case, we are requested by the committee to announce that, owing to the unusual number of vacancies, the whole of the candidates for pensions, numbering twenty-six, will be put on the list of pensioners without election. The committee, by deciding so to act, have strained a point, and candidates will this time have the satisfaction of being saved the trouble, expense, and disappointment in some cases, consequent on a personal canvas. We regret to hear that Mr. SPARY, formerly of The Graperies, Brighton, is obliged to claim the aid of the Institution, owing to reverses in business. He is eighty-two years old. The annual meeting is fixed for Friday, January 15, for the transaction of the customary business. The committee have decided that the card collection shall finally close on December 1, and they will be greatly aided in their work by collectors sending in their cards by that date.

—— ORCHID EXPORTATION FROM BRAZIL.—We confess to a certain feeling of satisfaction at reading the following extract from a letter written by one of the collectors of the Compagnie Continentale :—"The Municipal Council (of the island of St. Catherine) has also imposed a tax of 500,000 reis (= 2500 francs), on each individual leaving the island with plants, and an additional tax of 5 per cent. provincial dues ; and all this because a collector last year boasted to have taken from the island more than 100,000 francs worth of Orchids, saying that the Brazilians were simpletons who did not know the value of their weeds, as they call the Orchids. I forsee the time when, all the countries acting in the same way, Orchids will become very rare in Europe, and where it will not be easy in future to introduce them in large masses. It is alleged that certain districts formerly rich in Orchids are no longer so now. The great fault does not, however, depend on an excessive quantity of Orchids sent to Europe, but on collectors, who after having obtained the desired numbers, set the forests on fire and thus destroy the plants and prevent them from being collected by others." If this be true, hanging is too good for such murderers.

—— LEPTOSPERMUM LANIGERUM.—This beautiful greenhouse myrtaceous shrub is a native of Tasmania and New South Wales, with tomentose branches, linear leaves, and numerous circular, flat, white flowers, each about three-quarters of an inch wide. It is well suited for the greenhouse and conservatory, requiring but little water during the resting period. It is well figured in the *Illustration Horticole*, t. 570.

—— HONOURS TO HORTICULTURE.—The following distinctions have been accorded to Belgian horticulturists :—MM. Phillippe Jansens of Brussels, and M. Edward Morren of Liège, have been made Officers of the Order of Leopold ; MM. Ignatius de Beucker, Louis Delrue-Schrevens, Adolphe d'Haene Madame Caroline Le Grelle d'Hanis, M. Dieudonne Masange de Louvrex of Baillonville, M. Joseph Moens, M. Auguste Peeters, M. Spæ-Vander Meulen, and M. Charles Eeckhautt, received decorations. How strange it would seem in this country if Mr. Ware of Tottenham, Mr. Barr, Messrs. Paul, Mr. Maurice Young, or others who contributed to the success of the late Inventions Exhibition, or the members of the Scientific Committee, were named members of the Order of Victoria.

—— A QUESTIONABLE EXHIBIT.—At a Californian fair a large Squash, painted green, was exhibited as an "Irish Water Melon."

—— BUD-VARIATION IN CHRYSANTHEMUM.—Mr. MAWLEY kindly forwards us a sport from Madame B. Rendattler, a Japanese variety, with orange-pink florets of irregular, often lobed, form. The sport shows itself in the form of a prolification of the inflorescence, exactly as in the Hen-and-Chicken Daisy, the number of adventitious side-buds being very large, and, what is interesting, all the flowers on the sport are pale yellow, and show little or no trace of the irregularity of the type. We do not know the original of Madame Rendattler, but this sport points to the probability that it was a yellow-flowered variety. Indeed, so far as variations in colour go, though the superficial appearances may differ greatly, the change is really of the slightest, a very little more or less colouring matter making all the difference.

—— CALANTHE VEITCHI.—Cultivators of Orchids will be acquainted with that peculiarity of Calanthe Veitch, of producing flowers of varying degrees of colour, which may vary from bright cerise to colours so pale as to be almost white. Mr. H. WILLIAMS points out that the deepest tinted blooms are invariably the produce of those pseudobulbs which have a "waist" made as if a ligature had been tied round the bulb before it had arrived at full size, causing thereby a contraction at that point. There is no indication of ill-health in bulbs so formed, the foliage and flower-spikes growing to their normal size, but so fixed has the peculiarity become that bulbs of this species are selected for their colour in their resting period by the shape of the bulb alone. Analogous peculiarities will occur to cultivators amongst other species of plants grown in gardens, and would seem to indicate both want of vigour and poverty of the colouring matter of the flowers, but usually the former.

—— ASARUM THUNBERGII.—Authors seem much divided about the naming of this plant, judging from its synonymy. It is accordingly variously known as Asarum japonicum and Heterotropa asaroides, besides the above name. Heteratropa is dropped in the *Genera Plantarum*, where the characters are considered too trivial or too inconstant to warrant the division of the genus into sections even. The lurid purple perianth is contracted at the orifice, which is surrounded by numerous whitish appendages, and far exceeds in size those of A. europæum, often cultivated in the open border, with a small wide open perianth. The flowers, notwithstanding, can only be regarded as curious. The large cordate, subsagittate leaves, on the other hand, are leathery and deep green, with a broad grey band carried round the upper surface, resembling in a measure those of a Cyclamen. On this account alone it deserves a place in the greenhouse. Some plants of this species in flower may be seen in the Cape-house at Kew. It is figured in the *Botanical Magazine*, t. 4933, and in REGEL'S *Gartenflora*, 928.

—— INDIARUBBER IN NICARAGUA. — Reports from Nicaragua on the rubber trade continue to refer to the falling off in the supply. The rubber trees, it is stated, along the banks of the river San Juan and the neighbourhood of Greytown have been almost entirely destroyed by the short-sighted policy of the rubber cutters, and the entire want of efficient police supervision. The men who formerly worked in these forests, who bought their provisions and sold their indiarubber in Greytown, are now dispersed along the Mosquit ocoast.

—— TILLANDSIA LINDENI VERA.—Amongst Bromeliads this is undoubtedly a gem, which recommends itself to the cultivator in various ways. It is easily cultivated, requires small space for its development, and lasts a long time in beauty. The slender leaves are numerous, and gracefully arch on all sides. From amongst these the peduncle emerges a short way, supporting an ensiform or elliptic inflorescence about 4 inches long. The bracts are clear rosy-carmine, much compressed laterally, and densely imbricated in two ranks, just allowing the petals to be protruded at the apex. These are large and bright blue, constituting a fine contrast to the bracts, and being developed successionally, prolong its flowering season. There is a plant of this fine form of the species flowering in the stove at Kew. It is a variable plant in a state of Nature, and much confusion prevailed about the naming of it as the different varieties came into flower. A history of the species is given in the *Gardeners' Chronicle*, 1879, xii., p. 461, where three varieties are distinctly defined, with a figure of the variety T. L. Regeliana, differing in its longer peduncle and green bracts. The variety under notice is figured in the *Illustration Horticole*, 1869, pl. 610.

—— JUDGES AT THE PENNSYLVANIA STATE FAIR FLOWER EXHIBITION.—The Philadelphians pride themselves on the way they exhibited cut flowers at the State Fair. "One amusing incident in connection with the show of funeral designs to which my attention was drawn" (says a writer in the *American Florist*) "was the appointment of judges. At the request of one of the exhibitors, three undertakers (or to be more accurate, three funeral directors) formed the majority of the judges ; two florists were appointed to act with the funeral directors. It was a curious fact, that when it came to a vote on who should have first premium, the undertakers voted one way, and the florists the other, and yet the florists signed the report. Would it not have been better for them to have presented a minority report? Just for satisfaction many men would have done so, and would have given their reasons why they had done so, in intelligent writing. What do funeral directors know of cut flower work?"

—— VRIESIA HIEROGLYPHICA.—This magnificent Bromeliad is figured in the *Belgique Horticole*, 1885, t. 10. The leaves are 70—80 cm. long (nearly 3 feet), 12 cm. (or 5 inches) wide, oblong strap-shaped, bright green, marked transversely with broad irregular black markings. The flower-spike is 1 m. 20—1 m. 20 cm. in height, bearing above a branching panicle of numerous yellow flowers, each about 2 inches long. The plant is a native of Brazil.

—— COVENT GARDEN.—The articles now in season are rather few as regards number, and will doubtless remain so till the Christmas goods arrive. Nevertheless, there is a good all-round supply of fruit, which is chiefly foreign. Apples from Canada, seemingly in good condition, are there in large quantities, and of Pines and Bananas from the West and East Indies respectively large consignments arrive. Grapes are to be seen in large quantitities, both British and Spanish, varying from 6*d*. to 4*s*. per pound. The vegetable supply is of Celery, Leeks, Sprouts, &c., and salads in a very young state are to be had as well as Asparagus in a like condition. Lemons, Oranges, and Limes have now begun to come in in quantity, and of all qualities and sizes, some being almost too small for use. Spain sends Melons and Onions chiefly, besides other fruits ; the Onions are rather small, but fine and clean. Custard Apples from Madeira, Seakale, Celeriac, and, of course, Medlars, are now in the market. In the plants in pots Tulips and Ferns may be mentioned as having just come in, as also have Poinsettias, Christmas Roses, Carnations, Ericas, Cyclamen, and Epiphyllums, are the chief of the flowering plants to be seen now. Among cut flowers of course Chrysanthemums are predominant ; but a good supply of cut Orchids and Pelargoniums, Eucharis, and Roman Hyacinths give relief. A lot of Ivy leaves, and a small display of Holly are among the quieter-looking decorative material.

—— PORTEA KERMESINA. — There is a good figure of this plant in the *Revue Horticole*, 1870, p. 230, where, however, the writer says its characters do not differ from those of Bilbergia. The base of the perianth is prolonged beyond the top of the ovary into a deep cup, narrow and thick walled at the base, much wider, with thinner striate walls upwards, from the mouth of which the sepals are free. The sepals of Billbergia, on the other hand, are free from the top of the ovary. The leaves, of a deep bronzy-red on both surfaces, are arranged in a close vasiform rosette,

attaining a length of 2—2½ feet, and arching towards their tip. The inflorescence is as conspicuous and ornamental as the foliage, forming a stout club-shaped head, consisting of large concave bracts of a clear rosy-red colour, enclosing numerous clusters of flowers. The deep blue petals are exserted about 1 inch beyond the sepals, which are pale pink or flesh coloured. The former resemble those of a Bilbergia externally, but the latter are tipped with a bristle and developed on one side into an appendage larger than themselves. For garden decorative purposes the plant is distinct both in colour of the leaves and attractiveness or conspicuousness of the inflorescence. A large plant has been flowering for some time in the Victoria-house at Kew.

—— CINCHONA BARK. — The *Pharmaceutical Journal* states that "During the twelve months ending September 30 last the total quantity of Cinchona bark exported from Ceylon amounted to 11,678,360 lb. (1,143,140 lb. of branch bark and 10,535,220 lb. of trunk bark), being 185,143 lb. in excess of the total quantity exported during the previous twelve months."

—— CHRYSOPHYLLUM CAINITO.—The "Star Apple," a tropical American fruit, is well figured in the *Illustration Horticole*, t. 567. It is a globular fruit, of the size of the largest Apple, purplish red on the outside, with 5—10 cavities in the interior, each with a single seed. The tree belongs to the Sapota family.

—— THE TREES ON THE EMBANKMENT.—On Saturday last workmen commenced the taking up and cleansing of the perforated iron gratings, and the loosening of the soil about the roots of the double row of Plane trees throughout the length of the Victoria Embankment, and in the adjacent avenues. These young trees, numbering altogether about 800, stand the smoke of London well, and are found for the most part to be flourishing. Their healthy condition, however, depends much upon the access of rain-water to the roots through the iron gratings let into the pavement, the holes in which become after a time entirely choked up by the mud and dust. Not the faintest smell of gas-leakage—that mortal foe of London trees—could be detected on Saturday in the loosened mould, a result due, no doubt, in some measure to the copious percolation of water through the soil.

—— LÆLIA PERRINI AND VARS. — An Orchid which flowers in the last three months of the year is considered specially valuable, and we, therefore, find autumn-flowering Odontoglossums, such as O. vexillarium var., or the autumn-blooming Cattleya labiata, are of much greater value in the market than the spring or summer flowering forms. The above Lælia belongs to the few late-blooming species, and as it is both large and beautiful in its flowers it is a most desirable plant. At present it is somewhat rare, although it is not difficult to keep in health and induce to flower. Plants of it are now in flower at Kew, where, in addition to the pink-flowered type, there is also a variety with the petals and sepals pure white, the lip being pale yellow on the disc and light purple at the apex. Another beautiful variety is that known as irrorata, in which the petals and sepals are of the lightest rose colour, and the lip marked as in the last-mentioned. Both these varieties, as well as the type, thrive under the same treatment as suits Cattleya Skinneri and C. Mossiæ. The pseudobulbs are long, rather thin at the base, and compressed upwards, and the leaf is stiff, 8 inches long, and dark green. The flowers are produced two or three together upon a short stalk, which developes on the apex of the matured growth of the current year. After flowering the plants should be rested for a few weeks by keeping them cool and rather dry.

—— ANACARDIUM OCCIDENTALE.—The *Illustration Horticole* gives at plate 573 an excellent illustration of the Acajou or Cashew nut, Anarcardium occidentale, the flower-stalk of which swells into a pulpy Pear-shaped "fruit" of a brilliant red colour externally. The true fruit is a kidney-shaped nut placed on the end of the stalk. The flavour of the fruit stalk is pleasant acid, and much in favour in tropical countries.

—— GARDENING APPOINTMENT. — EDWARD TAYLOR, late Gardener at Spinfield Hall, Marlow, has been appointed Gardener to Mrs. CHAMBERLAIN, Cranberry Park, Winchester, Hants.

## CRACKING OF APPLES AND PEARS CAUSED BY CLADOSPORIUM DENDRITICUM.

THE worst form of cracking in Apples and Pears is caused by a fungus named Cladosporium dendriticum, Wallroth. It not only attacks the fruit, and causes

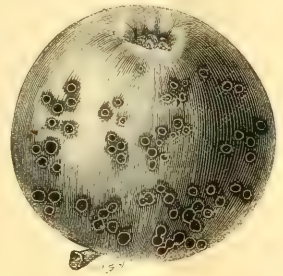


FIG. 155.—APPLE ATTACKED WITH THE FUNGUS WHICH CAUSES CRACKING, CLADOSPORIUM DENDRITICUM.

serious cracking, but in the spring it grows upon the leaves, and forms black, dendritic, arborescent spots, that is, spots a quarter of an inch or more across, which branch in all directions like a miniature black tree. The fungus also attacks the petals, anthers, and pistils of the flowers, and in bad cases causes abortion of the fruit. The name Cladosporium—from *klados*, a branch, and *spora*, a spore or seed, refers to

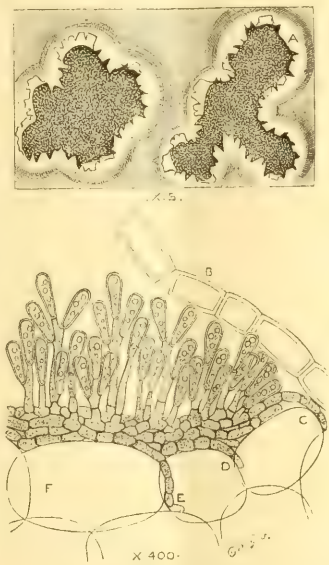



FIG. 156.—CLADOSPORIUM DENDRITICUM.

Upper figure magnified 5 times; lower figure shows a section magnified 400 diameters.

the arborescent habit of the fungus; dendriticum refers to the form of the spots.

Sometimes the spots take dendritic shapes on the fruit, especially in mild cases, and in the earlier growth of the fungus, but as the disease advances the spots become sub-rotund, black, and depressed, with a thin white margin, as shown in the accompanying illustration, fig. 155.

If the spots are examined with a lens they will be seen, if magnified five diameters, as shown in the upper part of fig. 156. The white margin of each spot is now seen to be the burst and lacerated transparent membrane of the Apple or Pear, as the case may be; and the black portion is a compact mass of brown spores or seeds which have grown, and are still growing, underneath the membrane. As the fungus grows it constantly tears open the membrane of the fruit, and the mycelium or spawn of the Cladosporium, which lives upon the juices of the fruit, burrows into the flesh, and causes cracks. The cracks are at first slight, and these at length become confluent, and in bad cases, as every gardener knows, very deep fissures are presented, which expose the inner substance of the fruit, and make it unsightly, unmarketable, and ultimately cause it to rot. If a vertical section be made through the margin of one of the small spots, and enlarged 400 diameters (the scale so often used in the *Gardeners Chronicle* for illustrations of this class) it will be seen, if the section is well made, something like the lower part of fig. 157. At B the epidermis of the leaf, composed of transparent cells, is shown pushed away from the pulp of the fruit, C, D, E, and F, by the fungus. The fungus itself consists of brown profusely jointed mycelium, or spawn, which sends up short slightly branched shafts, which carry long egg-shaped conidio-spores analogous to seeds; each spore has numerous colourless spots. The spawn threads at C, D, and E are seen pushing themselves between the cells of the fruit, and so setting up the early condition of cracking.

Cladosporium dendriticum is often referred to in horticultural and botanical books as Helminthosporium pyrorum; it is also known as Fusicladium dendriticum. The form which attacks Pears has been distinguished as Fusicladium pyrinum; another that injures Cherries as F. cerasi; a species or variety also grows on a garden Hawthorn, Cratægus pyracantha. The late M. Alfred Smee, who was badly plagued by these fungi in his gardens at Hackbridge, expressed the opinion that the fungus on his Siberian Crabs was also distinct from the pest which invaded his Pears. Peyl has boldly cut the Gordian knot belonging to the names of several species or varieties of this fungus by terming a group of forms Cladosporium polymorphum—that is, the Cladosporium of many forms.

The variety of Pears most injured in Mr. Smee's garden were the Louise Bonne and Easter Beurré. Mr. Smee has said that the Cladosporium always first appeared with him when cold south-west winds were blowing in early summer, and he writes, "We have found the best remedy is to lift the trees and give them some good top spit loam." This remedy was applied to trees, seen by the writer, which had the foliage of summer reduced to tinder by the attacks of the fungus. The injury to the foliage, of course, dwarfs the fruit, and the dwarfed fruit becomes cracked and rotten by the ravages of the fungus, which in the early summer spotted and scorched the leaves.

Allied species attack Asparagus, others grow on Alder, Angelica, Fumaria, &c.

It is extremely difficult to suggest any means either for the prevention of cracking, or its cure, for the spores of the fungus seem in some seasons to infest the air, and wherever they fall they invade either the foliage, blossoms, or fruit. It is very probable that fruits with a thin membrane suffer most, and that coarser fruits, like the coarser Potatos, are armour-proof against the attacks of the Cladosporium. I need hardly say that all cracks in fruits are not necessarily caused by the fungus here described.

For an illustrated account of a fungus extremely destructive to Apples and Pears, Oidium fructigenum, Schr., see present volume of *Gardeners' Chronicle*, p. 51. *W. G. Smith, Dunstable.*

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CITRUS TRIPTERA. — The want of appreciation shown of really valuable and interesting plants, often of easy culture, is a feature which plant lovers and journalists not only have daily reason to deplore, but which they do their best to remedy, though with little effect, in the teeth of those enemies to progress—fashion and heedlessness. Our French contemporary, the *Revue Horticole*, in giving a coloured plate of it, protests with justice against the neglect of this plant, a hardy Orange—hardy, that is, at Kew, to our knowledge—with rigid spiny green branches, 3-foliolate leaves, studded with translucent oil-glands, like a Myrtle, and with Orange blossoms for flowers. In this country, we believe, it has not borne fruit in the open air, but our contemporary suggests that by cross-breeding it might be possible to obtain an Orange which should, even in these Northern climes, ripen its fruit in the open air, or at least against a wall.

## HOME CORRESPONDENCE.

Vanda cœrulea.—Some further remarks on this plant are found at p. 627, Mr. Anderson introducing at the same time other Orchids. My object when writing on this subject at first, was to show that Vanda cœrulea was not a difficult subject to deal with. I say it is as easily managed as any other Vanda. Does Mr. Anderson say it is not? It was also stated by me that this was a cheap plant now, and could be obtained by the cultivator of humble means. That statement, I presume, is not denied. I have not had an opportunity of growing V. cœrulea for twenty years, but I have seen it under the care of a gardener, flowering splendidly after twenty-five years. I have only tried my hand with two of the species mentioned by Mr. Anderson—viz., Cattleya superba and Oncidium Lanceanum. The last-named I purchased in 1865—a small plant, which increased in size rapidly and flowered well, being in splendid health up to two years ago, when, owing to an accident, it is not now in good health, but will I hope recover. It was in splendid health at the end of eighteen years' culture, and flowered well. The treatment it received was to grow it in a teak basket in the warmest house. It was suspended from the rafters with the leaves close to the glass from the 1st of November until the end of February; during the remainder of the time it was placed on the stage with other plants. Of Cattleya superba I had several plants which were grown and flowered quite ten years in succession. I tried to grow it in pots with the same treatment that the usual run of Cattleyas receive, but totally failed. My next attempt was to attach the plants to a stump of Tree Fern, and suspend them close up to the glass. There C. superba succeeded perfectly and flowered freely in the warmest house for many years. Mr. Anderson has not quoted me correctly, I did not say "seven," but eighteen months. I fancy the Editor knows what experience I have had with Orchids. I grew them fairly well before Mr. Anderson commenced their culture at Meadowbank, nor do I see how "crowing" applies to me. One may surely mention one's own experience. There are two classes of teachers :—1st. Those who are daily working amongst their plants, potting every one of them with their own hands, watching the development of leaf and bud, carefully considering the position each plant has to occupy, and moving it nearer to the glass at one time, and again selecting for it a more retired position on the stage as the sun gains more power. That has been my work for nearly twenty-five years, and I have ventured to recommend to others any details of the work that may have been interesting, or that has tended to success. 2d. We have the theoretical man, useful, no doubt, in suggesting new systems of culture, or inventing new baskets, or material in which to grow the plants, or he may have charge of a large collection of Orchids, but is too dignified or too busy with other matters to be able to find time to give his plants much personal attention. We have, 3dly, the gardener or amateur in "long clothes," who has not had much experience, but who is anxious to learn, and who ought to be encouraged, instead of snuffed-out by those who have had so much experience as Mr. Anderson and myself. *J. D.*

Cuscuta reflexa.—The "Nepal Dodder," grown here on Ivy as a foster-parent, is now very pretty, its wiry growths covered with small bell-shaped Erica-like flowers. At a little distance in the greenhouse these exhale a pleasant perfume, but the odour is not so pleasant at close quarters. Outside it grows rampant on Willow, or Forsythia, but it shows best on the dark Ivy leaves; 5° of frost kill it down entirely. As you will observe the specimen sent has strayed from its foster-parent, the Ivy, to the young leaves of Agave americana variegata. *F. W. Burbidge.* [A pretty plant in bloom, with its snow-white oval bells, but a dangerous introduction to the plant-houses unless carefully controlled. ED.]

Gros Colmar Grape.—In compliance with the wish of your correspondent, Mr. Hudson (p. 664), to have some information respecting the treatment of the above-named Grape, as shown by me at the Maidenhead Chrysanthemum exhibition recently, I give the following particulars of my treatment of the Vine:—It is grown in a house planted with late varieties, and has no special treatment whatever. The Vines have been planted about six years, and occupy a narrow inside border, which consists of the usual materials; but the roots are allowed free access to an outside border in the ordinary soil, and which was simply trenched, getting at the same time a liberal dressing of half-inch bones, some soot and lime rubbish well worked in. It receives annually a dressing of short stable manure. The Vines in question are allowed to break naturally, and are then assisted with a little fire-heat when required. I find it is a great advantage to allow the Vine to make plenty of foliage, and not to stop so hard as is usually done, and a young rod or two is taken up yearly in order to keep up healthy root-action, and to afford shade to the bunches. By the above treatment I have been enabled to produce Grapes equal to those in question for several years past. The crop averages about fifteen bunches to a rod. *T. Lockie, Oakley Court, Windsor.*

Rosemary.—The sweet-smelling old favourite is scarcely so tender as some of the readers of gardening papers seem to suppose, although it is seldom seen growing with any vigour. There is one thing that militates against its well-doing, and that is removal. It likes to be let alone, and that may be one reason that it is not oftener met with in small gardens. The cottager seldom "moves" anything, partly because he has doubts as to his ability to do so with success, but more from association and innate disinclination. Twenty years ago—and it may be it is there now, for Rosemary is very long-lived—there grew on the sunny side of a cottage at Loughton in Essex a bush of Rosemary, that was at that period as high as the window-sill (4 feet), and which was at least 6 feet in breadth, the unusual difference between breadth and height having been brought about by annual cutting-back of the young growths on the upper part, which would unrestricted have obscured the outlook from the window. This plant's stem, so far as I can recollect, stood about 18 inches from the wall, the depth of the plant from front to back being about 3 feet. The situation was high, and doubtless well drained, which, combined with the warm position, were conditions that favoured its growth, and prevented damage from frost. *W.*

New Dahlias.—What is a fair estimate of the new Dahlias sent out in 1885? is a fitting question to put just now, at the time when cultivators are taking stock of the variety they have grown, and are determining what to retain and what to reject. That it proved a very trying season to cultivators must be generally admitted. The dry weather set in almost before the plants were established in their blooming quarters; and it continued right up to the end of August, or early in September. Then the black thrips was abundant, and with it other vermin that prey upon the flowers; and it was only by dint of constant watering that the plants were kept growing so as to produce flowers up to show mark. How persistently this must have been done was seen at the Crystal Palace exhibition, where flowers were staged of remarkable quality, the season considered—large, symmetrical, well-coloured, and clean; the delicately tinted flowers were particularly good; that fine variety Mrs. Gladstone being in the very best form, and the fact that this sort was selected for premier honours in the show division testifies to its excellence. I had an opportunity of seeing the new varieties in flower in Messrs. Keynes, Williams & Co.'s nursery at Salisbury. Their Dahlia, suffered much from the drought, and therefore in estimating the qualities of any particular variety, some allowance must be made on the score of weather, and the trying circumstances under which they were grown. The three new varieties sent out by Messrs. Keynes, Williams & Co., were as follows:—Falcon, light fawn colour, very constant, free, of fine form, a charming and very pleasing flower; James Huntley, a good purple self, early flowering, constant, very fine and striking; and Mrs. Langtry, cream colour, beautifully edged with crimson, a flower of a lovely type, constant, and good habit: three good useful varieties. Mr. C. Turner had a batch of nine show varieties, one of which, Bugleman (Fellowes), dark maroon, shaded with bright crimson, I did not see in flower; Harry Turner is a dark self of a velvety-blackness, and with the slightest crimson tip, good build, fine petal, and a good useful flower; Mrs. Douglas is a bright scarlet self in the way of James Backhouse, and likely to be very useful to the exhibitor: it has a good outline and petal, and is very bright in colour; Mrs. Glasscock is a white self, something in the way of Miss Henshaw, but poor as seen, probably the season had not proved favourable to its wellbeing. Mrs. Kendall, white ground, heavily tipped with purple, is of a very pretty colour, but rough as seen, yet likely to be good in a more favourable season; T. J. Saltmarsh, yellow, deeply edged with red, is a very constant and useful large back-row flower that is likely to be found in many exhibition stands: William Dodds, orange, or orange-buff, is a very promising variety, but requires a moister summer to bring it to perfection—it will make a useful show variety. All these, with the exception of Bugleman, were raised by Messrs. Rawlings Bros., of Romford, who appear to have hit upon a very fine strain of seedlings. Pandora (Fellowes), a delicate lilac self, has a good habit of growth, but it was very rough as seen growing—it needs another season's trial; Sybil is of a reddish-buff colour, in the way of the old Cherub—a promising and good useful flower. Of the new fancy varieties I take the Salisbury batch first:—General Gordon fully deserves all the praise bestowed upon it last season: it has a very peculiar but desirable habit, blooming freely from the very base of the plant—the yellow ground petals are tipped with bright scarlet: it will occasionally come as a bright scarlet self, and then it is very rich in colour: finally, it is very constant; Neptune is bright orange, striped with crimson, a very pretty bright fancy, useful, and fully constant; Romeo, buff, striped with maroon, is a bright good fancy, but it is reflexed in shape. The Slough batch of fancies consisted of six varieties, two of which were raised by the Rev. C. Fellowes, as follows:—Adventure, pale ground, striped and marked with red, but very rough as seen, the season being against it; and Mrs. Friselton, crimson-purple, tipped with white, apparently a late variety, not to be had until late in the season. The following three were raised by Messrs. Rawlings Bros.:—Charles Turner, light buff ground, striped with marooon: somewhat dull looking, but a good useful fancy; Henry Eckford, yellow, or light buff, striped with scarlet, marked like Hercules: a good useful variety of dwarf habit; and Mrs. Carter, crimson-purple tipped with white, good shaped, but at Salisbury nearly every flower had come as a crimson self. Lastly, W. G. Head (Turner), a dark flower slightly striped with crimson, but mainly self-coloured, and then very like William Rawlings. One noticeable fact in these new varieties was their general dwarf growth. The large majority of them average 3 feet, and not exceeding 4 feet; and many of them possess the character necessary to a good useful decorative Dahlia, that of throwing up the flowers erect, and not drooping, as many of the old varieties used to. Tall growing exhibition Dahlias are now the exception, whereas they were formerly the rule. Some are found saying that in the new Dahlias of the present time they can see little or no improvement over the flowers of ten or twelve years ago. To this it is certain that raisers and cultivators for exhibition will take exception. There is a perceptible improvement, but it is of necessity much less marked than it was a score of years ago. But in the habit of growth there has been a marked improvement; and old Dahlia growers are found saying that constitution in the plants and constancy in the flowers have so developed of late years that flowers are much easier to get than they were in times past. These are among the gains made by Dahlia raisers. *R. D.*

The Champion Chrysanthemums at Home.—Many hundreds of people have lately seen, admired, and wondered at the perfection of the Chrysanthemum flowers that have been exhibited from Swanmore Park, but I venture to say that had they been so fortunate as the writer has been to have seen them at home, their wonder would have been turned into amazement. First, in respect of the large number of plants; second, the myriads of flowers, and scarcely a second-rate one amongst them; thirdly, the luxuriant foliage and sturdy growth of the plants; and fourthly, the arrangement of them in the various houses in such a manner that every flower of every plant is visible at the first sight—a task of no mean order, when it is considered that the plants range from 3 to 12 feet in height. A description of the arrangement is an im-

possibility, and I will not attempt it, further than to say that the whole forms one of those sights that those who wish to keep themselves free from the Chrysanthemum craze should not witness, as it would, if they were at all hesitating, completely convert them. As showing Mr. Molyneux's passion for this flower, there is a south wall covered with plants on which have been bestowed as much pains as the exhibition plants have received; and well have they repaid the labour by the number and fine quality of their flowers, many being nearly equal to those on the indoor plants. So much for Chrysanthemums at Swanmore, and lest any one should think that other departments are neglected, I have simply to say, go and see some of the finest Grapes in the kingdom, the same of Peaches, and other fruits, greenhouse and stove plants, hardy shrubs, herbaceous plants, and flowering plants generally. W. H. Myers, Esq., has just cause to be as proud of his garden as I know his gardener is of serving such a generous and appreciative employer. *W. W.*



Fig. 157.—Aster Washington Needle.

**Aster Washington Needle.** — This, a new variety of Aster, partakes of the characteristics of the thread-petalled varieties of Japanese hybrid Chrysanthemums, now become so much admired. It is of pyramidal growth, with needle-shaped flowers of 4 to 5 inches in diameter; it is the largest Aster having needle-formed petals, and is one of the novelties of 1886 to be sent out by Messrs. Haage & Schmidt, Erfurt. (See fig. 157.)

**Exhibiting Chrysanthemum Blooms.** — The well meant efforts of the National Chrysanthemum Society to promote some other than the present stereotyped method of staging flowers, seems so far to have failed that the various new methods exhibited at the Royal Aquarium the other day obtained no commendation. It is just possible that exhibitors felt their hands tied by the stipulation that the flowers should be "staged," as this term has a well understood and a limited application. It is well known that staging show flowers signifies placing them so that they may be most fully displayed for the inspection of the judges, and no method has yet excelled that so universally in vogue. The system is horribly flat and most monotonous, and seems somehow soon to provoke satiety on the part of show visitors. On the other hand, whilst it really affords the best method of staging for the benefit of judging, just as Roses, Dahlias, and similar flowers are, the plan is most advantageous to exhibitors, because it enables them to carry their blooms to exhibitions over long distances in the most convenient and desirable fashion. Any system of staging flowers, for instance, which threw the blooms up materially above the present level would render it needful to have deeper or larger travelling boxes or cases, in addition to which it is difficult to see what would be gained if any such plan were universally adopted, because it would be about the same as now exists, and no more. If it be desired to obtain some more pleasing or decorative method of exhibiting Chrysanthemums, apart from that which ordinarily exists, and for other than competitive purposes, then stands or boxes may be ignored altogether, and vases or epergnes employed. If even in such arrangements the quality of blooms is to be a feature then all blooms must be faced to the front, and that would materially detract from any charm attached to novel or effective arrangement. Thus the style adopted with material success by Mr. Cannell at the Aquarium show of exhibiting his fine collection of flowers in conical bunches, after the now prevailing fashion of exhibiting single Dahlias, whilst permitting the flowers to be fronted to the observer yet gave some air of stiffness and formality to the grouping just because it was obviously impossible that flowers could remain in such positions except by employing some adventitious aid. Show blooms of Chrysanthemums are so large that they group badly in any sort of way, and therefore if arranged loosely or naturally more than usual skill is needed to avoid lumpiness and formality, which seems otherwise almost inevitable. Perhaps some interesting effects might be obtained by showing dozens of blooms in round flat baskets filled with moss, especially in distinct colours, or a deeper basket holding some half-dozen tall Hyacinth glasses covered with moss into each of which were dipped some three or four blooms on stems of diverse length, thus varying the height of the flowers. In all these methods of grouping for the production of effect no doubt the Japanese blooms would prove the most useful and pleasing. Very likely in any such effect we should see the majority of decorators tempted to introduce too many colours, but that would be a mistake, as some two or three striking yet harmonious hues would be far more pleasing and acceptable. The National Chrysanthemum Society may not be deterred by the ill success of its previous well-intentioned efforts from trying yet farther what original methods of showing flowers can be displayed, but it will do well to make it clear whether the special objects of these efforts is to find a more pleasing method than now exists of exhibiting show flowers, or whether it simply wishes to ascertain what decorative effects can be evolved out of, say, a dozen ordinary Chrysanthemum blooms of any kind and in any way. With respect to Mr. Cannell's remarkable show of cut flowers, and all so originally and for his purpose so effectively arranged, it is but fair to say that no one has ever attempted previously to present the public with such a novel and attractive display of Chrysanthemum blooms. *A. D.*

**Amasonia punicea.**—This beautiful flowering stove shrub remains in bloom for a long time, which adds greatly to its decorative value. A plant that came into flower on August 8 was as gaily bloomed at the end of October as at any time. Every little piece appears to produce blossoms, and cuttings only two months' struck were seen showing for flower. Its striking distinctness of character is self-evident. *R. D.*

**Second Leafing and Flowering of a Lime Tree.**—There is a Lime tree on the estate at Bank Grove, Kingston-on-Thames, which presents a remarkable appearance at the present time. About the middle of August it lost all its foliage through the dryness of the season, a few days after it commenced to grow again, and about the end of September it was in full leaf and in flower the second time and it has looked beautiful and green since up to the beginning of last week, when the frost commenced, which has made it look rather brown in some parts. *C. Attrell.*

**Chrysanthemums at the Royal Nursery, Slough.**—A thoroughly representative collection of these flowers has made, and still continues to make, a grand display at the above nursery. One large structure that formerly accommodated the famous Slough Azaleas is filled with a most select and varied assortment of the Japanese varieties, whilst in another long house are grouped on either side of the path a mixed collection, which, viewed from either end, forms a most attractive vista. In another house, of somewhat lofty dimensions, are arranged the cream of the incurved varieties, among which are many flowers that would hold their own in any exhibition stand. Other houses are filled with later varieties that will extend the season well on to Christmas. The entire collection forms an exhibition in itself, and if it were possible to arrange them all under one roof the effect would be something unique in its character and instructive in its results if only for comparison. *J. H.*

**Begonia, John Heal.**—This new hybrid is remarkable for the length of time its flowers will remain fresh in a cut state. Some flowers were taken from a plant on October 14, and on October 23 they were to all appearance as fresh as when cut. The blossoms do not drop quickly as in the case of the ordinary tuberous-rooted types, and the flowers are all male. At present there does not appear to be any possibility of obtaining seed from it. *R. D.*

## PLANT PORTRAITS.

Æchmea brasiliensis, *Gartenflora* (1885), t. 1202.

Azalea punctulata flore-pleno, *Revue de l'Horticulture Belge*, November.

Bilbergia Glaziovii, *Gartenflora* (1885), t. 1203.

Hedychium ellipticum, *Gartenflora*, t. 1201 (1885).

Lælia elegans, *Orchidophile* (1885), November.

Mutisia decurrens, *Illustration Horticole*, t. 568.

Prunus triloba, *Garden*, October 3.

Skimmia rubella, *Revue de l'Horticulture Belge*, November.

# Reports of Societies.

## EDINBURGH BOTANICAL: Nov. 12.

*(Conclu ed from p. 670.)*

II. "Report of Half-Hardy Plants growing on the East Coast of Arran." By the Rev. D. Landsborough, Kilmarnock. (Unless otherwise mentioned, the girths are taken 5 feet from the ground.)

"In my report this year I will confine myself almost exclusively to Gum trees, Tree Ferns, Tree Lilies, and Wattles."

THE EUCALYPTUS IN ARRAN.

"No tree so fully realises the beautiful saying of Scripture, 'The leaves of the tree were for the healing of the nations,' as the Gum Trees of Australia. They heal the land by drying the poisonous marsh. They heal the air by emitting quantities of ozone to purify it, by removing injurious organic matter. They heal man himself by preventing the spread of disease; by arresting the violence of fever; by allaying the irritation of cough, and by giving sleep to the sleepless.

"We rejoice to be able to report that many species of this tree grow in Arran. They are as follows:—

"1. The Blue Gum (Eucalyptus globulus).—This is the best known, and the most extensively planted of all the Gums. It germinates freely, grows rapidly, and attains a great height—as high as 330 feet. When young its leaves are soft, and covered with a fine bloom, and diffuse abundantly a camphoretic odour. It also abounds in that oil which has been found so beneficial as a medicine. Like most of the Gums, its appearance in the earlier years of its growth is very different from what it becomes when the tree is more advanced. Then the leaves acquire a scimitar shape, become leathery, diffuse less perfume, and the tree is altogether much less attractive. In this country it has also the disadvantage of being delicate—no tree in Scotland, growing in the open air, having survived the severe winter of 1860–61, exeept the one at Captain Brown's, Craigyard, Lamlash. It is now about 30 feet in height, and is 1 foot 10½ inches in girth. Another plant grows at Strabane, Brodick. The species is named from the form of the leaves when the plant is young. It has not yet bloomed in Arran, nor any of the others.

"2. The Twiggy or Manna Gum (E. viminalis).—This may be called the Weeping Blue Gum, for while it differs from the Blue Gum in the leaves being small and roundish, and in the branches being very slender, the leaves much resemble the Blue Gum in perfume, bloom, and also in hue, though this is somewhat more of a plum colour. This species is very hardy. A large tree grows at Whittinghame, East Lothian. One has been planted this year at Lamlash. It is named E. viminalis, from the slenderness of its branches—Manna Gum from manna being obtained from it.

"3. The Almond-leaved Gum (E. amygdalina).—This and Eucalyptus colosea are the tallest trees in the world, growing, in some instances, to the height of nearly 500 feet. A tree of this species has grown at Cromla, Corrie, for about fourteen years. It is somewhat slow in growth, being yet only about 25 feet in height and 13 inches in girth. This Gum is more hardy than the Blue Gum, but not so hardy as some other species. It is named from the leaves resembling those of the Almond tree. It and the Blue Gum are the species from which the oil of commerce is principally obtained.

"4. The White Gum (E. pauciflora syn. coriacea).—In 1879 I received seed of this species from Mr. Bailey, Government Botanist, Queensland; it had been gathered on the Blue Mountains, New South Wales. I sowed it at once. The following year (1880) it was planted at Craigyard, Lamlash. It is already 18½ feet in height, and 7½ inches in girth, and probably will one day be the tallest tree of any kind in Scotland, and probably in Britain. It is so hardy that not even a leaf was browned in the severe winter of 1880–81. Its leaves are very large, approaching the size of those of the Blue Gum. They are covered with a whitish bloom. It is called the White Gum because of the whiteness of the trunk after the annual sheding of the bark. It is a native of Tasmania, and its white trunks give a peculiar character to the forests of that great island. Plants of it grow also at Brodick and Corrie.

"5. The Alpine Gum (E. alpina).—This tree is a very interesting and important addition to the forestry of Arran, as it is altogether diverse in habit from any of the Gums formerly introduced. Its leaf is large, thick, and remarkably broad, 9 inches by 4½. It is specially illustrative of that feature in the trees of Australia which enables them to expose themselves edgeways, instead of horizontally, to the sun, for the development of one side of the leaf is almost twice that of the other, and thus the superior weight of the one side causes it to hang down, and to make the opposite side stand erect. The habit of the tree also corresponds to the shape of the leaf, being broad and close. This tree also illustrates the well-known fact that some alpine plants grow well in the vicinity of the sea. This tree, which, as its name denotes, is a native of the alpine regions of Australia, is at Corrie Hotel, Arran, growing in fullest luxuriance within 35 yards of the sea, at high water. It was planted last year, and is now 3½ feet in height. I send a leaf.

"6. The Cider Gum or Mountain White Gum (E. Gunnii).—The leaves of this Gum are small, of a light green colour, and are highly odoriferous. It is very hardy, and grows in the open air at Kew. A plant 6 feet 5 inches in height grows at Craigyard, Lamlash; a smaller one at the Free Church Manse, Whitingbay. It receives the name Cider Gum from the liquid that flows from it when the bark is pierced.

"7. The Urn-bearing Gum (E. urnigera).—The leaves of this species are of medium size and of a dark green colour. It grows at Strabane, Brodick, and is very hardy. It receives its name from the shape of the vessel containing its seed.

"8. The Coccus-bearing Gum (E. coccifera).—This differs from most of the Gums in the leaves being leathery, even when the plant is very young. They are small and of a dark bluish colour, and look as if covered with bloom. This species is very hardy. A tree of it grows at Powderham Castle, Kenton, Devonshire, more than 60 feet in height and more than a foot in diameter. A tree of what I consider this species, though the authorities at Kew have pronounced it to be E. amygdalina, grows at Castle Kennedy, Wigtonshire. It grows at several places in Arran.

"In addition to the above mentioned Gums already in Arran, through the kindness of friends allowing me to plant them in their gardens, I may mention that I have specimens of the Fig-leavedGum (E, ficifolia), from Broken Inlet, Western Australia, the leaves of which, as its name denotes, resemble those of a species of Fig. It is also remarkable for flowering when comparatively young, and from the flowers being of a crimson colour; I have also a plant of the crimson-flowered Iron-Bark (E. leucoxylon var. coccinea), whose flowers are magenta-crimson in colour. Its leaves are small and narrow, and the branches slender, so that it much resembles a Babylonian Willow. Its wood is said to excel that of all other trees in hardness. I have also the red Iron-Bark (E. siderophloia, the bark of which, as its name tells, is almost iron-like in hardness. Its leaves much resemble those of the Turkey Oak, the veins are red, on account of which it is named the red Iron-Bark.

"This summer I have further, through William Stewart, Esq., been favoured by receiving from Sir F. Müeller, Government Botanist, Victoria, seeds of E. conifera—these have just germinated; also of E. pauciflora, the White Gum already mentioned, as growing so well in Arran. I have also received a similar favour from Mr, Bailey, Government Botanist, Queensland, who has sent the seeds of 'a rare and most valuable Lemon-scented Iron-Bark' (E. staigeriana) from the Palmer River, Queensland. It also has germinated under the kind care of my friend Mr. Gray, gardener, Newfield.

"I only add that plants of several of the most hardy Gums, such as E. pauciflora, E. Gunnii, E. urnigera, and E. coccifera, are now growing at various places of the west coast of Scotland—at Knockdolean and Auchearne, near Ballantrae, at the Established Manse, Rosneath; and at Ballinakill, Cantyre.

TREE FERNS.

"At one time I imagined that Tree Ferns were remarkably slow in growth, and that no one could hope to raise them from seed and see them worthy of the name Tree Ferns. All such ideas have been dissipated by my experience in growing them in the open air in Arran, as the following notes show:—

"The great Bush Tree Fern (Dicksonia antarctica).—This plant was probably sown in 1865, as it was very small when I planted it at Cromla, Corrie, in 1867. It took about eight years to acquire its full girth of stem. The stem then began to ascend at the rate of about 3 inches yearly, while during this period the plant formed, both in spring and autumn, heads of fresh fronds. About the year 1880 the leaves began to bear spores, and since then it has grown annually only about 2 inches, and it has also sent out yearly only one crown, developed in spring, and consisting of eighteen or more fronds, each of them about 6 feet in length and 2 feet in breadth. Its stem is now 2 feet 2 inches high, and 2 feet 3½ inches in girth; it is a magnificent plant.

"Dicksonia squarrosa.—This plant was brought from Canterbury, New Zealand, and was given me by Mr. Gray, Newfield. It is now in perfect health. The fronds are 3 feet 3½ inches in length, and 14 inches in breadth.

CORDYLINES.

"These plants receive in Australia the name of 'the Victorian Palms,' or 'the Cabbage Palms.' At Cromla, Corrie, where three species grow, they are worthy of the name Palm, as the largest, a plant of Cordyline indivisa, sown by me in 1873, and planted in 1875, is now (including leaves) 13 feet in height, and has a stem 1 foot 3½ inches in girth. It may be expected soon to bloom.

ACACIAS.

"The most graceful and beautiful of all evergreen shrubs are the pinnatifid varieties of this family. That they are so considered in Australia, from which most of them come, appears from the name there given them—'Feather-leaf.' I am happy to be able to report most favourably of them in Arran. The Black Feather-leaf (Acacia decurrens), one of the most beautiful, and also one of the most delicate in appearance, is now growing at Craigyard, Lamlash. It is, like the other plants, a standard, is 7 feet 10 inches in height, and is growing in great luxuriance. It grows also at the Lamlash Cemetery. Another variety, specially named the Feather-like Feather-leaf (Acacia penniformis), of a blue-green shade, which does not close its pinnules at night, and in dull weather, as does the other, also grows at Craigyard, Lamlash. A third Feather-leaf (A. longifolia) grows at Strabane, Brodick. The Broad-leaf Acacia (A. pycnantha) grows at Craigyard.

"*Miscellaneous Plants.*—The broad-leaved Chinese Fir (Cunninghamia sinensis), the Australian Bramble (Rubus australis), Pittosporum undulatum, whose flower is so fragrant; and the Oak or Beef Wood (Casuarina equisetiforme), all grow in the Castle Garden, Brodick. Camellias, Myrtles, and Desfontainea spinosa (7 feet 8 inches high), all bloom freely at Cromla, Corrie. Agalmya tomentosa has just been planted at Craigyard, Lamlash. I have also plants of the Bottle Tree of Australia (Brachychiton diversifolium), the Grass Tree of Australia (Xanthorrhæa arborea), of Libertia grandiflora, and of a Dasylirion from Mexico, which I hope ere long to transfer to Arran."

III. "Exhibition of rare British plants, from Mr. A. Bennett, Croydon."

Specimens of rare Scottish plants were exhibited from Mr. A. Bennett, Croydon, including Carex elongata, collected by Mr. J. McAndrew, from Kenmore Holms, Kirkcudbright; Carex salina var. kattegatensis, and Calamagrostis strigosa, both collected by Mr. J. Grant, Wick, from that neighbourhood.

IV. "Progress of Vegetation at the Royal Botanic Garden, Edinburgh, from July till October." By Robert Lindsay, Curator.

"All outdoor vegetation suffered severely from the excessive drought which prevailed during the month of July. Many trees and shrubs had their growth arrested. Herbaceous plants were dwarfed, but continued to flower freely. Grass lawns were very brown, and required little or no cutting. Aphis were very abundant. Beech, Elm, and Lime trees were specially infested by them, much injury being done to their foliage in consequence. There were twenty dry days, and only slight showers of rain during the remainder. The lowest night temperature was 41° on the 1st of the month, and the highest 75° on the 25th. The highest day temperature was 84° on the 23d, and the lowest 56° on the 26th. On the rock garden 230 species and varieties of plants came into flower during July, amongst which were the following:—

| | |
|---|---|
| Astragalus purpureus | Gentiana septemfida var. cordifolia |
| Anemone rivularis | Lilium Krameri |
| Asterisous maritimus | Meconopsis Wallichii |
| Anomatheca cruenta | Leontopodium alpinum |
| Campanula elegans | Saxifraga Hausmani |
| ,, isophylla | ,, odontophylla |
| ,, Waldsteiniana | Silene Elizabethi |
| Calliprora flava | Sedum hirsutum |
| Cistus florentinus | ,, azoon |
| Erica ramulosa | Orobanche rubra, &c. |
| Erythræa diffusa | |
| Geranium Lambertii | |

"August was also an exceedingly dry month, there being nineteen days when no rain fell. Several low night temperatures were registered for this month. The lowest readings were, on the 14th, 37°; 15th, 37°; 19th, 38°; 30th, 37°; 31st, 38°. The highest morning readings were, on the 10th, 66°; 18th, 62°; 19th, 65°; 22d, 62°; 24th, 66°. East and north-east winds were prevalent. Autumn tints began to show early this season; Sugar Maple, Pavia flava, and Ampelopsis Veitchii were well coloured by the end of the month. Seventy-six species of plants came into flower on the rock garden, amongst the most conspicuous were:—

| | |
|---|---|
| Calochortus pulchellus | Origanum Tournefortii |
| Calluna vulgaris, fl.-pl. | Polygonum capitatum |
| Clematis Jackmanni | Platycodon pumilum |
| Cyclamen hederæfolium | Pterocephalus Parnassi |
| Colchicum speciosum rubrum | Senecio speciosus |
| Delphinium cardinale | Saxifraga flagellaris |
| Gentiana ornata | Spiræa Bumaldi |
| ,, tibetica | Scabiosa speciosa |
| Hypericum patulum | Veronica longifolia var. subsessilis, &c. |
| Montbretia Pottsii | |

"Frost set in early this season. On September 1 the thermometer stood at 31°, or 1° of frost, but in several districts in Scotland 10° of frost were registered at the same date. Last year the first frost registered here occurred on October 11, when 3° of frost were registered. Other low readings occurred, on the 11th, 33°; 26th, 33°; 27th, 26°. The highest morning readings were on the 4th, 66°; 6th, 60°; 17th, 61°; 22d, 58°. Westerly winds were prevalent, and a good supply of rain fell, there being only ten perfectly dry days throughout the month. Dahlias and other tender plants were cut down by the 6° of frost which occurred on the 27th. Owing to the continued drought throughout the summer months many shrubs have made a second growth, and a few have flowered prematurely.

"The season has been very favourable for ripening seeds of herbaceous and annual plants; thirty species came into bloom on the rock garden during the month, amongst which were—

| | |
|---|---|
| Allium glaucum | Lilium tigrinum |
| Crocus nudiflorus | Lobelia lutea |
| ,, speciosus | Montbretia crocosmæflora |
| Coreopsis tenuifolius | Rudbeckia Newmanni |
| Gentiana asclepiadea alba | Schizostylis coccinea |
| Gladiolus Sandersi | Veronica glauca cærulea, &c |

"During October the thermometer was at or below the freezing point on four nights, indicating collectively 20° of frost. The lowest readings occurred on the 11th, 26°; 12th, 27°; 23d, 32°; 25th, 23°; 30th, 34°. The highest morning readings were on the 2d, 51°; 3d, 49°; 7th, 50°; 16th, 48°. The lowest day temperature was 42°, on the 22d; and the highest, 58°, on the 2d of the month. There were ten days when no rain fell, and although there was more or less rain during the remaining twenty-one days, plants, such as Rhododendrons, which were growing underneath trees in various parts of the garden, were suffering from drought until the last week of the month. Autumn tints were very fine, but of short duration, on various trees and shrubs; the brightest and best coloured of all were the different forms of hardy Azaleas, some of their leaves showing rich crimson shades, others brown and yellow. Maples, Oaks, Beech, Pyrus, Berberis, Liquidambar, and Tulip tree have also had finely coloured leaves. The brown hues which some Conifers assume at this season of the year have been most conspicuous on Thuia aurea and elegantissima. Fruit is abundant on Holly, Cotoneaster, Thorn, Yew, Euonymus, and Gaultheria. Late-flowering herbaceous plants have been very well flowered, and many are yet in good condition, amongst the best being Tritomas, Asters,

Chrysanthemums, Helleborus altifolius, and autumn-flowering species of Crocus.

"On the rock garden the following species came into bloom during the month, viz., Crocus byzantinus, C. medius, Œnothera acaulis, Mutisia decurrens, Polygala chamæbuxus purpurea, Hepatica triloba alba. From January 1 till the end of October 1168 species of hardy plants, including well marked varieties, have flowered on the rock garden. At the same date last year 1112 had flowered."

Mr. Lindsay exhibited from the garden flowers of Mutisia decurrens, and small branches, covered with fruit, of Gaultheria carnea, both from the open air. Seedling plants of Eucalyptus pauciflora and coccifera, natives of Tasmania, were shown. He also mentioned that he had succeeded in raising seedlings from the large Eucalyptus which had grown in the open air at Wintunghame, East Lothian, since 1846. The seeds were ripened this summer. This tree, which had been supposed to be Eucalyptus viminalis, had been determined by Sir Joseph Hooker to be E. Gunni, a native of Tasmania.

V. "On the Temperature and Vegetation at the Glasgow Botanic Institute for September." By R. Hullen, Curator.

"The thermometer has been below the freezing-point three times during the month, the lowest record being 6° during the night of the 26th. The highest day temperature was 70° on the 6th, the next highest was 64° on the 3d and 4th, and 60° on the 16th, all other days having varied from 51° to 59°. The nights have also been comparatively cold, showery days have been frequent, often heavy, and weather occasionally boisterous. The sudden and severe frosts experienced on the morning of the 27th proved disastrous to all half-hardy plants, not only in the garden; field crops, especially Potatos, have suffered severely in many places, where the temperature fell much below that recorded here. The cold wave which has so recently passed over the country has seldom been felt so severely so early in the season. All hope of saving seeds of many tender plants has vanished. Although we have had a very dry and bright summer, we have had a constant succession of cold nights, which have had a bad effect not only on the maturation of seeds, but on the backward state of late-blooming plants, such as Dahlias; these were just coming into bloom. Chrysanthemums are also in a very backward state, particularly the late-blooming kinds.

"The temperature for October, has been at or below the freezing-point eleven times during the month, with a total of 29°, 12° of which were registered during the night of the 24th. This is the lowest temperature recorded here for many years for the same month; 15° and 16° were recorded in several places not many miles distant. The day temperatures have been below the average, as well as the rainfall. The greater part of the month, the weather was all that could be desired, and afforded every facility for outdoor gardening operations. It is seldom that late leafing trees have been so entirely denuded of their foliage so early in autumn, but the young wood of most tree seems to be well ripened."

VI. Miscellaneous communications:—

Mr. Neill Fraser intimated having gathered in September, 1884, on a mountain in the neighbourhood of Pitlochrie, Perthshire, Astragalus alpinus, hitherto recorded as having been found at only two stations in Scotland (Clova and Braemar), and Oxytropis campestris, only found hitherto at one station. Neither was in flower. It is possible, when further specimens are obtained, that the Oxytropis may turn out to be Halleri, also a very rare alpine plant; but Mr. Fraser believes it to be campestris that he discovered.

## EDINBURGH APPLE AND PEAR CONGRESS.

(FROM OUR OWN CORRESPONDENT.)

*Edinburgh, November* 26.—From a pomological point of view this is undoubtedly a great event, and so far as the aims and objects of the Council of the Royal Caledonian Horticultural Society are concerned in initiating and conducting it to the present stage—that of an exhibition—it is an unqualified success. The four tables, stretching about 100 yards each along the north side of the great Waverley Market, with three others extending across the width of the western end, are laden with Apples and Pears from nearly every latitude and various altitudes in the United Kingdom, from Germany, and from Nova Scotia, showing qualities as various as the districts whence the several lots come. The extremes, in so far as the British Islands are concerned, meet here in the collection from Kent and that from Orkney; and it is interesting to note the gradations in quality from either extreme as exhibited on these tables.

It is impossible to particularise in detail in the limited space at our disposal, and much that is of general as well as particular interest must unavoidably be omitted at present. The importance and practical value of the Congress in respect of the advantages that may accrue from it can only be barely alluded to, but the ample materials so liberally brought together by so many willing coadjutors on this occasion offer the best opportunity that has ever occurred in the metropolis of the northern kingdom for correcting the nomenclature and assessing the relative values of different sorts of Apples and Pears, and also the adaptability of different kinds to different conditions of soil and climate.

The arrangement of the collections from the different counties adopted by the committee of management is alphabetical, which has the merit of simplicity at least, and following it we now proceed to note briefly the leading characteristics of each.

*Aberdeenshire* is represented by six collections of Apples and one of Pears from private gardens, and two of Apples and one of Pears from nurserymen.

Mr. Donaldson, The Gardens, Keith Hall, Inverarie, sends sixty varieties of Apples and twelve varieties of Pears, which, considering the cold bleak climate in which they were grown, are very fair generally; most noteworthy are good samples of Apples—Red Astrachan, Devonshire Quarrenden, Feara's Pippin, and Annie Elizabeth; and of Pears—Hacon's Incomparable, Marie Louise, Beurré d'Aremberg, Beurré Napoleon, Beurré Diel.

Mr. Forrest, The Gardens, Haddo House, Aberdeen, sends twenty-four varieties of Apples of fair merit.

The collection sent by Messrs. James Cocker & Sons, nurserymen, Aberdeen, comprises 225 varieties collected from various parts of the county, thus exhibiting very fully the varieties grown within its limits. Very fair samples of Knight's Monarch and Duchesse d'Angoulême Pears from walls occur in the collection, and of Apples good samples of the rare and choicer Oslin, Warner's King, and Tower of Glammis, were conspicuous.

The contribution of Messrs. Smith & Son, nurserymen, Aberdeen, comprises 150 varieties, but these are not representative of the county, samples appearing from Nairn, Dingwall, and Morayshire, which somewhat confuses the alphabetical arrangement of the Congress, as well as the objects thereof. In general they are only of moderate merit, and comprise varieties similar to those represented in the other collections from Aberdeenshire.

*Ayrshire.*—There are five collections, all from private gardens, more remarkable for fine colour than size. The largest collection is from Mr. Bogie, Auchan Gardens, comprising 150 varieties of Apples and twenty varieties of Pears, and who is the only exhibitor of Pears from this county.

Mr. Gilchrist, Cairnhill, Hurlford, sends a collection of thirty varieties of Apples, well coloured, but deficient in size as compared with average Scotch samples.

Mr. Wilson, Auchenermrie, Ayr, sends also thirty-two varieties, Apples and Pears—the latter, from walls, very good—Beurré Diel, Marie Louise, and Duchesse d'Angoulême, being noteworthy.

*Argyllshire.*—This county sends but one representative—Mr. Grierson, Torleisk Gardens, Tobermory, Isle of Mull, with twenty-four varieties of Apples, and four varieties of Pears, which, considering the natural conditions under which they have been grown, are very presentable fruit.

*Berwickshire.*—The most conspicuous collection from this county is that from Paxton House, Mr. McIntosh gr., comprising 100 varieties of Apples, which are fair in size and quality.

*Caithness.*—This northern county sends one representative—Mr. Munro, Keir's Castle, Wick, who has twenty-five varieties of Apples and five varieties of Pears. Culinary Apples comparatively good. Amongst the Pears Black Achan and Moorfowl Egg were good, Marie Louise small but clean.

*Dumfriesshire* is fairly represented by a collection of a hundred varieties of Apples from Messrs. Kennedy & Co., Dumfries, which show fair average merit for Scotland.

*East Lothian* is strongly represented by nine large collections, all conspicuous for fair size and good colouring.

Mr. Brunton, Gilmerton Gardens, Drem, sends 133 varieties of Apples and thirty varieties of Pears, remarkable for size and excellence of colour.

Mr. James Morrison, Archerfield Gardens, sends 110 varieties of Apples and thirty varieties of Pears, all good for the district; noticeable among the latter are Flemish Beauty and Conseiller de la Cour, very good.

Mr. Brotherton, Tyningham Gardens, sends a hundred varieties of Apples and twenty varieties of Pears, comprising evidently an excellent selection for the district, as all are good.

Mr. Garrett, Whittingham Gardens, Prestonkirk, sends sixty varieties of Apples and twenty varieties of Pears, very good.

Mr. Dow, Newbyth, Prestonkirk, sends sixty varieties of Apples and Pears, a very superior lot.

Mr. McKelvie, Broxmouth, Dunbar, forwarded thirty-six varieties of Apples from espaliers, all fine.

*Fifeshire.*—Very moderately represented. The Apple samples put up in the four collections sent in are fairly good, but the Pears are poor with the exception of the following:—Urbaniste, Marie Louise, Duchesse d'Angoulême, Beurré d'Amanlis, and Crassane, which, grown on wall trees, are above average for Scotland.

*Forfarshire* is strongly represented in point of numbers. The quality is above average for Scotland. Messrs. Laird & Sinclair, Dundee, send 300 varieties of Apples, and fifty varieties of Pears, collected from various parts of the county, the collection on the whole being very good. Mr. Johnston, Glamis, has a very excellent collection of thirty varieties of Apples, being clean, of good size, and well coloured

*Lanarkshire.*—This county exhibits strongly in point of numbers, but the samples are not remarkable for size, although the colour is good.

*Morayshire.*—Mr. Morrison, nurseryman, Elgin, contributes 120 varieties of Apples, and a few varieties of Pears, the former of ordinary merit, the latter poor.

*Midlothian* comes up in great strength in point of numbers of collections, and also as regards the excellence of the Apples generally, but the samples of Pears do not come up to the same standard. There are six-teen collections tabled from the county, the largest being from Mr. Malcolm Dunn, Dalkeith Gardens, comprising 250 varieties of Apples and eighty varieties of Pears, among which are many noteworthy sorts.

Messrs. Dicksons & Co., nurserymen, come next in point of numbers with a collection comprising 150 varieties of Apples of average merit.

Messrs. Ireland & Thomson, nurserymen, Edinburgh, send forty varieties of Apples, some of which were remarkable as regards size and quality.

*Orkney* sends one exhibitor, Mr. McDonald, Balfour Castle Gardens, with twenty-one varieties of Apples, among which Pitmaston Nonpareil and Boston Russet were comparatively good.

*Peeblesshire.*—Only two exhibits came from this county. Mr. Borthwick, Stobo Castle Gardens, sends twenty varieties of Apples, and four varieties of Pears, of fair quality.

Mr. McIntyre, The Glen, sends ten varieties of Apples, above average quality for Scotland.

*Perthshire.*—Eight exhibits are tabled from this county. The Apples are above average for Scotland as regards size and colour, but Pears are generally inferior in quality.

*Renfrew hire.*—Only two exhibits come from this county. The Apples are above average for Scotland, and among the most noticeable Pears are Beurré Bosc and Marie Louise, from Mr. Lindsay, Cathcart Gardens, which are good.

*Ross-shire* sends also only two exhibitors, who show only moderate quality, although one or two samples of Pears are fair for Scotland. They are Beurré Diel and Marie Louise.

*Roxburghshire.*—Messrs. Laing & Mather, nurserymen, Kelso, put up eighty varieties of Apples and twenty varieties of Pears of fair quality.

Mr. Galloway, Minto Gardens, Hawick, sends a hundred varieties of Apples, very good.

Mr. Fowler, Merton Gardens, St. Boswell's, puts up fifty varieties of Apples and twenty varieties of Pears, the latter particularly good.

D. Melville, Elliston Gardens, St. Boswell's, exhibits forty varieties of Apples and forty varieties of Pears. A remarkable collection. Many varieties of Pears and Apples grown in orchard-houses are very superior.

Messrs. Ormiston & Renwick, nurserymen, Melrose, table 200 varieties of Apples, a very good collection.

*Sutherlandshire.*—From Mr. Melville, Dunrobin Gardens, come twenty varieties of Apples, poor quality.

*Stirlingshire.*—Four collections are sent in from this county. Messrs. Drummond & Sons, nurserymen, exhibit 220 varieties of Apples and seventy varieties of Pears, which are of fair average quality for Scotland.

Mr. Sowza, Touch Gardens, Stirling, sends seventy varieties of Apples and forty varieties of Pears—a very good lot.

Mr. Crosbie, Buchanan Gardens, Drymen, sends fifty varieties of Apples and twenty-four varieties of Pears—aboveaverage merit.

*Wigtonshire* sends two exhibits, both above average quality for Scotland.

### IRELAND.

*Co. Antrim.*—Mr. Warwick, Shane's Castle, forwarded seventy-two varieties of Apples; very good.

*Co. Down.*—Messrs. Roger McClelland & Co., Newry, send thirty varieties of Apples and ten Pears; very nice collection.

*Co. Dublin.*—Mr. Blackburn, Abbotstown Gardens, Castleknock, sends fifty varieties of Apples; excellent.

*Co. Galway.* Mr. Cobban, Garbally Gardens, Ballinasloe, contributes forty Apples and twenty Pears; very good.

*Co. Mayo.*—Mr. Farrally, The Castle Gardens, Westport, sends thirty varieties of Apples, of superior quality.

*Co. Wexford.*—Mr. Turner, Courton Gardens, Gorey, sends fifty varieties of Apples and twenty varieties of Pears; very fine.

### CANADA.

*Nova Scotia.*—Professor Lawson, Nova Scotia Fruit Growers' Association, sends 118 varieties—a remarkably good collection. Conspicuous among the Apples were fine samples of Blenheim Orange, Gloria Mundi, Gravenstein, Golden Russet, Mammoth Russet, Fox Pippin, and Northern Spy.

The labours of the jury were not completed when our report left.

## TWICKENHAM HORTICULTURAL SHOW.

November 17.

THIS meeting was held in the Town Hall, Twickenham, under far more pleasant weather auspices than greeted shows during the preceding week, and the display made if showing a little falling off in the plant section was admirable in the cut flower classes, as also in the fruit and vegetable sections. A very beautiful group of Cyclamens in pots pleasingly fronted with Maidenhair Fern, was sent by Mr. Walker, of Milton; Mr. W. Poupart, of Twickenham, put up a remarkably interesting collection of Apples and Pears grown for market, some fifty dishes of the former and twenty of the latter being shown; also several good samples of Potatos. A fine bundle of the red market Celery attracted much attention. Mr. W. Mann, of the same place, exhibited a fine lot of vegetables, inclusive of huge Cauliflowers, Savoy and other Cabbages, &c., and some good dishes of Apples.

Groups of Chrysanthemum plants were limited in number and of about the average quality, the best coming from Mr. Parsons, gr. to T. Twining, Esq., and the 2d best from from Mr. Sallows, gr. to J. T. Flack, Esq., both of Twickenham. Mr. Sallows had the best six trained plants.

There were some good table plants, scarlet Pelargoniums, the best being Henry Laceby, from Mr. Parsons; Chinese Primulas, the best from Mr. Garrod, gr. to J. R. Twedell, Esq., Twickenham, all single white;

Cyclamens, &c. Of floral decorations a beautiful cross of white flowers came from Messrs. Hooper & Co., of Twickenham, backed by good winter blooming Carnations.

A special competition by ladies for single stand or epergne for a Challenge Vase, brought three that were admirably dressed, but the one from Mrs. Ferris was so beautiful and refined in its arrangement, that it won readily.

In another class for stand dressed with hardy leaves and berries, the best came from Mrs. Chapman, of Twickenham, and a very pleasing arrangement it was from such materials.

The best collection of twelve incurved and twelve Japanese blooms came from Mr. Coombs, gr. to W. Furse, Esq., Teddington, the former being very good. In the 2d prize lot were better Japanese, but the incurved flowers were weaker; this came from Mr. Monro, gr. to E. D. Paul, Esq., Twickenham.

Mr. Coombs had the best twelve incurved, good blooms, and Mr. Monro the best twelve Japanese. In the former class Mr. Worrell was 2d, and in the latter Mr. Coombs was in the same position, whilst in the class for twelve Anemone blooms the latter was a good 1st, with fine flowers.

The best twelve pompon blooms came from Mr. Green, gr. to S. Grant, Esq., Mr. Parsons having the 2d best lot. Mr. W. Bates, Poullett Lodge, showed some capital flowers, not for competition.

Mr. Parsons had the only collection of fruit in very fair Alicante and Gros Colmar Grapes, Beurré Bosc Pears, and Court Pendu-plat Apples.

The best four dishes of Pears came from Mr. Garrod, who had Duchesse d'Angoulême, Beurré Diel, white Doyenné, and Marie Louise. Mr. Monro was 2d.

Mr. Worrell, gr. to Colonel Murray, Whitton Park, had the best four dishes of Apples in King and Ribston Pippins, Wellington and Blenheim Orange. Mr. S. Stroud, the Police Orphanage, was 2d.

Collections of vegetables were excellent, and there was good competition, in the Potato class excellent samples being shown.

## DEVIZES CHRYSANTHEMUM SHOW: November 17.

As is usual, this took place in the Corn Exchange, Devizes, in conjunction with a bazaar in aid of the Benevolent Society. There was a pretty and very good exhibition of plants and cut flowers, though the competition was somewhat restricted, But the usual quality of the show was maintained, and, as heretofore, the whole was arranged with excellent judgment by Mr. Thomas King, gr., Devizes Castle, who also furnished some fine specimen Palms and Tree Ferns, which greatly helped the general effect.

### PLANTS.

The best six specimens of large flowering Chrysanthemums came from Mr. H. Clack, gr. to C. E. Colston, Esq., Roundway Park, Devizes, who had admirably grown and flowered trained specimens, one of which (Prince Alfred) was a fine example of thorough good cultivation, which was awarded a special prize as the best plant in the show; 2d, Mr. W. Hale, gr. to C. N. May, Esq., The Elms, Devizes.

The only exhibitor of four plants was Mr. G. Tucker, gr. to Major Clarke, Wyke House, Trowbridge, who had nice examples of some old favourites.

In the class for six varieties of pompon Chrysanthemums, Messrs. Clack and Hale had admirable specimens, the one only just inferior to the other. Mr. Clack was placed 1st; Mr. Hale came in 2d with finely-grown and flowered specimens.

Mr. Tucker was the only exhibitor of four specimens, having smaller but creditable plants.

In the class for six specimen Japanese Chrysanthemums those shown by Messrs. Clack and Hale were so evenly balanced and so thoroughly good that they were awarded equal 1st prizes, the specimen Salteri being a capital one.

In the class for four plants the 1st prize was withheld, and a 2d awarded to Mr. G. Tucker.

In the class for three specimen plants, to consist of Mr. G. Rundle, George Glenny, and Mr. Dixon, Mr. Clack was 1st, with very fine and well grown specimens, averaging fifty flowers each; Mr. Hale coming 2d, also with good plants, smaller, but carrying less flowers, though of a fine character.

### CUT FLOWERS.

Mr. Clack had the best twelve incurved blooms in four varieties, showing in good form Princess of Wales, Barbara—one of the blooms of this variety was selected as the premier flower in the show; Mrs. Heale, and Lord Wolseley; Mr. Hale was 2d; 3d, Dr. Hitchcock, Fiddington House, Lavington.

Mr. Hale had the best twelve blooms of incurved varieties; 2d, Mr. Clack; 3d, Dr. Hitchcock.

Mr. Hale also had the best twelve blooms shown with 12 inches of foliage, an admirable way of showing off the flowers to the best advantage; 2d, Mr. Clack; 3d, Dr. Hitchcock.

The best twelve Japanese varieties came from Mr. Clack, who put up some finely developed flowers; 2d, Mr. Hale; 3d, Dr. Hitchcock.

The best twelve blooms of Anemone-flowered varieties came from Mr. Clack; Mr. Hale was 2d, and Dr. Hitchcock 3d. Noteworthy flowers all of them.

Among the miscellaneous exhibits were baskets of wild flowers and foliage, &c., and some pretty epergnes, shown for table decorations.

A First-class Certificate of Merit was awarded to Mr. James Lye, Clyffe Hall, Market Lavington, for red Kidney Potato, Lye's Freedom, a large form of Bountiful, a heavy cropper, and of excellent table quality.

A fine-looking Onion, the result of a cross between Yellow Zittau and the White Spanish, was Highly Commended. This was raised by Mr. Lye.

## WINCHESTER: November 17 and 18.

THIS, the third exhibition of Chrysanthemums and fruit, was held in the Guildhall, the show in question being remarkable for the excellence of the cut blooms of Chrysanthemums, which being staged in large numbers rendered it one of the best Chrysanthemum shows of the season. Such an impetus has been given of late to the cultivation of the flowers in this neighbourhood, that it was not surprising to see so good a display. Messrs. Porter and Colson, the hon. secretaries, assisted as they were by an equally able committee, deserved much credit for their arduous endeavours in bringing so good a show together.

It was a pleasure to observe the advancement made by the local growers since the last show, this being most marked in the class for six plants, open to residents within 5 miles of Winchester, the plants which took 1st prize in this class belonging to Miss Butler, St. Thomas Street (gr., Mr. A. Prouting).

The groups of both miscellaneous plants and Chrysanthemums were a marked improvement on the show in 1884, whilst the specimen plants of Mr. W. Joy, Shirley, Southampton, have not been excelled this year anywhere, so large, healthy, and profusely bloomed were they.

Vegetables were staged in large quantities, and were of first-rate quality; while the arrangements of flowers, &c., confined chiefly to ladies, were to be much commended, as they usually are at this Society's exhibitions.

### GROUPS AND PLANTS.

For the best collection of Chrysanthemums occupying a space 8 feet by 5 feet there were seven excellent competitors, the best being that of F. W. Flight, Esq. (gr., Mr. W. Neville), Twyford, Winchester, whose plants were profusely bloomed, and flowers of a large size, tastefully arranged without overcrowding; 2d, Miss Butler, St. Thomas Street (gr., Mr. A. Prouting), whose group was a great advance on last year, and was well arranged; 3d, Mrs. Warner, Northlands, Winchester (gr., Mr. T. Hunt).

For six plants.—1st, Mr. W. Joy, nurseryman, Southampton, the only competitor, who staged magnificent specimens of 5 feet in diameter.

For six Japanese varieties, Mr. Joy was again 1st. This was the only collection staged, but the plants were so remarkably good that they formed quite an exhibition in themselves. Mr. Joy was also 1st for single specimens, incurved, with a grand plant of Mrs. G. Rundle, and for a magnificent one of Fair Maid of Guernsey he was awarded 1st prize for best Japanese plant.

For six plants, open to members residing within five miles of Winchester, Miss Butler was 1st; 2d, Lady Wodehouse, Mayfield, Winchester (gr., Mr. Smith); 3d, W. B. Simmonds, Esq., Abbots Barton, Winchester (gr., Mr. Astridge).

For a miscellaneous group of plants, arranged for effect, C. M. Shipley, Esq. (gr., Mr. C. Axford), Twyford, Winchester, was 1st with an exellent collection, followed by Mrs. Brown (gr., Mr. T. Phillpott), and Mr. Astridge, Solanums, Primulas, Cyclamens, table plants, and Poinsettias were well shown by Mr. Astridge, Mrs. Warner, Mr. Munt, and Mr. Phillpott.

### CUT BLOOMS.

These were staged in great numbers, Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, here completed a successful season, by taking five out of the six 1st class prizes, his blooms being remarkable for their large size, solidity, and perfect finish.

For twenty-four distinct, sixteen incurved or reflexed, and eight to be Japanese, Mr. Molyneux was an easy 1st among five competitors, Madame C. Audiguier, Belle Pauline, Boule d'Or, and Meg Merrilies being the best among the Japanese, while the incurved section was represented by beautiful large blooms of Lord Alcester, Golden Empress, Queen of England, Hero of Stoke Newington, Lady Carey, &c.; 2d, Mr. Neville, whose incurved and Japanese were fine, the best being Jeanne d'Arc, Mrs. Shipman, and Mr. Brunlees; 3d, Mr. W. Pope, gr. to the Earl of Carnarvon, Highclere Castle, Newbury; 4th, Mr. C. Warder, gr. to Sir F. Bathurst, Clarendon Park, Salisbury.

For twenty-four blooms, not less than eighteen varieties, Mr. Molyneux was again 1st, with blooms similar to the former class; Mr. Neville was 2d, and Mr. Pope 3d. Mr. Molyneux repeated his former successes by taking 1st for twelve incurved blooms, distinct; Mr. Neville followed, and Mr. A. Bridger, gr. to Colonel Martin, Fleetlands, Fareham, was 3d.

For twelve Japanese and same number of reflexed kinds the prizes went to Mr. Molyneux, Mr. Neville, Mr. Warder, and Mr. Bridger, all staging produce of grand quality.

For twelve blooms, not less than eight varieties, Mr. Trinder, gr. to Sir Henry Mildmay, Dogmersfield Park, Winchfield, was 1st, with a clean, even, fresh collection; 2d, Mr. L. Jennings, gr. to J. Freeman, Esq., Forest Lodge, Farnborough; 3d, Mr. A. Bridger, all staging well.

For twelve pompons Mr. Neville was 1st, closely followed by Mr. Molyneux, Mrs. Remsbury, Twyford; Mr. E. Flight, Winchester; and Lady Wodehouse staged the best blooms—a creditable lot—in the amateurs' classes.

### FRUIT AND VEGETABLES.

For three bunches of Grapes, distinct varieties, Mr. Molyneux was 1st, with Alicante, Gros Guillaume, and Trebbiano, all in fine condition; 2d, Mr. C. Warder, whose best bunch was a fine one of Gros Colmar; 3d, Mr. Neville.

Mr. J. Mildon, gr. to Mrs. Turner, King's Worthy, had the best two bunches of black Grapes, fine specimens of Alicante; 2d, Mr. C. Warder; 3d, Mr. Neville.

For two bunches white Grapes, Mr. James Chalk, Westwood, Wilton, Salisbury, was 1st, with Muscat of Alexandria in good condition, the heaviest bunch, one of Gros Guillaume, in good condition, followed by Mr. L. Jennings.

For three dishes of Pears, six fruits of each.—1st, Mr. S. Jennings; 2d, Mr. Trinder; 3d, Mr. A. C. Smith, Havant.

The best three dishes of kitchen Apples were staged by Mr. J. T. Phillpott; 2d; Mr. Astridge.

Vegetables were of more than good quality. Mr. R. Lye, gr. to W. A. Kingsmill, Esq., Sydmonton Court, Newbury, was awarded 1st prize for a collection of eight kinds, followed closely by Mr. Pope, whose best dish was a grand one of Reading Perfection Tomato; 3d, Mr. W. Ashton, gr. to the Very Rev. the Dean of Winchester.

The best arranged stand of Chrysanthemums and foliage suitable for table decoration was that put up by Mrs. B. Flight.

Mr. E. Hillier, nurseryman, Winchester, contributed a collection of plants which added much to the decoration of the room wherein the hardy fruits were staged.

## MANCHESTER BOTANICAL AND HORTICULTURAL: November 17, 18, and 19.

THE annual exhibition of this Society took place on the above dates, at St. James' Hall, Oxford Street. This immense building, now used by the Society for the first time, is admirably adapted for the purpose, being centrally situated, easy of access from the high road, with sufficient light for the inspection of the various exhibits. Hitherto the show has been held in the Town Hall, but this year the Society attempted greater things, offering better prizes, with Gold and Silver Medals for collections of fruit, the result being that a most magnificent display was got together of plants, cut blooms, fruit, &c.

The centre of the hall was taken up by a very large group of plants from the Botanical Gardens, comprising tall Palms, Ferns, and other foliage plants, which towered well above 200 Chrysanthemums of all shades and forms, the groups being edged with small plants of Coniferæ. Near by was a capital group from Mr. J. Allen, Altrincham, whose Chrysanthemums throughout the show were excellent.

At the other end of the hall was a nice lot from Mr. R. Hardwicke, Ashton-on-Mersey. Messrs. Fisher, Son & Sibray had a fine display of greenhouse Rhododendrons; large plants, full of bright showy flowers. Among the sorts we observed Duchess of Connaught, Duchess of Edinburgh, Prince Leopold, Princess Royal, Princess Alexandra, Princess Frederica, Maiden's Blush, &c. There were nice plants of Clivia nobilis and flowering Orchids, as Oncidium Forbesii, Cheirophorum, Masdevallia tovarensis, &c.

### PLANTS.

In the class for twelve large-flowered Chrysanthemums Mr. T. Statter, Prestwich, was awarded the 1st, having good examples averaging 4 feet high, among them being Prince of Wales, Cassandra, Mr. Bunn, White Venus, Golden Beverley, and Prince Alfred; Mr. S. Bless was 2d, Mr. J. Allen 3d.

For six incurved plants the 1st went to a nice lot shown by J. P. Bolland, Esq., who had Queen of England, Prince of Wales, Empress of India, Alfred Salter, and Golden Empress in excellent form; Mr. J. Allen was 2d; Mr. S. Bless being 3d. Mr. T. Statter, Mr. S. Bless, and J. P. Bolland, Esq., showed three plants, and were placed 1st, 2d, and 3d.

For six Japanese in pots there was strong competition, the prizes ultimately falling to Mr. S. Bless, 1st, with good examples of Alexander Dufour, La Nymphe, L'Isle des Plasirs, Triomphe de la Rue de Chatelet, Gloire de Toulouse, &c.; Mr. Thos. Statter was 2d, having Margot, Hiver Fleur, Bouquet Fait, Elaine, and Peter the Great in good form; Mr. John Heywood was 3d; Mr. J. Allen 4th.

The pompons were not open, and so were rather disappointing. In the class for eight, only two competitors entered, Mr. S. Bless being 1st, and S. Hazzopolo 2d.

For three pompons, which were rather better as regards bloom, Mr. T. J. Bolland was 1st, and Mr. S. Bless 2d.

### CUT BLOOMS.

Passing on to these, of which there was a fine display, and withal of excellent quality, we noticed that the neighbourhood of Liverpool still asserts itself as a grand centre for high-class blooms.

For thirty-six varieties, eighteen incurved and eighteen Japanese, Lieutenant-Colonel Pilkington Prescot was well to the front. Each section was in splendid form, and every bloom perfect. A few of the more noticeable were Empress of India, John Salter, Golden Empress, Prince Alfred, Queen of England, Guernsey Nugget, Jeanne d'Arc, Mrs. Heale, Lord Alcester, Lord Wolseley, and Emily Dale; the Japanese being Meg Merrilies, Comte de Germiny, Mdme. C. Audiguier, Flambeau, Soleil Levant, Jean Delaux, Bouquet Fait, Mrs. Marsham, Criterion, Triomphe du Nord. Mr. J. Allen was 2d, in whose stand were grand blooms of Beauty, Mrs. Brunlees, Prince Alfred, Nil Desperandum, Mons. Lemoine, Boule d'Or, Mdlle. La Croix, Comte Beauregard; Mr.

E. G. Wrigley was 3d, and equal 4th was awarded to J. E. Platt, Esq., and H. S. Woodcock.

In the class for twenty-four, and eighteen incurved, Mr. J. Allen was the only competitor, but his blooms were so uniformly good that he was placed 1st with both lots.

With twelve incurved, A. Tate, Esq., Woolton, Liverpool, was placed 1st, having Mrs. Howe, Inner Temple, Jardin des Plantes, and Jeanne d'Arc, in good form; Mr. J. Allen was 2d, and Mrs. Shaw 3d.

With six incurved, J. King, Esq., and W. Lees, were 1st and 2d.

The stands of Japanese were much admired, there being an attractiveness about these that leads many to stop and admire who pass by other forms. Mr. J. Allen was 1st with twenty-four distinct blooms, each one being of a size and colour fit to compare with any—Mrs. Townsend, Thunberg, Baronne de Prailly, Madame de Savin, Sultana, Oracle, Chang, being among his best; E. G. Wrigley, Esq., was 2d, with a splendid collection; the 3d falling to the Corporation of Stockport.

With twelve Japanese A. Tate, Esq., was 1st, Mrs. Shaw 2d, and Mrs. Monks 3d.

The class for twenty-four miscellaneous cut blooms was taken by Mr. J. Allen over several competitors; the Corporation of Stockport 2d, and equal 3d to H. S. Woodcock and W. Lees.

A very fine lot of cut blooms were staged by Mr. W. Clibran & Sons, not for competition; whilst from Mr. J. W. Springbett, Cheshunt, Herts, a capital lot of Japanese, incurved, Anemone, and reflexed blooms were also shown. In this collection Val d'Andorre and Cullingfordi were some of the best blooms in the show.

FRUIT, &C.

The fruit shown was of excellent quality, the Apples and Pears being such as have been seldom seen in Lancashire. The Pears from Messrs. Bunyard, Maidstone, were splendid examples. Messrs. Bunyard showed a hundred sorts of Apples, and were awarded the Gold Medal; the Silver Medal being taken by Mr. J. Watkins, Hereford, who had 180 dishes, showing many sorts useful for cider making. Messrs. Bunyard also secured a Gold Medal for sixty dishes of Pears—Mr. C. W. Neumann showing about the same number, but which were much less in size; these, however, were awarded a Silver Medal.

In the class for ten dishes of fruit Mrs. Ackers, Congleton, was 1st, with good Gros Maroc and Muscat Grapes, a Pine, Melon, Golden Drop Plum, Worcester Pearmain and King of the Pippins Apples, and Glou Morceau Pear, &c.; 2d, the Earl of Ellesmere, with Golden Queen, Black Alicante Raisin de Calabre, and Gros Colmar Grapes, Melon, Plums, &c.

Mr. G. T. Miles, Wycombe Abbey, was the only competitor, with two Pines; he also secured 1st honours with one Pine-apple, Major Dixon and Mrs. Ackers being 2d and 3d.

The black Grapes were in capital condition, the Earl of Ellesmere being 1st, with Gros Colmar; D. Adamson, Esq., 2d, with the same sort; Mr. J. Heywood, 3d.

White Grapes were shown by Mrs. Ackers, whose Muscats were excellent; Mr. H. S. Woodcock was 2d, Mr. J. Wallis, Keele Hall, 3d. The last-named exhibitor showed a fine collection of Grapes, including Gros Maroc, Alnwick Seedling, Gros Colmar, Mrs. Pearson, White Tokay, Black Alicante, Barbarossa, Mrs. Pince, Black Muscat, Burchardt's Prince, Royal Vineyard, and Muscat of Alexandria, and was awarded an extra prize.

MISCELLANEOUS.

Some excellent bouquets came from A. Heine, Esq., who was 1st for three; Mr. J. Mason being 2d. For one bouquet Mr. J. Mason was, however, 1st; Mr. J. Heywood 2d, and Mrs. Lord 3d. Mr. A. Heine was also 1st with a splendid vase for table decoration, beating D. Adamson, Esq., who came 2d; and Mr. W. Irvine 3d.

From Mr. S. Schloss came spikes of the scarce Bougainvillea lateritia (speciosa); and from Mr. Statter there came a plant in flower of the new and rare Oncidium Jonesianum.

H. Cannell & Sons had a capital stand of double and single zonal Pelargonium blooms, the white Queen of the Belgians being in capital order.

Mr. B. S. Williams, of Holloway, occupied a long table with winter-flowering Heaths, Cyclamen, &c. Messrs. Dickson, Brown & Tait also had a fine lot of Roman Hyacinths, capital in foliage, the bloom standing well up without needing any stakes. The Cyclamens in this stand were large flowering forms and highly coloured.

Mr W. G. Caldwell & Sons showed a collection of foliage and flowering plants, a capital group of small Coniferæ.

Messrs. Dickson & Robinson occupied a large table with a varied assortment, among which were capital Heaths and Solanums.

Messrs. J. & W. Birkenhead made a fine display with Ferns.

On the opposite side Mr. W. Clibran had a large group of Chrysanthemums in splendid condition, 3 to 4 feet high, nicely edged with smaller flowering plants, Ferns, &c.

From Messrs. Smith, of Worcester, came about sixty dishes of Apples, and a fine lot also from F. & A. Dickson, of Chester.

Stands of blooms of Chrysanthemums were shown by Mr. J. Robson, Altrincham; wreaths and crosses by Mr. J. Mason, and Messrs. J. Leech & Son, of Smithfield Market, exhibited a large collection of fruit and flowers, grasses, &c., not for competition. A collection of fruit came also from the Royal Horticultural Society's Gardens, Chiswick.

Messrs. Webb & Sons had about eighty dishes of Potatos, all of excellent quality, some being quite new.

The weather was somewhat against the show, in that it was very cold, sharp frost and cutting wind prevailing much of the time.

## BIRMINGHAM SHOW.

THE Midland Counties Fruit and Flower Show was held in the Town Hall on Nov. 18 and 19, being its twenty-fifth annual exhibition. This Society has made rapid progress, and is now the principal show of this description in the Midland Counties. The entries were very numerous, but there was a considerable falling off in the quality of the cut flowers shown, although the quantity was far greater than usual. The weather on the 18th was not very encouraging to exhibitors of choice exotic plants. Primulas formed a good attraction, over 300 fine well grown plants being staged. They are exceedingly well grown in the neighbourhood of Birmingham. Another interesting feature of the show was a collection of Orchids—about two dozen sorts—from the Right Hon. J. Chamberlain, Highbury, containing some novelties, nicely shown. Mr. Cooper, gr., is to be congratulated upon his fine display, which was much admired.

GROUPS.

The groups were poor after what we have lately seen, the 1st going to Mr. Patterson's specimens. The 1st for nine and six went to Mr. Dyer, gr. to Mrs. Marigold, whose plants were a long way ahead of the others; the 1st for pompons was awarded to Mr. W. White. Standards—no entries.

CUT BLOOMS OF CHRYSANTHEMUMS.

These were shown in great quantity, but they were not what one expected to see for such liberal prizes as £10, £7, £4, and £2. The 1st for forty-eight flowers, twenty-four Japanese and twenty-four incurved Chrysanthemums, went to Mr. P. Southey; the 1st for twenty-four blooms, twelve of each, to Mr. G. A. Everett. The 1st for eighteen incurved to Mr. H. Lovatt; the other 1st falling to the same exhibitor. For local growers, Messrs. Everitt and Madeley were the winners.

OPEN CLASSES.

These were very fine: Messrs. Pope & Sons taking all the honours with good examples of cultivation. The 1st for Cyclamens and Epiphyllums was awarded to the Right Hon. J. Chamberlain (Mr. Cooper, gr.).

GARDENERS AND AMATEURS.

Nine stove and greenhouse plants.—1st, Mr. F. A. Walton, for a decent lot; 1st for six, Mr. Dyer, gr. to Mrs. Marigold, for a good neat collection.

Primulas here, as in the open classes, were very good—the 1st prize going to Messrs. Martineau, Matthews, and Taunton.

Poinsettias.—1st, Mrs. Marigold, for fair plants.

Three grand plants of Mignonette from Mr. Martineau were 1st.

Zonals from the Right Hon. J. Chamberlain (Mr. Cooper, gr.) were awarded the premier prize.

BOUQUETS.

These were well done, both by nurserymen and gardeners. The 1st prize in the former competition was awarded to Messrs. J. B. Thompson; and 1st for amateurs to Mr. C. E. Mathews.

Epergne.—1st, Mrs. Marigold; while 1st for buttonholes went to Mr. Payton.

FRUIT, &C.

Grapes were good, being well coloured and nicely finished, the Rev. B. W. Stanners, Mr. Corbett, and Mr. Everett taking the leading prizes.

Apples and Pears, fine clean well-coloured fruit, were extensively shown, the competition being very keen for the 1st prize for dessert Apples and Pears. Sir H. Vernon was 1st for Apples, and Mr. Thornley for Pears. For culinary Apples, to Mr. Higgins; and Pears, Mr. Corbett.

Cucumbers and Mushrooms were well shown; of the former a nice brace from Lady Edwards obtained 1st; while a good dish of Mushrooms from Mr. Mitchison, Perry Hall Gardens, was 1st.

MISCELLANEOUS EXHIBITS.

The various groups shown by the local nurserymen did them great credit; the corners of the large hall were allotted to them. From Hans Niemand, Edgbaston (Mr. Spinks manager), came a fine collection of beautifully arranged stove and greenhouse plants, ornamental flowering and foliage plants, and some well grown Cyclamens of a good strain.

Messrs. Thompson occupied the opposite corner with a group of similar plants; a fine cross and wreath of gigantic size was also shown by this firm.

At the opposite end of the hall the corners were filled with collections of plants from Mr. R. H. Vertegans, Chad Valley, and Messrs. Pope & Sons. The former had some good Roman Hyacinths, Primulas, Cyclamen, Poinsettias, &c. Messrs. Pope showed some fine single and double Pelargoniums, well grown and flowered. They also showed some rustic-work.

From Messrs. Cannell, Swanley, came some cut flowers of zonal Pelargoniums and single Chrysanthemums, including the new Cullingfordii, which were greatly admired.

In the galleries Messrs. Smith & Co., Worcester, showed a collection of Japanese plants, also Pears and Apples. The Rev. A. Williams, Stratford-on-Avon, exhibited a collection of Apples.

Messrs. Perkins & Sons, Coventry, displayed cut Roses, wreaths and cross, beautifully made up. A new Fern, in the way of Gymnogramma schizophylla, was exhibited by Messrs. Pope & Sons. It is a fine Fern, of graceful habit; the entire stock was purchased by Mr. Outram for Mr. B. S. Williams.

It is very gratifying to state the decision of the judges gave great satisfaction; everything passed off very satisfactorily. *A. O.*

## BURTON-ON-TRENT: November 18 and 19.

THE first Chrysanthemum exhibition under the auspices of the Burton Floral and Horticultural Society was held in St. Paul's Institute, a building at once handsome, spacious, lofty, well lighted, and comfortable—comfortable alike to plants and visitors, the floor being of wood and the room heated by means of hot water. At one end is an orchestra, and a beautiful organ, upon which recitals were given each day. The exhibition florally was a complete success, and would vie in quality of produce with others longer established and of greater renown.

The specimen Chrysanthemums, incurved and Japanese, exhibited by Mr. Prince, gr. to the Misses Gretton, Bladon House, Burton, were thoroughly well grown and flowered, and highly creditable to the cultivator.

The Mayor of Burton (Alderman Lowe) exhibited a very beautiful specimen standard Chrysanthemum (Mrs. Rundle), with an immense head, and bearing a great profusion of good flowers; the flowering shoots were not staked, and therefore the upper part was devoid of the stiffness usually seen in standards.

The groups of Chrysanthemums arranged for effect down one side of the hall presented a large bank of good and brightly coloured flowers to the eye. The 1st prize in this class was deservedly awarded to Mr. Warren, gr. to T. Robinson, Esq., who had a most effective group of healthy, well-flowered plants.

Cut blooms were well represented and of good quality, the 1st prize for twenty-four incurved and twenty-four Japanese being awarded to Mr. J. Udale, gr. to H. E. Watson, Esq., Shirecliffe Hall, Sheffield; Mr. Howe, of Nottingham, being a good 2d.

Sir Henry Allsopp, Hindlip Hall, Worcester (gr., Mr. Barker), sent some fine samples of cut blooms of Chrysanthemums, not for competition.

Fruit was shown of excellent quality by Mr. Brunt, gr. to the Earl of Carnarvon, Bretby Hall, and by Mr. Maynard, gr. to Sir G. Beaumont, Cole Orton Hall.

Groups of miscellaneous plants arranged for effect (Chrysanthemums excluded) brought strong competition, Messrs. Meaking, Brunt, and Johnson taking honours in the order namedwith tastefully arranged groups.

Mr. W. Fisher, of the Horninglow Cross Nurseries, who has rendered considerable assistance in forming and bringing to a successful issue the first exhibition, contributed considerably to its floral success by sending a beautiful group of plants, not for competition, which consisted principally of a background of Palms and other foliage plants, with an elegant bordering of Ferns, interspersed with Poinsettias, Eucharis, Roman Hyacinths, Primulas, Azaleas, Chrysanthemums, &c. The same gentleman also exhibited an exquisitely made cross and wreath.

Mr. Barratt, the Secretary, and his colleagues, Messrs. Rudd, Fisher, Cooper, Lea, &c., are to be congratulated on the success of their combined efforts.

## HAMPSTEAD CHRYSANTHEMUM: November 18 and 19.

THIS Society held its fifth annual exhibition in the Vestry Hall, Haverstock Hill, on the above dates. Most of the classes were well represented, those for specimen plants especially so. The most was made of the various exhibits as regards effect in arrangement, a fine group of decorative plants from Messrs. Cutbush & Son and the splendid groups of Chrysanthemums being the most striking features at a glance; but on close inspection of the flower stands, amongst a good lot of blooms, a judge or lover of these favourite flowers could not help singling out at least two flowers as exceptionally fine. One of these blooms, a Boule d'Or, shown by Mr. Tribe, gr. to H. M. Matheson, Esq., Heathlands, Hampstead, was pronounced by all who saw it as the finest bloom they had seen this year. The other, a Meg Merrilies, was shown by Mr. Williams, gr. to Mrs. Inman, Frognall Rise, Hampstead.

GROUPS OF PLANTS.

For the best group Mr. Tribe was deservedly 1st, with a very neat group of well grown plants; 2d, Mr. Relland, gr. to — Baylis, Esq., St. Cuthbert's, West Heath; 3d, Mr. Banks, gr. to E. Gotto, Esq., The Logs, Hampstead. The specimen plants, besides being numerous, were very fine in quality.

For six incurved Mr. Tribe was 1st; 2d, Mr. H. Gibbs, gr. to Miss Carter, Sandfield Lodge, West Heath.

For six Japanese Mr. Tribe was also 1st, with grand examples; 2d, Mr. H. Gibbs. For six pompons Mr. H. Gibbs was 1st with a nice lot.

For a single specimen incurved Mr. Relland was 1st with a fine dwarf plant of Mrs. Dixon; 2d, Mr. Tribe, with Queen of England.

For a single specimen Japanese Mr. Tribe was 1st with a well grown Golden Dragon; 2d, Mr. Relland, with Elaine.

For the best specimen reflexed.—1st, Mr. Tribe, with Julia Lagrave; 2d, Mr. Hawkins, gr. to H. Field, Esq., The Proyors, Hampstead, with Golden Christine.

CUT BLOOMS.

For twelve incurved, distinct, Mr. H. Gibbs was 1st, with a good lot; 2d, Mr. J. Powley, gr. to Mrs. White, Ivy House, North End; 3d, Mr. Tribe.

For twelve reflexed Mr. Relland was 1st.

For twelve Japanese Mr. J. Powley and Mr. Tribe were equal 1st; 2d, Mr. J. Williams.

For twelve bunches (three in a bunch), pompons, Mr. J. Powley was 1st; 2d, Mr. Relland.

There were also various other classes for amateurs and cottagers, which, as a rule, were well contested, but the quality of which does not call for special mention.

Various special prizes were awarded by patrons of the Society, and brought forth a lively competition. For six plants, Japanese, Mr. Relland was 1st; 2d, Mr. Tribe. For six incurved Mr. Tribe was 1st with similar plants to his others; 2d, Mr. Relland. For twelve cut blooms, large flowering, Mr. H. Gibbs was 1st; for twelve Japanese, Mr. H. Tribe. *C. Y.*

## HULL CHRYSANTHEMUM: November 19 and 20.

ON Thursday of last week there opened in the Artillery Barracks, Park Street, the annual show of the Hull and East Riding Chrysanthemum Society, and in point of entries and merit of exhibits it was far ahead of the very excellent show of last year. The large drill hall was occupied on each side by groups of Chrysanthemums in pots, whilst the tables in the centre of the room were devoted mainly to the exhibition of cut blooms. The gun-room was also devoted to the purposes of the exhibition, there being in this room an excellent show of plants in pots, principally by local amateurs.

In the north hall there was a tasteful exhibition open to ladies only. In the centre of this room was a dessert table competition, the floral decoration of which was limited to Chrysanthemums, in combination with other foliage. In addition there were in the ladies' department many tasteful arrangements of cut blooms of Chrysanthemums.

In front of the orchestra there was a most varied and attractive group of Chrysanthemum and other blooms by Mr. E. P. Dixon, who had also tastefully decorated the orchestra, but Mr. Dixon's exhibits were not for competition.

Mr. W. E. Martin had a most attractive exhibition, not for competition, at the west end of the room, consisting of bulbs of various kinds, grasses, seeds, &c. Altogether there were sixty-one exhibitors for competition, and many of them exhibited in nearly every class.

Classes 1 to 9 were open to all England, and 10 to 13 to exhibitors in the East Riding of Yorkshire, or in Lincolnshire within 20 miles of Hull. In class 1 a Silver Challenge Vase of the value of £15 guineas was offered by Mr. G. Bohn, the Chairman of the Society, in addition to the 1st prize of £10. The conditions with regard to the Challenge Vase were, that if an exhibitor should win it three times, or twice consecutively, it shall become his property. There were four prizes in the first class; the 2d being £8, 3d £5, 4th £2. It consisted of forty-eight blooms, twenty-four incurved in not less than eighteen varieties, and twenty-four Japanese in not less than eighteen varieties. This was without doubt the most attractive portion of the exhibition, not even excluding the massive and well-arranged groups. There were eight competitors in this class. The second class was a most excellent one, and the prizes substantial.

In the amateur class a Silver Challenge Cup was offered by the Hull Amateur Floral and Horticultural Society for the best tray in classes 21 and 22, in each of which there were twelve blooms of Chrysanthemums, those in class 22 being Japanese.

In the open classes for plants in pots the 1st prize in class 27 was £5, and with it was presented an oil painting by Mr. J. F. Norton, artist, Hull.

CUT BLOOMS.

Forty-eight blooms.—Challenge Vase and 1st prize, Sir T. Edwardes Moss, Bart., Otterspool, near Liverpool (gr., Mr. D. Lindsay); 2d, C. W. Newmann, Esq., Wyncote, Allerton, near Liverpool (gr., Mr. W. Mease); 3d, J. Woolwright, Esq., Mosely Hill, near Liverpool (gr., Mr. Green); 4th, Mr. T. B. Morton, Mowden Bridge Nurseries, Darlington.

Twenty-four blooms.—1st, Sir T. E. Moss, Bart.; 2d, Mr. C. W. Newmann; 3d, Mr. J. Woolwright.

Twelve blooms incurved.—1st, Mr. C. W. Newmann; 2d, Mr. J. Woolwright; 3d, C. H. Johnson, Esq., Thorngumbald Hall (gr., Mr. G. Usher).

Twelve blooms Japanese.—1st, Sir T. E. Moss, Bart.; 2d, Mr. C. W. Newmann; 3d, Mr. J. Woolwright.

Twelve blooms, Anemones.—1st, Mr. T. B. Morton; 2d, D. Wilson, Esq., Cottingam (gr., H. Bulmer); 3d, W. J. Warrener, Esq., Bracebridge (gr., W. Mitchell). Twelve blooms, ditto, reflexed.—1st, Mr. T. B. Morton; 2d, W. Ashley, Esq., Limefield House, Lincoln (gr., J. Bugg); 3d, Mr. C. H. Johnson.

Six blooms, one variety.—1st, Mr. C. W. Newmann; 2d, Mr. W. J. Warrener; 3d, Mr. J. Howe, Peas Hill Road, Nottingham.

Best incurved cut bloom in the show.—Mr. J. Woolwright.

Best Japanese cut bloom.—Mr. C. W. Newmann.

Twelve blooms incurved, and twelve Japanese.—1st, Mr. F. W. Jameson, Eastella, Hull; 2d, Mr. D. Wilson; 3d, A. Wilson, Esq., Tranby Croft (gr., Mr. J. P. Leadbeater).

Twelve blooms incurved, not less than six varieties. 1st, Mr. E. Harland, Cottingham; 2d, Mr. C. H. Johnson; 3d, Mr. F. W. Jameson.

Twelve blooms, six varieties.—1st, Mr. David Wilson; 2d, Mr. F. W. Jameson; 3d, Mr. J. Browsho, Beverley.

Six incurved and six Japanese.—1st, Mr. W. J. Tall, Harland Rise, Cottingham; 2d, Mr. D. Wilson; 3d, Mr. F. W. Jameson.

AMATEUR CLASSES.

Six incurved and six Japanese.—1st, Mr. W. Roper, Hull; 2d, Mr. A. W. Stanley, Hull.

Three incurved and three Japanese.—1st, Mr. W. Roper; 2d, Mr. A. W. Stanley; 3d, Mr. R. I'Anson, Hull.

Six blooms, reflexed.—1st, Mr. A. W. Stanley; 2d, Mr. W. Roper; 3d, Mr. E. Goddard, Hull.

Six blooms, Anemones.—1st, Mr. W. Roper; 2d, Mr. E. Goddard; 3d, Mr. A. W. Stanley.

Best incurved cut bloom in amateur classes.—Mr. Goddard.

Best Japanese cut bloom.—Mr. A. W. Stanley.

Twelve blooms incurved.—Challenge Cup and 1st, Mr. E. Goddard; 2d, Mr. A. W. Stanley; 3d, Mr. S. Garbutt.

Twelve Japanese.—1st, Mr. E. Goddard; 2d, Mr. A. W. Stanley.

Twelve blooms, any variety.—1st, Mr. G. Kidson, Hull; 2d, Mr. A. W. Stanley; 3d, Mr. T. Mapplebeck, Hull.

Six blooms, incurved.—1st, Mr. G. Kidson; 2d, Mr. A. W. Stanley; 3d, Mr. J. Melbourne.

Six Japanese blooms.—1st, Mr. E. Goddard; 2d, Mr. A. W. Stanley; 3d, Mr. S. F. Smith, Newington, Hull.

Six blooms, varieties.—1st, Mr. G. Kidson; 2d, Mr. E. Goddard; 3d, Mr. A. W. Stanley.

PLANTS IN POTS.

Group interspersed with foliage, arranged for effect in a space of 100 feet.—Oil painting, value 5 guineas, and 1st, D. Wilson, Esq. (Mr. G. Lawson, gr); 2d, Mr. J. S. Graham; 3d, Mr. G. Cottam, Jun., Cottingham; 4th, Lieut.-Colonel Saner (gr., Mr. J. Howell).

Six distinct varieties, bush grown, but on a single stem.—1st, Mr. D. Wilson; 2d, Mr. J. H. Wood; 3d, Mrs. Ross, Illoughton (gr., Mr. W. Wilkinson).

Three trained specimens, any variety.—1st, Mr. D. Wilson; 2d, T. L. Read, Esq., Newington, Hull (gr., Mr. W. Merritt); 3d, Lieut.-Colonel Brooshooft, Kirkella (gr., Mr. W. Mason).

Three distinct varieties, bush grown.—1st, Mr. W. J. Tall; 2d, Mrs. Ross; 3d, Mr. J. H. Wood.

One trained specimen.—1st, Mr. R. Stamper, Thorngumbald; 2d, Lieut.-Colonel Brooshooft; 3d, Mrs. Ross.

Three dwarf, distinct varieties, for window or table decoration.—Mrs. Ross.

AMATEUR CLASSES FOR PLANTS.

Twelve plants, six incurved and six Japanese.—1st, Mr. H. J. Bethell, Hull; 2d, Mr. G. Kidson.

Three plants, any variety.—1st, Mr. A. W. Stanley; 2d, Mr. H. J. Bethell; 3d, Mr. C. D. Foster, Hull.

Twelve plants, any variety.—1st, Mr. J. Raby, Hull; 2d, Mr. S. Davey, Hull; 3d, Mr. A. W. Stanley.

Six plants, any variety.—1st, Mr. G. W. Oakley, Newland; 2d, R. Petch, Hull; 3d, Mr. D. C. Foster.

Three plants, any variety.—1st, Mr. G. Kidson, 2d, Mr. D. C. Foster; 3d, Mr. S. Davey.

One plant, any variety.—1st, Mr. J. Browsho; 2d, Mr. G. W. Oakley; 3d, Mr. R. Petch.

LADIES' CLASSES.

Dessert-table for six persons.—1st, Miss M. K. Reckitt, Swanland Manor; 2d, Mrs. Thomas Bailey, Norfolk House, Hessle; 3d, Miss Gertrude A. Dixon, Stepney Lodge, Hull.

Hand bouquet of Chrysanthemums.—1st, Mrs. G. Cottam, Cottingham; 2d, Miss Jameson, Eastella; 3d, Miss Swanson, Barton-on-Humber.

Best-arranged stand or vase for table decoration.—1st, Mrs. L. C. Cook, Hessle; 2d, Miss Ethel Jameson, Eastella; 3d, Mrs. D. Joy, Welton Garth.

Arrangement of cut blooms.—1st, Miss Ethel Jameson; 2d, Mrs. H. J. Bethell; 3d, Mrs. W. W. Logan, Hull.

Messrs. J. Dickson & Sons, Chester, and Messrs. Richard Smith & Co., Worcester, had stands of fruit; and Messrs. Cannell & Sons, Swanley, Kent, had Pelargoniums and single-flowered Chrysanthemums, not for competition. *Hull News.*

THE VEGETABLE PRODUCTS OF RUSSIA.—There are few countries where the adaptation of cultivated fruits and vegetables to climate is more perfect than in central Russia. The fruit trees are dwarfed, with leaves remarkably close-celled and firm, so as to resist the aridity and severity of climate. The close texture of most of the central Russian plants adapts them admirably to their surroundings. Fruits and vegetables which are usually associated with warmer climates are grown in abundance. Russia is noted for its Water Melons and Musk Melons. The best of their Musk Melons is an analomous vegetable, being scarcely like our Musk Melon. It possesses little musky flavour. It keeps until Christmas. Plums and Cherries are grown at high latitudes, and the native varieties are hardy. German sorts are grown far north also, but they usually need protection, and are uncertain. Even the Reine Claude Plum is grown in Russia, but the trees are planted in a leaning condition, making an angle of 45°, or less, with the surface, and are bent to the ground before the snow falls. *The Farmers' Gazette.*

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON*

FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 25, 1885.

| MONTH AND DAY | BAROMETER: Mean Reading at 32° Fahr. | BAROMETER: Departure from Average of 15 years | TEMPERATURE OF THE AIR: Highest | Lowest. | Range | Mean for Day. | Departure of Mean from Average of 15 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition.: Dew Point | Degree of Humidity Sat. = 100 | WIND.: Average Direction | RAINFALL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 19 | 29.78 | +0.07 | 45.3 | 31.2 | 14.1 | 39.3 | —2.5 | 35.2 | 88 | E. N. E. | 0.09 |
| 20 | 29.75 | +0.05 | 44.5 | 40.0 | 4.5 | 41.9 | +0.2 | 39.1 | 88 | E. | 0.00 |
| 21 | 29.44 | —0.25 | 43.2 | 32.9 | 10.3 | 37.5 | —4.2 | 33.1 | 95 | E.; E.S.E. | 0.00 |
| 22 | 29.39 | —0.3 | 47.0 | 34.8 | 12.2 | 41.6 | —0.1 | 40.1 | 97 | N.E. E. N.E. | 0.02 |
| 23 | 29.39 | —0.30 | 43.5 | 38.0 | 5.5 | 40.3 | —1.4 | 37.5 | 91 | E. | 0.00 |
| 24 | 29.36 | —0.32 | 49.6 | 36.0 | 13.6 | 38.2 | —3.4 | 37.4 | 97 | E. | 0.34 |
| 25 | 29.19 | —0.51 | 47.3 | 39.0 | 8.3 | 44.1 | +2.5 | 43.7 | 98 | E. | 0.24 |
| Mean | 29.46 | —0.24 | 44.3 | 36.0 | 8.3 | 40.4 | —1.2 | 38.0 | 93 | E. | 0.58 |

Nov. 19.—Dull day.
— 20.—Dull day.
— 21.—Fine and bright in early morning; dull day.
— 22.—Dull day; faint gleams of sunshine between 1 P.M. and 2 P.M.
— 23.—Dull day.
— 24.—Rain from early morning till noon; fine, but very dull afterwards.
— 25.—Dense fog in early morning; drizzling rain all day and night.

LONDON: *Atmospheric Pressure.*—During the week ending November 21, the reading of the barometer at the level of the sea increased from 29.70 inches at the beginning of the week to 30.44 inches by 1 P.M. on the 16th, decreased to 29.82 inches by 1 P.M. on the 18th, increased by 9 A.M., decreased to 29.23 inches by 1 P.M. on the 19th, increased to 29.99 inches by 9 A.M. on the 20th, and was 29.56 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.03 inches, being 0.13 inch lower than last week, and 0.13 inch higher than the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 45°.3, on the 19th; on the 17th the highest was 40°.1. The mean of the seven high day temperatures was 42°.5.

The lowest temperature was 27°.5, on the 16th, on the 20th the lowest temperature was 40°. The mean of the seven low night temperatures was 31°.6.

The greatest range of temperature in one day was 14°.5, on the 16th; the smallest was 4°.5 on the 20th. The mean of the seven daily ranges was 10°.9.

The mean temperatures were, on the 15th, 36°.4; on the 16th, 34°.9; on the 17th, 33°.8; on the 18th, 33°.9; on the 19th, 39°.3; on the 20th, 41°.9; and on the 21st, 37°.5; and these were all below their averages (excepting the 20th, which was 0°.2 above) by 5°.9, 7°.3, 8°.2, 8°, 2°.5, and 4°.2 respectively.

The mean temperature of the week was 36°.8, being 6° lower than last week, and 5°.1 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 74°.5, on the 16th. The mean of the seven readings was 63°.1.

The lowest reading of a minimum thermometer placed on grass was 19°.5, on the 16th. The mean of the seven readings was 26°.6.

*Rain.*—No rain fell during the week.

ENGLAND: *Temperature.*—During the week ending November 21, the highest temperatures were 54° at Truro, 52° at Plymouth, 50° at Newcastle; the highest at Bolton was 42°.7; at Bradford 43°.2, at Liverpool 43°.8. The general mean was 46°.4.

The lowest temperatures were 22°.5 at Cambridge, 23° at Wolverhampton and Sheffield; the lowest at Plymouth was 34°.5, at Truro, and Brighton 31°. The general mean was 27°.3.

The greatest ranges were 23° at Truro and Newcastle, 22°.4 at Cambridge; the least ranges were 13°.8 at Liverpool, 15°.8 at Preston, 15°.2 at Bolton, The general mean was 19°.1.

The mean of the seven high day temperatures was highest at Truro, 49°.4, at Plymouth 47°.4, at Hull and Newcastle 44°.1, and was lowest at Wolverhampton 40°.7, at Bolton 41°.2, at Liverpool 41°.3. The general mean was 43°.2.

The mean of the seven low night temperatures was highest at Truro, 40°.4, at Plymouth 38°.3, at Brighton 34°.1; and was lowest at Wolverhampton, 27°.5, at Cambridge 27°.6, at Bristol 29°.3. The general mean was 32°.6.

The mean daily range was greatest at Cambridge, 15°.2, at Wolverhampton 13°.2, at Bristol 12°.3; and was least at Liverpool, 7°.5, at Truro and Brighton 9°. The general mean was 10°.6.

The mean temperature was highest at Truro, 44°.6, at Plymouth 42°.6, at Newcastle 38°.4; and was lowest at Wolverhampton, 33°.8, at Cambridge 34°.9, at Bristol 35°.1. The general mean was 37°.5.

*Rain.*—The largest falls were 0.52 inch at Truro, 0.16 inch at Bristol, 0.15 inch at Leeds; the smallest falls were 0.01 inch at Liverpool, Bolton, and Hull. No rain fell at Brighton, Blackheath, or Sheffield. The general mean fall was 0.09 inch.

SCOTLAND: *Temperature.*—During the week ending November 21, the highest temperature was 46°.7 at Aberdeen; at Perth the highest temperature was 42°.5. The general mean was 44°.2.

The lowest temperature in the week was 13°, at Perth; at Leith the lowest temperature was 22°.5. The general mean was 18°.5.

The mean temperature was highest at Leith, 34°.5; and lowest at Perth, 30°. The general mean was 33°.

*Rain.*—The largest fall was 0.21 inch, at Aberdeen; the smallest fall was 0.03 inch, at Paisley. The general mean was 0.07 inch. No rain fell at Greenock during the week.

JAMES GLAISHER, F.R.S.

## Answers to Correspondents.

*** OUR ALMANAC FOR 1886.—*Secretaries of Provincial and Metropolitan Horticultural Societies are invited to send us, as soon as possible, the dates of their meetings and exhibitions during the ensuing year, so as to ensure their insertion.*

APPLES: *G. Donaldson.* We do not think your package came to hand.

BOOKS: *A Young Gardener.* Thompson's *Gardeners' Assistant* is the best you can get; it is published by Messrs. Blackie & Son, Paternoster Buildings, London, E.C.; its price, new, is 31s. 6d.—*A Manual of The Coniferæ*, published by J. Veitch & Sons, 544, King's Road, Chelsea, S.W., is the book you mean on Conifers, and would suit you very well.

DOUBLE LAPAGERIA BLOOM: *J. M.* The habit is not likely to prove constant. The foliage is very fine indeed, showing that the plant is in exuberant health, to which fact the doubling of the flower may be due. We frequently have flowers of Lapageria sent which show doubling of parts to a much greater extent than these.

EMIGRATION: *T. Adams.* For all information on such a subject you had better apply to the New South Wales Government Emigration Office, 5, Westminster Chambers, S.W.; the South Australian Government Offices, 8, Victoria Chambers, Victoria Street, S.W.; or some other of the emigration agents.

EUCHARIS BULBS: *R. Dunlop.* Your bulbs are slightly infested with the mite. There is no known cure, so that your only method of extirpation, to prevent its ravages amongst yet healthy bulbs, will be to burn all that appear affected in the slightest degree, or which have grown in pots with infected bulbs.

FUNGI: *A. D. H.* The spores of the Juniper fungus transferred to the Pear produce the Roestelia. There are many such cases recorded, but some of them are open to doubt.

"HARVEY'S LIFE": *R. W. A., Natal.* Bell & Daldy, York Street, Covent Garden, W.C. A letter will follow.

JAPANESE ANEMONE VAR. IN A STAND OF JAPANESE CHRYSANTHEMUMS: *K. G.* No, it should not disqualify.

LABELS IN 1884: *E. Jones.* We have no record of the name of the person who was awarded a prize by the Society of Arts. You might apply to the Secretary of the Society.

NAMES OF FRUIT.—*S. B. Apple:* Pomerov. *J. O B.*, 1, *Pear:* Triomphe de Jodeygne; 4, *Apple* London Pippin; 5 and 6, Flower of Kent; 7, Northern Greening.—*W. J. S.* 1 and 2, not recognised, very fine; 3, New Hawthornden, 4, Lord Derby; 5, Pitmaston Russet Nonpareil; 6, Peasgood's Nonsuch.—*M. J. T. Apples:* 1, Round Winter Nonsuch; 2, Fearn's Pippin; *Pears:* 1, Marie Louise; 2, Winter Nelis.—*James Smith.* A fine-looking Apple, greatly resembling Flanders Pippin.—*George Wall. Pear:* Beurré Diel.—*Alfred N. Jones.* 3, Forelle; 7, Josephine de Malines; 9, Marie Louise; 12, Beurré Rance; others so much bruised and out of character that they cannot be recognised.—*Albert Butcher.* 1, not known; 2, Thoresby Seedling; 3, Hambledon Deux Ans.—*A. W.* 1, variety of Crab; 2, *Pear:* Knight's Monarch.—*J. Potter.* 2, Doyenné Gris; 2, Flemish Beauty; 3, Passe Colmar; 5, Beurré Diel; 6, Doyenné Boussouch.—*T. Jackson. Pears:* 1, Gansell's Bergamot; 4, Doyenné Gris; 5, Napoleon; *Apples:* 2, decayed; 6, Blenheim Orange; 7, Bedfordshire Foundling; 8, Franklin's Golden Pippin; 9, Margil; 10, Claygate Pearmain.—*J. B.* 1, Brown Beurré; 2, Beurré d'Aremberg; 3, Old Crassane; 4, Duchesse d'Angoulême; 5, Beurré de Capiaumont; 7, Doyenné Boussoch.

NAMES OF PLANTS: *J. E.* Oncidium diodon. Please send the two Ferns again.—*Southampton.* Drimys Winteri.—*W. H. Stevens.* Epidendrum cochleatum var.—*B. W.* Odontoglossum Insleayii splendens. Several plants of it have flowered in collections this year.—*E.*C.* Cœlogyne Gardneriana.—*H. J. Ross.* Pilumna laxa.

PEAR LEAVES WITH MICROSCOPIC THREAD-WORMS.—A correspondent has forwarded Pear leaves spotted with pallid patches. On a microscopical examination the spots are seen to be infested with minute nematoid worms allied to the worms which cause the rotting of Carnations. Similar examples were forwarded last year. *W. G. S.*

SOUTH AFRICAN PLANTS: *J. R. Twisden.* In reply to your enquiry we are unable to say if Mr. Sanderson is still alive; but a good set of the plants he collected, together with some of his original, and copies of other of his drawings are preserved in the Kew herbarium. The first set of Cooper's plants, and nearly complete sets of those collected by Gerrard and Krauss, are also in the Kew herbarium. *N. E. Brown, Herbarium, Kew.*

TESTIMONIAL TO MR. INGRAM: *C. W. D.* Hon. Secretary, W. L. Emmerson, Waltham-on-the-Wolds, Melton Mowbray.

VINE ROOTS: *X.* Brunfelsia americana.

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COMMUNICATIONS RECEIVED:—A., Natal.—P. W., St Petersburg.—J. S., H. E.—A. D. W. E. M.—Dr. Watt, Calcutta.—Wild Rose.—H. S.—W. B. H.—E. T. E.—Sander & Co.—E. W. B.—R. W. Allan.—J. W.—J. H.—T. G.—W. S.—W. Smyth.—H. E. J. D.

# Markets.

*COVENT GARDEN, November 26.*

MARKET very quiet and heavy, with large supplies of Grapes. Large importation of Canadian and Nova Scotia Apples at low prices. *James Webber, Wholesale Apple Market.*

FRUIT—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0– 3 0 | | Pine-apples, Eng., lb. | 2 0– .. | |
| — Canadian, barrel | 10 0–20 0 | | — St. Michael, each | 2 6– 5 0 | |
| Grapes, per lb. | 0 6– 2 6 | | Pears, per dozen | .. 0 9– 1 3 | |
| Kent Cobs, 100 lb. | 22 6–25 0 | | — per ½-sieve | .. 1 0– 3 0 | |
| Lemons, per case | .. 15 0–18 0 | | | | |

VEGETABLES—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, per doz. | 1 0– .. | | Mushrooms, punnet | 1 0– 1 6 | |
| Beans, Kidney, lb. | 1 0– .. | | Mustard and Cress, do. | 0 4– .. | |
| Beet, red, per dozen | 1 0– 2 0 | | Onions, per bushel | .. 4 0– .. | |
| Broccoli, bundle | .. 0 9– 1 0 | | Parsley, dozen bunch | 2 0– 3 0 | |
| Cabbages, per dozen | 1 0– .. | | Parsnips, per dozen | 1 0– .. | |
| Capsicums, per 100 | 1 6– 2 0 | | Potatos, per cwt. | .. 4 0– 5 0 | |
| Carrots, per bunch | 0 6– .. | | — kidney, per cwt. | 4 0– 5 0 | |
| Cauliflowers, per doz. | 2 0– 3 0 | | Salsafy, per bundle | 1 0– .. | |
| Celeriac, per root | 0 3– .. | | Scorzonera, p. bundle | 1 0– .. | |
| Celery, per bundle | 1 6– 2 0 | | Seakale, punnet | .. 2 6– .. | |
| Coleworts, doz. bunch | 2 0– 4 0 | | Shallots, per pound | 0 3– 0 0 | |
| Cucumbers, each | .. 0 6– 1 0 | | Spinach, per bushel | 2 0– 4 0 | |
| Endive, per dozen | 1 0– 2 0 | | Sprouts, per pound | 0 3– .. | |
| Herbs, per bunch | 0 2– .. | | Sprue, bundle | .. 1 0– .. | |
| Leeks, per bunch | 0 3– 0 4 | | Tomatos, per lb. | .. 0 6– 1 0 | |
| Lettuce, per dozen | 1 0– 1 6 | | Turnips, bunch | .. 0 6– .. | |

POTATOS.—Magnum Bonums, bad trade, 50s. to 80s.; Regents, 60s. to 80s. per ton; German Reds, 2s. to 2s. 6d. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0–18 0 | | Ficus elastica, each | 1 6– 7 0 | |
| Arbo. vitæ (golden), per dozen | .. 6 0–18 0 | | Ferns, in variety, per dozen | .. 4 0–12 0 | |
| — (common), dozen | 6 0–12 0 | | Foliage Plants, various, each | .. 2 0–10 0 | |
| Arum Lilies, dozen | 12 0–18 0 | | Hyacinths, Roman, per pot | .. 1 0– 1 3 | |
| Begonias, per dozen | 6 0–12 0 | | Hyacinths, per dozen | .. 2 0–12 0 | |
| Bouvardia, doz. | .. 12 0–18 0 | | Marguerite Daisy, per dozen | .. 3 0–12 0 | |
| Cineraria, per doz. | 10 0–12 0 | | Myrtles, per dozen | 6 0–12 0 | |
| Chrysanth., per doz. | 9 0–18 0 | | Palms in var., each | 2 6– 21 0 | |
| Cyclamen, per pot | .. 1 0– 1 3 | | Pelargoniums, Scarlet, per dozen | .. 6 0– 9 0 | |
| Cyperus, per dozen | 4 0–12 0 | | Pelargoniums, per dozen | .. 12 0–18 0 | |
| Dracæna tricolor, per dozen | .. 30 0–60 0 | | Primulas, single, 12 pots | 4 0– .. | |
| — viridis, per doz. | 12 0–24 0 | | Tulips, 12 pots | 8 0– .. | |
| Erica, various, doz. | 12 0–21 0 | | | | |
| Euonymus, in var., per dozen | .. 6 0–12 0 | | | | |
| Evergreens, in var., per dozen | .. 6 0–24 0 | | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | | Lilium longiflorum, 12 blooms | .. 6 0– 8 0 | |
| Acacia (Mimosa), per bunch | .. 0 6– 1 0 | | Marguerites, 12 bun. | 2 0– 4 0 | |
| Arum Lilies, 12 blms. | 6 0– 8 0 | | Mignonette, 12 bun. | 1 6– 3 0 | |
| Azalea, 12 sprays | 1 0– 2 0 | | Pelargoniums, per 12 trusses | .. 1 0– 1 6 | |
| Bouvardias, per bun. | 0 6– 1 0 | | — scarlet, 12 trusses | 0 9– 1 0 | |
| Camellias, 12 blms. | 1 0– 3 0 | | Poinsettia, 12 blms. | 4 0– 6 0 | |
| Chrysanths., 12 blms. | 0 6– 4 0 | | Roses (indoor), per dozen | .. 1 0– 3 0 | |
| — 12 bunches | .. 4 0–12 0 | | — Tea, French, doz. | 1 0– 1 6 | |
| Cyclamen, doz. blms. | 1 0– 2 0 | | red, French, doz. | 1 6– 2 0 | |
| Euphorbia, dozen blooms | .. 0 6– 1 0 | | Stephanotis, 12 sprays | 5 0– 6 0 | |
| Eucharis, per dozen | 4 0– 6 0 | | Tropæolum, 12 bun. | 2 0– 3 0 | |
| Gardenias, 12 blooms | 4 0– 6 0 | | Tuberoses, 12 blms. | 1 0– 1 6 | |
| Hyacinths, Rom., 12 sprays | 1 0– .. | | Tulips, doz. blooms | 1 0– 1 3 | |
| Lapageria, white, 12 blooms | .. 1 0– 3 0 | | Violets, 12 bunches | 0 4– 1 6 | |
| — red, 12 blooms | 1 0– 2 0 | | — Czar, Fr., bunch | 1 0– 1 6 | |
| | | | — Parme, Fr., bun. | 4 0– 5 0 | |

## SEEDS.

LONDON: *Nov.* 25.—On account of the Elections, and for other reasons, the business now doing in farm seeds is, as might be expected, on a very small scale. Clover seeds generally continue steady all round. The total recent shipments of Red seed from European ports to America have now assumed important proportions, one estimate placing them at over 5000 bags. Trefoil, by reason of its remarkable cheapness, has lately met with more attention. There is no change this week in Haricot Beans or Blue Peas. The late advance in Canary seed is well maintained. Hemp seed continues exceedingly cheap. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Nov.* 25.—Good supplies of fruit and vegetables. Trade good. Prices moderate. Quotations:—Pears, 2s. 6d. to 7s., and Apples, 2s. 6d. to 6s. per bushel; Cabbages, 2s. 6d. to 6s. per tally; and Savoys, 4s. to 8s. do.; Brussels Sprouts, 4s. to 4s. 6d. per sieve; bunch greens, 2s. 6d. to 4s. per dozen bunches; bunch Turnips, 2s. 6d. to 3s. 6d. do.; bunch Carrots, 2s. to 2s. 6d. do.; bunch Parsley, 1s. to 1s. 6d. do.; bunch Leeks, 1s. to 2s. do.; Celery, 5s. to 9s. per dozen bundles; Beetroots, 3s. to 4s. do.; Onions, 4s. to 5s. per cwt.; Carrots, in sacks, 30s. to 50s. per ton; Turnips, white, 50s. to 60s. do.; Swede do., 30s. to 32s. 6d. do.; and Mangels, 22s. 6d. to 25s. do.

STRATFORD: *Nov.* 24.—The supplies have been good during the past week, as also the attendance of buyers, consequently a fair trade was done at the following prices:—Red Cabbages, 1s. 6d. to 2s., per dozen; Savoys, 4s. to 7s. 6d. per tally; Cauliflowers, small, 2s. 6d. do.; greens, bunch, 1s. 6d. to 4s. per dozen; Mangels, 17s. to 22s. per ton; Swedes, 20s. to 40s. do.; Turnips, 50s. to 60s. do.; Brussels Sprouts, 3s. 3d. to 4s. per sieve; Apples, best, 2s. 6d. to 5s. 6d. per bushel; do., common, 10s. to 14s. per cwt.; Onions, 70s. to 80s. per ton; Carrots, cattle feeding, 30s. to 32s. per ton; do., household, 40s. to 50s. do.; do., white, 30s. to 35s. do.

## POTATOS.

COLUMBIA (East London): *Nov.* 25.—Magnums, 50s. to 80s.; Regents, 60s. to 70s.; Victorias, 60s. to 65s.; Champions, 50s. to 60s.; Early Roses, 60s. to 70s.; Reading Heros, 60s. to 70s.; and Beauty of Hebron, 70s. to 85s. per ton.

STRATFORD: *Nov.* 24.—Magnums, 56s. to 75s.; Regents, 60s. to 75s.; Roses, 80s.; and Champions, 50s. to 60s. per ton.

*Imports.*—The imports into London last week consisted of 8850 bags from Hamburg, 10 from Harlingen, 200 from Antwerp, 723 from Ghent, 100 from Montreal, 100 from Boulogne, 14 bags 10 sacks from Rotterdam, 47 packages from St. Michaels.

## HAY.

WHITECHAPEL: *Nov.* 24.—Large supplies and very dull trade, in consequence of the wet weather. Quotations:—Clover, prime, 90s. to 105s.; inferior, 70s. to 85s. Hay, prime, 75s. to 96s.; inferior 65s. to 70s. Straw, 28s. to 37s. per load.

*Nov.* 26.—A moderate supply was on sale. The trade was dull, at Tuesday's prices.

CUMBERLAND (Regent's Park): *Nov.* 24.—The weather has influenced a bad trade, with prices lower to effect a clearance. Clover, best, 90s. to 100s.; seconds, 70s. to 90s. Hay, best, 72s. to 85s.; second, 60s. to 70s. Straw, 30s. to 36s. per load.

STRATFORD: *Nov.* 24.—Clover, 80s. to 100s.; hay, 75s. to 85s.; and straw, 30s. to 36s. per load.

## COALS.

The following are the prices current at market during the week:—Ravensworth, 14s. 9d.; Holywell West Hartley, 14s. 6d.; Walls End—Tyne (unscreened), 11s. 3d.; Hetton, 17s. 6d.; Hetton Lyons, 15s. 6d.; Hulam, 15s. 6d.; East Hartlepool, 16s.; South Hartlepool, 15s. 6d.; Tees, 17s. 6d.; Lambton, 17s. Wear, 15s. 6d.; Caradoc, 17s. 6d.

**Government Stock.**—Consols closed on Monday at 100⅞ to 100¾ for delivery, and 100⅛ to 100⅛ for the account. Tuesday's and Wednesday's mean record was 100⅞ to 101 for both transactions; and the same return was made at the close on Thursday.

# THE COLONIAL MANURE.

*Unequalled for Excellence of Quality and Productive Powers.*

| | s. | d. | |
|---|---|---|---|
| Supplied in Tins, | 1 | 0 | each. |
| ,, ,, | 2 | 6 | ,, |
| ,, ,, | 5 | 0 | ,, |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| ,, ½ ,, | 20 | 0 | ,, |
| ,, 1 ,, | 37 | 6 | ,, |

**Special Prices to the Trade on application.**

The COLONIAL MANURE being powerful and lasting in its effects, very little need be used; consequently it will be found more economical than any other Chemical Manure.

The COLONIAL MANURE is to be obtained from all Nurserymen and Seedsmen in the United Kingdom and the Colonies.

*Sole Proprietors and Manufacturers,*

## HAYMAN & BENJAMIN,

3, 4, 5, 6, CAMOMILE STREET,

LONDON, E.C.,

*who only supply the Wholesale Trade and Export Merchants.*

FOR SALE, a Large CAMELLIA, ALBA PLENA, 6 by 6 feet, full of bud. D. WILLIAMS AND SON, Florists, Macclesfield.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may *now* be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

MILLTRACK MUSHROOM SPAWN.—The best and cheapest ever offered. Quality guaranteed. 4s. 6d. per bushel (16 cakes), 6d. per bushel package; 2 cakes as samples, free parcel post, 1s. 3d. Trade supplied very low.
MORLE AND CO., Manufacturers, Child's Hill Farm, N.W.; and 1 and 2, Fenchurch Street, London, E.C.

## GARDEN REQUISITES.

**COCOA-NUT FIBRE REFUSE.**

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—H. G. SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

## GENUINE GARDEN REQUISITES,

**as supplied to the Royal Gardens.**

FRESH COCOA-NUT FIBRE REFUSE, 4-bushel Bags, 1s. each; 30 for 25s.—bags included; 2-ton Truck, free on Rail, 25s. BEST BROWN FIBROUS KENT PEAT, 5s. per Sack; 5 for 22s. 6d.; 10 for 35s.; 20 for 60s. BEST BLACK FIBROUS PEAT, 4s. 6d. per Sack; 5 for 20s.; 10 for 30s. COARSE BEDFORD SAND, 1s. 6d. per Bushel; 14s. per ½ Ton; 25s. per Ton. SPECIALITÉ TOBACCO PAPER, 10d. per lb.; 28 lb., 21s.; cwt., 70s. FINEST TOBACCO CLOTH, 8d. per lb.; 28 lb. for 18s. LEAF-MOULD, 5s. per Sack. PEAT MOULD, 4s. per Sack. YELLOW FIBROUS LOAM, 3s. per Sack. CHARCOAL, 2s. 6d. per Bushel; Sacks, 4d. each. BONES, GUANO, SPHAGNUM, &c. LIST Free. Special Prices to the Trade for Cash.
W. HERBERT & CO., Hop Exchange Warehouses, Southwark Street, S.E. (near London Bridge).

PEAT.—Superior Black or Brown Fibrous PEAT, for Rhododendrons, Azaleas, &c., as supplied to Messrs. J. Waterer and other noted growers. Six tons, loaded on trucks at Camberley Station, S.W.R., £4 4s. Mr. W. TARRY, "Golden Farmer," Farnborough Station.

## GARDEN REQUISITES.

TWO PRIZE MEDALS.

**Quality, THE BEST in the Market.** (All sacks included.)
PEAT, best brown fibrous .. 4s. 6d. per sack; 5 sacks for 20s.
PEAT, best black fibrous .. 3s. 6d. ,, 5 sacks for 15s.
PEAT, extra selected Orchid 5s. 6d. ,,
LOAM, best yellow fibrous ..
PREPARED COMPOST, best } 1s. per bush., sacks included).
LEAF MOULD, best only ..
PEAT MOULD, ,, ..
SILVER SAND, coarse, 1s. 3d. per bush., 12s. half ton, 22s. ton.
RAFFIA FIBRE, best only .. .. .. 1s. per lb.
TOBACCO CLOTH, finest imported .. 8d. lb., 28 lb. 18s.
TOBACCO PAPER ,, (Spécialité) 8d. lb., 28 lb. 18s.
MUSHROOM SPAWN, finest Milltrack .. 5s. per bushel.
SPHAGNUM MOSS, all selected, 2s. per bush., 6s. per sack.
**COCOA-NUT FIBRE REFUSE** (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

## CHUBB, ROUND & CO.,

**WEST FERRY ROAD, MILWALL, LONDON, E.**

LEMON OIL INSECTICIDE, Improved.—Soluble in water. The cheapest, safest, and most effectual Insecticide extant. Harmless to flowers and foliage. Instant death to Mealy Bug, Scale, Thrips, Red Spider, Green and Black Fly, American Bright, Mildew, Ants, &c. As a Winter Dressing unequalled. See circulars, with testimonials from many of the leading gardeners on its behalf. Sold by most of the leading Nurserymen, Seedsmen, and Garden Manure Manufacturers, in tins—per pint, 1s. 6d.; quart, 2s. 9d.; half gallon, 5s.; gallon, 9s. Directions for use with each tin.
Wholesale, J. W. COOKE, Market Place Winsford, Cheshire; also Messrs. OSMAN AND CO., 15, Windsor Street, Bishopgate, London, E.C.; and CORRY, SOPER, FOWLER AND CO., 18, Finsbury Street, E.C.

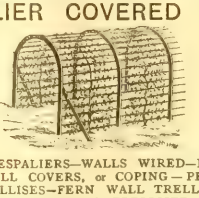
COCOA-NUT FIBRE REFUSE.—Best and fresh only, 1s. per bag; 15 bags, 12s.; 30 bags, 22s., sent to all parts; trucks, 23s., free to Rail. PEAT and LOAM.—A. FOULON, 34, St. Mary Axe, London, E.C.

**12-oz. Sample Packets, free by post, 12 Stamps.**
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., 4s. 6d. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 5s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag. SILVER SAND, Coarse or Fine, 5s. per Truck of 4 Tons.
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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

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GARDEN ESPALIERS—WALLS WIRED—IRON and GLASS WALL COVERS, or COPING—PEACH and VINE TRELLISES—FERN WALL TRELLIS—WIRE TRELLISES for CREEPERS—TRELLISED ARCADES—ROSERIES—SCREENS and DIVISION FENCES—RABBIT-PROOF FENCING—STRAINED WIRE FENCING, &c.

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### "CHAMPION PRIZE" GALVANISED WIRE NETTING.



**REDUCED PRICES—per Roll of 50 yards.**

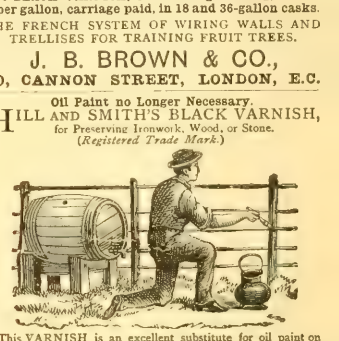
| | QUALITY. | Gauge | 12 in. | 18 in. | 24 in. | 30 in. | 36 in. | 48 in. | 72 in. |
|---|---|---|---|---|---|---|---|---|---|
| | | | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| 2-in. mesh Poultry. | Light | 19 | 3 0 | 4 6 | 5 0 | 7 6 | 9 0 | 12 0 | 18 0 |
| | Medium | 18 | 3 6 | 5 3 | 7 0 | 8 9 | 10 6 | 14 0 | 21 0 |
| 1½-in. mesh Rabbit. | Light | 19 | 4 0 | 6 0 | 8 0 | 10 0 | 12 0 | 16 0 | 24 0 |
| | Medium | 18 | 4 6 | 6 9 | 9 0 | 11 3 | 13 6 | 18 0 | 27 0 |
| 1-in. mesh Small Rabbit. | Light | 19 | 4 6 | 6 9 | 9 0 | 11 3 | 13 6 | 18 0 | 27 0 |
| | Medium | 18 | 5 3 | 7 10 | 10 6 | 12 1 | 15 8 | 21 0 | 31 4 |

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THE FRENCH SYSTEM OF WIRING WALLS AND TRELLISES FOR TRAINING FRUIT TREES.

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Sold in Casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 2s. 8d. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June 24, 1876.*—Sirs, I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

*CAUTION.*—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

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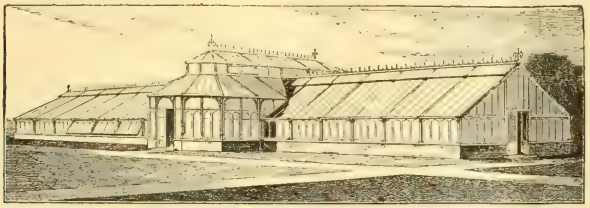
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| 18×12 | 22×16 |
| 20×12 | 24×16 |
| 16×14 | 20×18 |
| 18×14 | 22×18 |
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_____ 1885.

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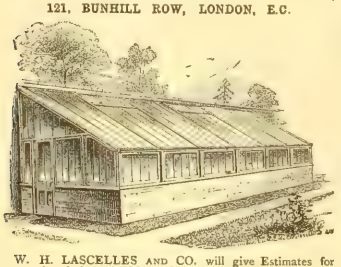
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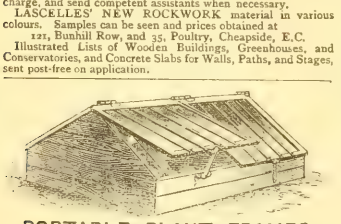
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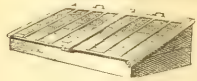
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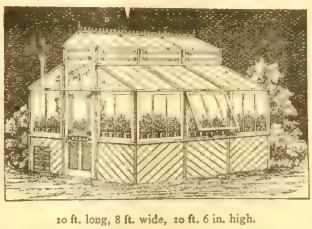
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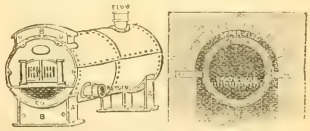
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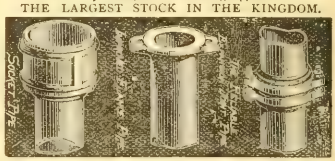
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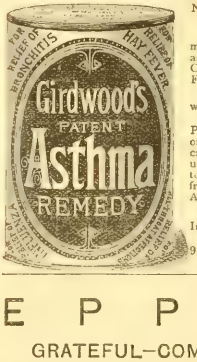
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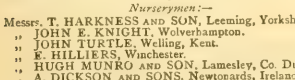
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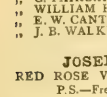
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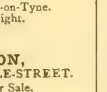
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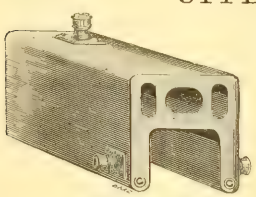
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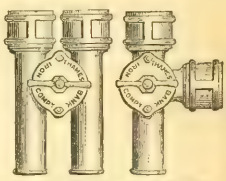
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THE

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## GARDENERS' CHRONICLE OFFICE
**TELEGRAMS.**

*NOTICE to Correspondents, Advertisers, Subscribers, and Others. The Registered Address for Foreign and Inland Telegrams is "GARDCHRON, London."*

*** OUR ALMANAC FOR 1886.—*Secretaries of Provincial and Metropolitan Horticultural Societies are invited to send us, as soon as possible, the Dates of their Meetings and Exhibitions during the ensuing year, so as to ensure their insertion.*

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*THE GARDENERS' CHRONICLE*, Volume XXIII., JANUARY to JUNE, 1885.
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NOTICE !—COMMITTEE MEETINGS. Fruit and Floral, at 11 A.M., in the Conservatory : SCIENTIFIC, at 2 P.M., in the Lindley Library, on TUESDAY NEXT, December 8.
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On view morning of Sale, and Catalogues had.

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3000 LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on TUESDAY NEXT, December 8, 3000 unusually fine Bulbs of LILIUM AURATUM, just received from Japan in splendid condition.

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3000 LILIUM AURATUM from Japan, unusually fine bulbs; CAMELLIAS, AZALEAS, and FICUS, from Belgium; FERNS and PALMS, 3000 Standard and Dwarf ROSES of the best sorts, from English Nurseries; LILY of the VALLEY, a choice assortment of hardy English-grown LILIES and BULBS, NARCISSUS, SPIRÆAS, CHRISTMAS ROSES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, December 8, at half-past 12 o'Clock precisely.

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(Five Minutes walk from the Station).
CLEARANCE SALE OF GREENHOUSE PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Park Nursery, Blackstock Road, Finsbury Park, on THURSDAY NEXT, December 10, at 12 o'Clock precisely, without reserve, by order of Mr. J. R. Bunn, the erections of four span-roof Greenhouses, and materials for another; 1000 feet hot-water Piping, 3 and 4 inch; two Saddle Boilers; 70 Loose Lights; also the whole of the Greenhouse Plants, including 10,000 Scarlet and other Geraniums, 150 Ficus elastica, Draccenas, Ferns, 1000 old Crimson Cloves, &c. On view the day prior to sale.

Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

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ONCIDIUM SARCODES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 11, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Carder & Co., a fine importation of ODONTOGLOSSUM CRISPUM (Alexandræ), in variety; and ESTABLISHED ORCHIDS, in variety; also (another property) an importation of ONCIDIUM SARCODES just received in splendid condition from Brazil.

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MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS in FLOWER will take place on TUESDAY, December 22 (just before the Christmas holidays), for which they will be glad to receive notice of entries as early as possible.

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MR. J. C. TOWNER will SELL by PUBLIC AUCTION, at the Gildridge Hotel, on MONDAY, December 14, at 3 o'Clock P.M. precisely, a

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5000 splendid Bulbs of LILIUM AURATUM, from Japan; 8000 TIGRIDIAS and GLADIOLI, from New Jersey; Dwarf and Standard ROSES, from France; 3 50 crowns and clumps of LILY of the VALLEY, 1750 HYACINTHUS CANDICANS, DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 7, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Wednesday Next.**—(Sale No. 7037.)
ROSES, FRUIT TREES, BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 9, at half-past 12 o'Clock precisely, 1300 first-class Standard and Dwarf ROSES, from celebrated growers; FRUIT TREES, SHRUBS, CONIFERS, Stove, and Greenhouse and Bedding PLANTS of sorts; DAFFODILS, and several hundred lots of first-class DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7038.)
ONCIDIUM MARSHALLIANUM.
SOPHRONITES GRANDIFLORA and varieties.
ODONTOGLOSSUM ALEXANDRÆ.

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**Special Sale of Orchids in Flower.**

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS IN FLOWER will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 17, and he will be glad if Gentlemen desirous of entering Plants for this Sale, will please send particulars of same not later than THURSDAY NEXT.

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MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared.
115, Listria Park, Stamford Hill, N.

WILLIAM CLAPHAM,
*Garden Architect and Natural Rock Builder,*
SHAW HEATH, STOCKPORT.
Ferneries, Grottos, and Rockwork, in common with Landscape Gardening, to suit any locality.
ALL WORK PERSONALLY CARRIED OUT.
Silver Medal awarded Preston Guild, 1882.

**Fruit Trees, Grape Vines, and Roses.**

HUGH LOW AND CO. offer, of fine quality and best varieties, Trained and Untrained APPLES, APRICOTS, CHERRIES, DAMSONS, NECTARINES, PEACHES, PEARS, PLUMS; ROSES, a fine collection, Dwarf on Manetti; ROSES, Half standards and Standards; ROSE GLOIRE DE DIJON, open ground, very strong, in pots; also ROSE NIPHETOS, strong, in pots. VINES, BLACK ALICANTE, BLACK HAMBURGH, GROS COLMAR, and other fine sorts; Planting and Forcing Canes. Low prices on application.
Clapton Nursery, London, E.

JOSEPH SPOONER, NURSERYMAN, &c., Goldworth, Woking, offers the following:—Aucubas, bushy, 2 to 2½ feet, 15s. per dozen; Variegated Hollies, bushy, 2 feet, 20s. per dozen; Green Hollies, 1 to 2 feet, 40s. per 100; 2 to 3 feet, 80s. per 100. Thuia Lobbi, 2½ to 3½ feet, 6d. each; Portugal Laurels, bushy, 1¾ to 2 feet, 8s. per dozen; Chinese Arbor-vitæ, 1 to 1¾ foot, 22s. per 100; Ovalifolia Privet, 4 to 5 feet, 10s. per 100; Common Privet, 4 to 5 feet, 10s. per dozen; Yews, from 2 to 9 feet, good and bushy, price on application. All these are good, and well-rooted, and good Quick.

CASH PRICES. — SEAKALE, very fine Crowns for Forcing. GRAPE VINES, FIGS, PEACHES, &c., in Pots, well set for Fruit. Excellent Dwarf-trained PEACHES, NECTARINES, and APRICOTS, well ripened and fibrous-rooted. Nett Price LIST on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

DOUBLE TUBEROSES, extra fine, 2s. per dozen; LILIUM AURATUM, splendid Roots, 4s. and 6s. per dozen; LILY of the VALLEY, Germans Crowns, 5s. 6d. per 100; SPIRÆA JAPONICA, 1s. per dozen: AZALEAS and CAMELLIAS, from 18s. per dozen. Large quantities at cheaper rates. Trade price on application.
MORLE AND CO., 1 and 2, Fenchurch Street, E.C., and Child's Hill Nursery, Finchley Road, N.W.

CHERRY TREES.—Wanted, an offer for One to Ten Thousand Plants, 3 to 4 years old. Apply, GUSTAV ROBOHM, Smithfield Market, Manchester.

SEAKALE for Forcing.—Excellent large Crowns, 50s. per 1000; under 500, 10s. per 100. A quantity of strong 4-year-old Forcing ASPARAGUS, price on application. Orders to be accompanied by cheques or P.O.O.
ALFRED ATWOOD, Grower, 51, Shillington Street, Battersea, S.W.

NARCISSUS POETICUS BULBS, 12s. per bushel (over 1300 to the bushel). Splendid stuff. Cash. PHIPPEN, Reading.

IVIES.—About 1800 for Sale, principally Irish—few dozens Marbled, Gold and Silver, &c., very strong, 3 to 5 feet; about 400 established in pots, remainder in ground, 40s. per 100.—A. LARKIN, 2, Hastings Road, Ealing Dean.

FOR SALE.—100,000 BLACK CURRANT BUSHES, 2 and 3 years old; best sorts, and wonderfully strong growth.—Apply to J. SMITH AND SON, Market Gardens, Sipson, near West Drayton.

AZALEA MOLLIS—AZALEA MOLLIS.—A few thousands are still disposable; very fine plants, full of buds, 50s. per 100. HYDRANGEA PANICULATA GRANDIFLORA, 30s. per 100. At the Ornamental Plant Nurseries.—JULES DE COCK, Ghent, Belgium.

# THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

*THE COMMITTEE beg to GIVE NOTICE that they have secured permanent Offices at*

**No. 50, PARLIAMENT STREET, WESTMINSTER, S.W.,**

*and it is respectfully requested that all communications may be addressed there.*

*By Order,*
EDWD. R. CUTLER, Sec.

*November 3, 1885.*

TELEGRAPHIC ADDRESS—"GILBERT, STAMFORD."
The gem of the season—Gilbert's Late White BROCCOLI, Victoria—in open competition beat all the Models, all the Giants, and all the Queens, besides seven dishes of Cauliflower. Awarded a First-class Certificate at the Royal Horticultural Society. This Broccoli is without doubt pre-eminently the finest in commerce. Not thimblesful, but in ½ oz. packets, 2s. 6d. each.
A. F. BARRON MELON, Green-flesh, First-class Certificate, and true TELEGRAPH CUCUMBERS, 1 dozen seeds, per packet, 1s. each.
CHOU DE BURGHLEY, a pure stock, and Universal SAVOY, in ½ oz. packets, 1s. each.
Gilbert's selected ONION SEED, saved from all the best shaped and finest Bulbs, Magnum Bonum, White Spanish, and Bedfordshire Champion, 9d. per packet.
PRIMROSE SEED, crossed with Harbinger, from a very fine collection. 1s. 6d. per packet.
Border CARNATIONS, all colours, a very hardy and good stock, 5d. per packet.
Apply to R. GILBERT, High Park Gardens, Stamford.

**Home-grown Vegetable and Field Seeds.**

H. AND F. SHARPE will be pleased to forward on application their Wholesale Special Priced LIST of Home-grown VEGETABLE and FIELD SEEDS of 1885 growth, all raised from the best selected stocks, and harvested in splendid condition. The Prices will be found very advantageous. Seed Growing Establishment, Wisbech.

FOREST TREES
To be sold a great bargain to clear the ground,
500 CHESTNUT TREES, 10 to 12 feet.
500 LIMES, 6 to 12 feet.
500 WALNUT TREES, 6 to 14 feet.
A few thousand strong MANETTI.
No reasonable offer will be refused.
Apply to Mr. COOPER, Calcot Gardens, Reading.

TRAINED PEACH TREES.
Some of the best sorts, well trained and strong.
Apply to Mr. COOPER, Calcot Gardens, Reading.

PYRAMID APPLE TREES.—Fine grown Trees of the best sorts, including—Blenheim Orange, Ceilins, Cox's Orange Pippin, Golden Reinette, King of the Pippins, Lord Suffield, Keswick Codlin, Warner's King, Wellington, &c.
Apply to Mr. COOPER, Calcot Gardens, Reading.

PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract:—
From the *Gardeners' Chronicle and Agricultural Gazette*, London:—"MONSTER BROCCOLI.—A few days since, Mr. C. Kessell, of the Coombe, Penzance, who has been a Broccoli grower for upwards of half a century, and was one of the first to get the Early Broccoli of Cornwall into the London and Northern Markets, cut two monster Broccoli, which together weighed 50 lb. They were the sort known as Pontey's Late White Wilcove. The huge scales at the smelting-house had to be called into requisition to ascertain the weight of the plants."
Retail Price, 2s. 6d. per ounce. Special quotations to the Trade. Apply to
E. WILSON SERPELL, 21, Cornwall Street, Plymouth.

CHRISTMAS TREES, ROSES, &c.—SPRUCE FIR, fine, bushy, clean grown, 1¾ to 3½ feet, several thousands, from £5 to £9 per 1000, 12s. to 20s. per 100. ROSES, 100 A. K. Williams, 30s.; 100 choice asserted, 30s.; one dozen A. K. White Baroness, 6s.; one dozen assorted Teas, 6s.; one dozen Lamarque, 5s.; one dozen Celine Forestier, 5s. HOLLIES, bushy, 3 to 4 feet, 18s. per dozen. BOX, Tree, 500, bushy, 2 to 3 feet, 25s. 6d. per 100; 500 do., do., do, 3½ to 4 feet, 35s. per 100; do. do., fine single specimens, 3½ to 5 feet, THUIOPSIS DOLOBRATA, fine specimens, 2 to 4 feet, 24s. to 36s. per dozen. PRIVET, strong, 18s. per 1000; do. ovalifolium, 2 to 4 feet, 35s. per 1000. SCOTCH FIR, bushy, extra transplanted, 3½ to 6 feet, from 12s. per 100, Austrian PINES. Also other FOREST TREES. See LIST.
W. GROVE, Nurseryman, Hereford.

PONSFORD AND SON offer at very low prices:—
LAURELS—in four vars.
EUONYMUS, &c.
FLOWERING SHRUBS.
FRUIT TREES—Maidens to Bearing Trees.
MULBERRIES.
CONIFERÆ—many kinds.
Brixton, Surrey, and Bromley, Kent,
Telegraphic Address:—"MULBERRIES, LONDON."

ABIES DOUGLASII GLAUCA.—Undoubtedly one of the finest introductions of late years, being hardier, more compact, and not apt to lose its leader like the common Douglasii. 2 to 3 feet, 12s.; 3 to 4 feet, 18s. per dozen. A LIST of other hardy Pines free on application.
MORRISON BROTHERS, Aberdeen.

# FRUIT. FRUIT. FRUIT.

*SEE NEW CATALOGUE.*

APPLES, PEARS, PLUMS, CHERRIES.—All the finest varieties.—Pyramids, 9*s.* and 12*s.* per dozen; Standards, 12*s.* per dozen; Dwarf-trained, 15*s.* and 18*s.* per dozen.

CURRANTS.—Black, Red, White, 12*s.* per 100, 2*s.* and 2*s.* 6*d.* per dozen.

RASPBERRIES, in variety, 12*s.* per 100; Northumberland Fillbasket, 6*s.* per 100.

GOOSEBERRIES, 15*s.* and 20*s.* per 100, 2*s.* 6*d.* and 3*s.* per dozen.

STRAWBERRIES.—All the most reliable croppers. Strong runners, 2*s.* 6*d.* per 100; in 2½-inch pots, 10*s.* per 100; in 5-inch pots, for forcing, 25*s.* per 100; Laxton's New King of Earlies and The Captain, 2*s.* per dozen.

## ROSES. ROSES.

*See our New Catalogue.*

The finest H.P. varieties, 6*s.* per dozen, 40*s.* per 100.
Tea-scented and Noisettes, 15*s.* per dozen; 100*s.* per 100.
Beautiful Mosses, 6*s.* per dozen.
Climbing varieties, for Rockeries, Arbours, &c., 6*s.* p. doz.
The above are all our own growing, and will grow and flower much better than Roses grown in a good climate and rich soil.

## FOREST TREES,

*ORNAMENTAL and DECIDUOUS SHRUBS,*
**RHODODENDRONS and AMERICAN PLANTS.**
Fine quality, low prices. See New Catalogue.

**OUTDOOR FLOWERS in SPRING.**

DAISIES, Red, White, Rose, &c.; POLYANTHUS, Single PRIMROSES, in variety of colours; WALLFLOWERS, CANTERBURY BELLS, 9*d.* per dozen, 4*s.* and 5*s.* per 100. PANSIES and VIOLAS (colours separate), ARABIS, ALYSSUM, SILENE COMPACTA, AUBRIETIAS, MYOSOTIS, 1*s.* 6*d.* per dozen, 8*s.* per 100; or, 500 assorted Spring-flowering Plants for 17*s.* 6*d.*, 1000 for 31*s.* 6*d.*

HEPATICAS, Blue and Red; Double PRIMROSES, Sulphur, 3*s.* 6*d.* per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

**BEAUTIFUL FLOWERS for GARDENS.**

POTENTILLAS, PYRETHRUMS, DELPHINIUMS.—Lovely hardy flowers for cutting or garden bloom, named, 5*s.* per dozen.

SPLENDID PHLOXES, PENTSTEMONS, PINKS, PANSIES, in the finest varieties, 3*s.* 6*d.* per dozen.

HARDY HERBACEOUS PLANTS.—The most showy sorts, 2*s.* per dozen, 12*s.* per 100.

CARNATIONS and PICOTEES.—Good exhibition sorts, 6*s.* per dozen plants; fine Clove and Border Self varieties, 4*s.* per dozen—all from layers.

LILIES.—Candidum, Orange, and Tiger Lilies, 3*s.* per doz.

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CINERARIAS and HERBACEOUS CALCEOLARIAS, 12*s.* 6*d.* per dozen, from stores, our own fine strains.

BOUVARDIAS, TREE CARNATIONS, DEUTZIA GRACILIS.—In pots for early blooming, 6*s.*, 9*s.*, and 12*s.* per dozen.

SPIRÆA JAPONICA, DIELYTRA SPECTABILIS.—Fine clumps, 5*s.* per dozen.

AZALEAS.—Ghent, mollis, pontica, or indica, all with buds, for forcing, 18*s.*, 24*s.*, and 30*s.* per dozen.

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SEE our NEW CATALOGUE for this Autumn for Moderate Prices of all BULBS, PLANTS, or TREES you want for In or Outdoor Gardening; also for CUT FLOWERS, WREATHS, CROSSES, BOUQUETS, &c. Safe and fresh by post or rail.

## WM. CLIBRAN & SON,

OLDFIELD NURSERY, ALTRINCHAM;
**12, MARKET STREET, MANCHESTER.**

*SPECIAL CULTURE OF*

## FRUIT TREES and ROSES.

A large and select stock is now offered for Sale.
*The Illustrated and Descriptive CATALOGUE of FRUITS post-free.*
The Descriptive CATALOGUE of ROSES post-free.

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Splendid Seeds and Bulbs at low prices
Catalogues free by Inland Post

LILIUM AURATUM (Large Home-grown).—We are now taking up in fine condition the Bulbs of Lilium auratum, which produced the magnificent flowers which we exhibited at the Great Conservatory, South Kensington, all through August and September, and which obtained universal admiration. Prices, 15*s.*, 24*s.*, and 36*s.* per dozen; very large bulbs, 5*s.* each; selected best forms, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* each.
Our importations of Indian LILIES, POLYPHYLLUM, WALLICHIANUM, NEILGHERRENSE, are now on their way. For prices, see our List No. 77, pages 15, 19.
NEW PLANT AND BULB COMPANY, Colchester.

GREAT SALE of NURSERY STOCK.

Part of our Kingston Hill Ground having to be cleared by Christmas, we intend selling at the

KINGSTON HILL NURSERY,

All kinds of

DECIDUOUS AND EVERGREEN SHRUBS, FOREST TREES,

ROSES AND FRUIT TREES,

AT GREATLY REDUCED PRICES.

The Trade and Private Buyers will find this an excellent opportunity for Stocking.

T. JACKSON AND SON,
*NURSERIES, KINGSTON-ON-THAMES.*

# NEW APPLES.

## SEPTEMBER BEAUTY.

*First-class Certificates from the Royal Horticultural Society and at the Crystal Palace,* 1885.

This is one of the handsomest, richest-flavoured, and most digestible mid-season dessert Apples, having the full Ribston flavour, but precedes that delicious Apple, and is hardier and more fertile.

**5*s.* and 7*s.* 6*d.* each.**

## THE DARTMOUTH CRAB.

The largest, best, and most distinct of all the Crabs, and one of the hand-somest fruits in cultivation, being of a beautiful crimson-scarlet colour, coated with a rich bloom, and carried on a long stalk. The fruit resembles an enlarged Victoria Plum, and the tree laden with fruit is most attractive.
This Crab, which ripens early, is not acid, but if eaten at the ripening point is equal to a first-rate summer Apple.

**3*s.* 6*d.* and 5*s.* each.**

*Further particulars on application to*

**THOMAS LAXTON,**
SEED AND NOVELTY GROWER, BEDFORD.

## SPECIAL OFFER
**OF WELL-GROWN STOCK.**

6,000 FRUIT TREES, mostly Pyramids and Standards, consisting of best sorts, APPLES, PEARS, PLUMS, and CHERRIES.
15,000 GOOSEBERRIES, mostly Warrington; also some Red and Black CURRANTS.
60,000 ASPARAGUS and SEAKALE; the forcing Seakale is fine.
10,000 LAURELS, including rotundiflora and caucasicum.
20,000 IVIES, mostly small leaved.
5,000 TREE BOX.
5,000 POPLARS, LIMES, THORNS, CHESTNUTS.

*And for Special Quotations, &c., apply to*
HARRISON & SONS,
NURSERYMEN and SEED GROWERS,
**LEICESTER.**

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I beg to offer,
*Packing Free and Carriage Paid throughout Great Britain*

## CONIFERÆ,

GRAFTS and CUTTINGS from AUTUMN, 1884,
**14*s.* per 100, £5 per 1000,**
in the following sorts:—

CHAMÆCYPARIS sphaeroidea aurea
CUPRESSUS Lawsoniana
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,, ,, argenteo variegata
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,, ,, lutea
,, ,, minima glauca
,, ,, Smithi
,, ,, stricta glauca
RETINOSPORA ericoides
,, leptoclada
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,, plumosa
,, ,, argenteo var.
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**20 Acres of grand plants in best varieties.**

BUSHES, H.P., 8*s.* per dozen, 60*s.* per 100. } *Packing and Carriage FREE* for Cash with Order.
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CLEMATIS (80,000), 12*s.* to 24*s.* per dozen.
ROSES, in Pots (80,000), 15*s.* to 36*s.* per dozen.
FRUIT TREES (74 Acres).
VINES (60co), 3*s.* 6*d.* to 10*s.* 6*d.*
ORCHARD HOUSE TREES, "Fruiting," in Pots.
STRAWBERRIES, 4*s.* per 100; Forcing, 15*s.* to 25*s.* per 100.
ASPARAGUS, 2*s.* 6*d.* per 100; Forcing, 12*s.* 6*d.* per 100.
SEAKALE, strong Forcing, 16*s.* per 100.
EVERGREENS, CONIFERS ORNAMENTAL TREES (91 Acres).
FLOWERING SHRUBS, 8*s.* per dozen.
FOREST TREES, HEDGE PLANTS UNDERWOOD, &c.

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**Of Finest Quality.**

*Descriptive LISTS of above and SEEDS free.*

## RICHARD SMITH & CO.,
**WORCESTER.**

Every Garden and every Gardener suited with a

## SUPERB COLLECTION of ROSES,

**at Prices ranging from 2*s.* 6*d.* to £20.**
Carefully Packed, and sent Post-free or Carriage Paid to any Railway Station or Port in the British Isles.
FOR FULL PARTICULARS APPLY TO
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Strong and Well-grown.
**Priced List of Reduced Prices Free on application**

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CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*
None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached
WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.




An immense stock of healthy Trees of all kinds, true to name.

## CORDON FRUIT TREES

a Specialty. Send for Pamphlet on above.

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**ROSES, RHODODENDRONS, &c.**

*CATALOGUES post-free.*

## J. CHEAL & SONS
Crawley, Sussex.

Seed Potatos.

H. AND F. SHARPE beg to announce that their Wholesale Priced LIST of SEED POTATOS is now ready, and can be forwarded at once on application. It comprises all the best varieties in cultivation, including several novelties of sterling merit. The samples are very fine this season and entirely free from disease, and the prices will be found very reasonable

Seed Growing Establishment, Wisbech.

S. BIDE begs to call special attention to his extensive stock of—
FRUIT TREES (Dwarf-trained) — Apricots, Nectarines, Peaches, Apples, Pears, Cherries, &c.
FOREST TREES—Larch and Scotch Fir, Ash, Hazel, &c.
ROSES—Standard and Dwarf.
ASPARAGUS—For Planting; for Forcing.
The whole being second to none in the Trade. CATALOGUES of General Nursery Stock, with Prices, &c., on application to S. BIDE, Alma Nursery, Farnham, Surrey.

SPECIAL OFFER.
Fine samples of
MYATT'S PROLIFIC EARLY ASHLEAF KIDNEY POTATOS, £5 5s. per ton. Where three or more tons are ordered, £5 per ton.
SUTTON'S EARLY ASHLEAF KIDNEY POTATOS, £6 6s. per ton. Nett cash. Free on rail here.
W. W. JOHNSON AND SON, Seed Potato Growers and Merchants, Boston, Lincolnshire.

PALMS.—A few hundreds of splendidly-grown healthy Seaforthia elegans, Latania borbonica, Corypha australis, Pteris cretica reclinata, Areca lutescens, and Euterpe edulis, 12 inches high, 4s. per dozen, 25s. per 100; same sorts, 20 inches high, 12s. per dozen, less quantity 1s. 3d. each.
FERNS.—Strong, healthy, and handsome Lomaria Gibba, Adiantum cuneatum (Maidenhair), Pteris tremula, Pteris serrulata, Pteris serrulata cristata, Pteris cretica albo lineata, Pteris argyrea, out of small pots, 20s. per 100, 3s. per dozen.
GARDENIA INTERMEDIA (true), 6s. per dozen.
Packages and parcels post-free.
GARDENER, Holly Lodge, Stamford Hill, London, N.

PINUS ARISTATA.—"A correspondent who has tried the nursery trade in vain" for the above Pine, may surely find it in many nurseries, but nowhere so cheap and so good as with
MORRISON BROTHERS, Aberdeen, who can give fine healthy plants, 6 to 9 inches, at 1s.; 9 to 12 inches, at 1s. 6d.; and 3 to 4 feet, at 7s. 6d each.
A LIST of all hardy Pines sent free on application.

SPECIAL CHEAP OFFER. — PINES, Austrian, from 2 to 6 feet; LARCH, from 2 to 4 feet; FIR, Scotch, 12 to 24 inches; ELM, 3 to 4 feet, 4 to 5 feet; ASH, Common, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; BIRCH, 1½ to 2 feet, 2 to 3 feet, 7 to 8 feet, 8 to 10 feet; CHESTNUT, 1 to 2 feet; HORNBEAM, 2 to 3 feet, 3 to 4 feet, 7 to 8 feet, 8 to 9 feet; MAPLE, 4 to 10 feet; OAK, English, from 1 to 10 feet; POPLARS, Lombardy, 7 to 8 feet, 8 to 10 feet, 10 to 12 feet; POPLARS, American, 7 to 8 feet, 10 to 12 feet; PRIVET, Evergreen, 2 to 3 feet, 3 to 4 feet, good; QUICK, Oval-leaf, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; THORN, 4, 5, and 6-yr., fine; SYCAMORES, 3 to 4 feet, 4 to 5 feet, 7 to 8 feet, 8 to 9 feet; AUCUBAS, 2 to 3 feet; BERBERIS AQUIFOLIA, BOX, CUPRESSUS, various; ELDERS, Gold; CURRANTS, flowering; HOLLIES, in great variety; IVIES, in sorts; JUNIPERS, LAURUSTINUS, LAURELS, assorted; RHODODENDRONS, several hundred thousand of all sorts and sizes—beautiful stuff; RETINOSPORAS, YEWS, Common and Irish. For Price LIST, &c., apply to
ISAAC MATTHEWS AND SON, The Nurseries, Melton, Stoke-on-Trent.

BEACHEY'S SWEET VIOLETS.—Finest collection in England, specially prepared for Autumn and Winter Blooming. Comte Brazza's New Double White Neapolitan, 6s. per dozen plants, 40s. per 100; De Parme, finest Double Lilac; New York, beautiful Double Violet with red eye; Belle de Chatenay, Double Red Russian, Marie Louise, Queen, Tree, all finest Doubles, 3s. 6d. per dozen plants, 7s. 6d. per dozen clumps.
Descriptive LIST of thirty varieties of the best and sweetest DOUBLE and SINGLE VIOLETS, with full directions for Cultivation, also ROSES, CARNATIONS, and PRIMROSES, 2½d. free.
Mr. R. W. BEACHEY, Fluder, Kingskerswell, Devonshire.

FRANCIS R. KINGHORN begs to offer, in splendid stuff and at low prices, the following:—PLANES, 11 to 12 feet, straight stems and good heads; Caucasian and Round-leaf LAURELS, 2 to 4 feet, bushy; Oval-leaf PRIVET, 4 to 5 feet, bushy; Irish IVY, in pots, 5 to 6 feet, many shoots; SWEET BRIER, in pots, 3 to 4 feet; Double GORSE, in pots, 2 feet, bushy; BERBERIS DARWINII, in pots, 2 to 3 feet, bushy; LILACS, 5 to 6 feet; RIBES, 4 feet.
Sheen Nurseries, Richmond, Surrey.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may now be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

PURPLE CATALPA.
Now offered for the first time.
RAISER'S DESCRIPTION.—The purple-leaved Catalpa is constant in this:—The tree grows constantly from early Spring to October frosts. There are four pairs of the young leaves (terminal), are always an intensely metallic purple. The older leaves are from black-purple to deep green. The original tree is about 18 feet high; every branch has a terminal crown of dark purple leaves all the time from April to October. The mature leaves are 10 to 18 inches diameter either way. Small Plants, 1 to 2 feet high, 10s. 6d.; larger, 2 to 3 feet, £1 1s.
H. WATERER, Importer and Exporter of Plants and Bulbs, 56 N., 38th Street, Philadelphia, U.S.A.

FRUIT TREES.—Horizontal-trained PEARS—Williams' Bon Chrétien, Marie Louise, Marie Louise d'Uccle, Bergamotte d'Esperen, Louise Bonne, &c.; fine, with four to five tiers. Also Standard and Pyramid PEARS, Standard PLUMS and DAMSONS, Pyramid APPLES and PLUMS, Dwarf-trained PEARS, PLUMS, CHERRIES, &c. The above can be supplied in large quantities—fine, well-grown trees.
H. LANE AND SON, The Nurseries, Berkamsted, Herts.

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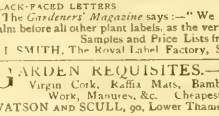
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This, the perfection of Frame Cucumbers, is a cross between Telegraph and Tender and True; in form it has a resemblance to Telegragh, but is of a darker green and much longer—fruit 30 inches in length having been cut from it. It is crisp and juicy, and in flavour it is superior to Tender and True, but its chief recommendation is its marvellous productiveness, in which it excels everything that has come under our notice, as many as 300 and 400 fruit having been cut from twelve plants, in a 3-light pit, 3 quarter span. For succession it is unequalled bearing are abundantly at Christmas as Midsummer—and in addition to its handsome form and lovely colour, it is a variety that seldom produces seed, not one in a hundred containing a trace.

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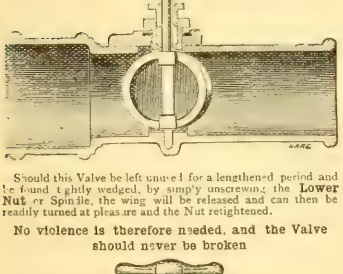
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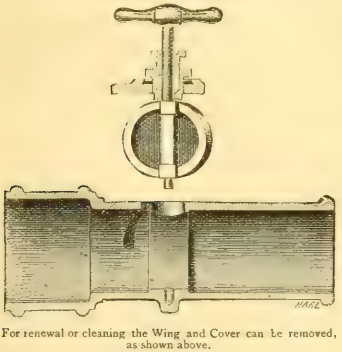
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,, SCHWEDLERI, 12 to 14, and 14 to 16 feet
,, WORLEYII, Standards, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, 9 to 12, and 12 to 14 feet.
BIRCH, Silver, 12 to 14 feet.
,, Purple, 14 feet.
CHESTNUT, Horse, 14 to 16 feet.
,, Horse, Scarlet, 12 to 14 feet.
,, Double, 10 to 12 feet
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 10 to 12 feet, 12 to 14 feet, and 14 to 16 feet.
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PLANES, 14 feet and upwards.
POPLAR CANADENSIS NOVA, 12 to 15 feet.
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,, Purple, 15 to 16 feet.
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BEECH, Weeping, Pyramids and Standards, 10 to 12 feet.
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BIRCH, Young's Weeping, Pyramids, 10 to 12 feet.
,, Young's Weeping, Standards, 14 feet.
ELMS, Weeping, Standards, 10 feet stems.
HAZEL, Weeping, Standards, 8 to 10 feet.
LARCH, Weeping, 6 to 10 feet.
POPLAR, Weeping, Standards.
SOPHORA JAPONICA PENDULA, Standards, 8 to 9 feet.

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THE

# Gardeners' Chronicle.

*SATURDAY, DECEMBER 5, 1885.*


## CLANDON PARK.

AN outing even in November is sometimes necessary to country-bred folk whose occupations call them to town occasionally for longer residence than they desire. Much to my satisfaction the new railway from Leatherhead to Guildford carried me through some Surrey villages known of old and now very gladly re-visited. Having spent some hours at East Horsley, till the sun went down—for there was a sun that day though not a glimpse to pierce through the mist of the day before, or the day after—I arrived at Guildford. The next morning I had two great gardens to visit. Wet or dry I meant to see Clandon Park that day, and to cross the hill and call at Albury.

Strange to run by rail through little woods and copses well known in former days, and to see the smart cock pheasants not so much as skulking in the brushwood at the novelty of the train. Strange to alight at Clandon at a new red station outside the Earl of Onslow's little village, where, in spite of the democracy, you are not likely to find any land on the market for some time to come. Here we are at the Park gates in the village street, not the chief entrance, which is on the Guildford side of the Park. There is the church a little further on, and in its rear, not far removed from the main road, is Lord Onslow's great house, one of the largest in Surrey. With all respect for those architects of the last century who deserved any, and a great many of them did not, what a blunder it was to ignore the best prospects as well as the sun in selecting a site!

A shooting party left the house at the time of my approach, and before night many braces of pheasants and hares, like Falstaff's "ragamuffins" had been "well peppered." My mission was to Mr. Court, the gardener, and fortunately a public path through the park to Merrow and Guildford passes the kitchen-garden. So I committed no trespass, which must upon occasion be done in passing through the country, or you will miss something you ought to have seen. The garden is a good one, 3 acres in extent, and walled, with several "houses," as gardeners call them, fairy palaces if we consider, formed of an exquisite, transparent fabric, which admits the sunlight, and is marvellously cheap. This department has been made attractive by flowers and grass paths, a conservatory, and a very pretty Rose-garden, surrounded by Yew hedges.

In one of the houses Mr. Court pointed out a Sutton's Chiswick Red Tomato in a 10-inch pot, having a bunch containing ten Tomatos, and a crop of a hundred altogether—a wonderful plant!

The gardening is all accomplished by four men with their head, so the working-man cannot have degenerated, though it is the fashion to say that he has done so. Close to the gardens are the house of the estate agent, clothed with Ivy, the stables and the timber yard. A short walk across the park brought us to the mansion, an oblong building of red brick, sobered by as many years as have shed their storms upon it since it was built in 1731. I

stands in the midst of a lawn of six acres, three storeys high, oblong in shape, colossal, and embellished by an English, a French, and an Italian front—a strange fancy of the poorest century for taste in building that this country has ever known. It seems ungracious to indulge in criticism, and I will only add in regard to the site, what a pity! The views towards the North Downs, whose ridge crosses the country half a mile south of the house, lie on the sunny side and are singularly pleasing, but they are out of sight. The northern landscape, seen from the windows and still better from higher ground near the church, comprises the park, and occasional groups of deer, with the high lying country beyond, the conspicuous tower of Knap Hill, and Frimley and Chobham Ridges, where the poorest sands of Surrey refuse to produce even the characteristic growth of such wastes as those of Woking and Bagshot. A pretty pond in the foreground of this pleasing landscape sparkles from the windows having the brightest of water well stocked with red spotted trout of the true Surrey breed.

The park slopes gently northwards away from the house, an arrangement which the architect should have altered by fixing the site where, in looking from the windows, you might imagine the landscape leaning towards you instead of shunning your gaze.

Clandon Park belonged originally to the family of Weston, of Sutton Place, Send, near Guildford, whose representative, Sir Richard Sutton, introduced red Clover into England, and encouraged the growth of field Turnips. The park was formed by an earlier Sir Richard with leave and licence of Henry VIII. In 1642 it was sold to Sir Richard Onslow, of Knole, Cranley, Surrey, or Cranleigh, as the word is now spelt to prevent confusing this Cranley with another somewhere else. A grandson of the above removed here early in the last century. Mr. Speaker Onslow became the first peer.

Over the hill to Albury, by Newlands Corner, and past the great Yews of the Pilgrim's Way, was for me a walk of deepest interest. I have known the Yews from a child, and turned aside to examine them. They have scarcely grown older in appearance. One ancient veteran, in whose hollow trunk a ruffian lighted a fire thirty years since, has become younger by a well-known process of healing and over-barking, one may call it rejuvenescence. The hills, too, are unaltered so far as I could see them lying still and solemn in the mist, with the leaves of the trees that cover most of them yellow and sere, and ready to fall. A friend of old times, a little worn like others by many years passing over him, welcomed me, and, after a short repast, we walked together to call on Mr. Kemp at Albury Park. In the company of a first-rate gardener, happy apparently in showing us the gardens and grounds he has managed for thirty years, the time slipped fast away like the rapid Tillingbourne that waters this beautiful place. There was constantly another specimen we must see, and another; day departed, and we stood before a dark thing—a tree, a Douglas Fir, I was told—twenty-three years planted, and eighty-two feet high; beautiful if we could only have seen it. We hope to do so some other time. *H. E.*

SWOLLEN MOUTH AFTER EATING PINE-APPLE.—A correspondent of the *British Medical Journal* states that "A gentleman about forty years of age received a Pine-apple as a present. The fruit had an unusually dark rind [Black Jamaica]. He ate several slices after dinner, carefully cutting off the rind, none of which touched his mouth. Within a few hours his lips began to swell. The swelling did not disappear for twenty-four hours. The tongue was not affected. The gentleman had no other uneasiness or pain." [We had a similar experience in some Pine-apples raised from suckers that came ashore from the *Tyne* Mail steamer, which came ashore off St. Albans Head in 1858. ED.]

# New Garden Plants.

ERIA (HYMENERIÆ AFF.) RIMANNI, *n. sp.**

This Eria would be a genuine Hymeneria, were it not for its very coriaceous leaves and the inflorescence, which has a slight covering of short reddish hairs on the rhachis, bracts, stalked ovaries and sepals. The bulb is pyriform, or like a fresh Fig, covered in the mature state with a very characteristic, rather shining brown or grey wrinkled skin (comparable to that of Eria myristicæformis, of Sir William Hooker), reaching nearly 3 inches in height and almost as much in circumference at the widest part. The leaves are cuneate, oblong, acute, very leathery, light green, much lighter underneath, with the eleven nerves of a dark green colour. I received only a single fresh leaf, the three bulbs having none, but there were scars of 3—4 at the top. The nodding inflorescence is very dense. The flowers may be compared to those of Eria pachystachya, Lindley, if the widely distinct lip be not considered. They are pellucid, of the lightest sulphur, and have a long blunt mentum. Lip sulphur coloured, with the front lobe of a fine golden-yellow, and two small purple spots over it, and a small tumour at the very base, covered with purple dots.

It was discovered by Mr. Ernest Rimann, in Burmah, when travelling for Mr. F. Sander, at whose establishment it is now in flower. It is a pleasure to name it after this ardent and successful collector. *H. G. Rchb. f.*

ODONTOGLOSSUM CONSTRICTUM (*Lindl.*) CASTANEUM, *n. var.*

I think I have seen hundreds of inflorescences of this well-known old plant, but this is quite distinct in its colours, and rather nice. The sepals and petals are cinnamon-colored, with one or two greenish-white lines at the base. It was kindly sent by Mr. F. Sander. *H. G. Rchb. f.*

## NEW SPECIES OF PRIMULA FROM THE MOUNTAINS OF YUNNAN, WESTERN CHINA.

THE genus Primula is now in the ascendant, and the number and diversity of the species in certain regions, especially in the mountains of Asia, seems almost inexhaustible. When that part of Sir Joseph Hooker's *Flora of British India*, containing the Primulaceæ, appeared some three years ago, it afforded a great surprise in the large number of new species of Primula described, chiefly from the Himalaya Mountains. After the reduction of a large number of forms that had previously been described as independent species to P. obtusifolia, P. Stuartii, P. petiolaris, and others, there still remained, including one in the addenda, forty-four admitted species. And every fresh district visited since has yielded something new, so that the publication of additional new species from the Himalayan region may be expected at any time.

It is noteworthy that no species of Primula has hitherto been detected, either on the mountains of the western peninsula of India, or on those of Ceylon. One very fine and distinct species, P. imperialis, inhabits the mountains of Java, and the familiar P. præmitens (sinensis) and P. japonica are the most conspicuous of the few species inhabiting the extreme east of Asia. But lying between Eastern India and Western China is a vast tract of country, the interior of China, concerning the vegetation of which comparatively little is known. Various French missionaries, notably David and Delavay, have, however, made considerable collections in the western provinces of China, and M. A. Franchet has described a great many of their novelties in various publications.

His latest contribution* to Chinese botany is a synopsis of the species of Primula collected in the mountains of Yunnan by Delavay. The collection comprises twenty species, nearly all found around Lake Tali; and of these twenty species, sixteen are, according to Franchet, absolutely new; three are referred to Himalyan species, and one is treated as a remarkable variety of P. auriculata, a native of the Caucasus and Siberia. The greater number of the Primulas of the lofty mountains of Yunnan, Franchet says, are singularly remarkable for the beauty of their flowers, surpassing even the Himalayan species in brilliancy of colouring. The new species described are:—

1. *Primula* (*Primulactrum*) *septemloba*, Franchet.—This has purple flowers, and is nearly related to P. mollis, Hook. (*Bot. Mag.*, t. 4798), and P. geraniifolia, Hook., differing from the former in its less abundant pubescence, in the shape of the calyx, and in the mode of cutting of the leaves; from the latter in the fewer, very obtuse lobes of its leaves, and from both in the absence of a ring at the mouth of the tube of the corolla. P. Kaufmanniana, Regel, has leaves more numerously lobed, and glabrous pedicels. Finally, Franchet adds, these four species are very closely allied to each other, scarcely differing, except in the shape of their leaves. Collected in woods at the foot of the glacier of Likiang.

2. *Primula* (*Aleuritia*) *bullata*, Franchet.—A handsome species, covered in nearly all its parts with a very enduring golden powder. Its bullate, strictly lanceolate leaves and thick rhizomes constitute it a well-characterised type, which, with the next, may be placed near P. petiolata. Flowers golden-yellow, very numerous, and borne in loose umbels. Found on limestone rocks on Mount Heehcanmen.

3. *Primula* (*Aleuritia*) *bracteata*, Franchet.—Flowers yellow, corolla scarcely exceeding the calyx. Differs from P. bullata in the absence of flowery powder, and in the short, partly glandular pubescence which covers the whole plant. Both differ from P. petiolata in having rugose leaves, and almost woody rhizomes. It inhabits shaded clefts in the limestone rocks of Lankong.

4. *Primula* (*Aleuritia*) *sonchifolia*, Franchet.—Flowers violet. Near P. obtusifolia, Royle, though quite distinct in its almost runcinate leaves, recalling those of Sonchus asper. Collected on the summit of Mount Tsangchan at an elevation of 11,000 to 13,000 feet.

5. *Primula* (*Aleuritia*) *serratifolia*, Franchet.—This is also near P. obtusifolia, differing in its triangular acuminate calyx lobes, in its acutely toothed leaves of thinner texture, and in its yellow flowers. From the elevated humid pastures of Tsangchan, above Tali.

6. *Primula* (*Aleuritia*) *secundiflora*, Franchet.—Readily distinguished by the unilateral arrangement of its fine violet flowers. It may be associated with P. sikkimensis, Hook. The very deep colour of its flowers renders this one of the handsomest species of the genus. Found near springs on the glacier of Likiang, at an altitude of 11000 to 13,000 feet.

7. *Primula* (*Aleuritia*) *calliantha*, Franchet.—Related to the last, from which, however, it is readily distinguished by its more coriaceous leaves, covered with a golden dust beneath, and finely crenulate instead of serrulate, by its large calyx and short thick pedicels, and by the denticulate lobes of the corolla. Flowers showy, of an intense purple-violet. Collected in very shady places under Fir trees on Mount Tsangchan, near Tali.

8. *Primula* (*Aleuritia*) *amethystina*, Franchet.—Amethystine flowers, borne in umbels of three to six. Leaves resembling those of the Daisy, with flowers of P. Kingii. Found in humid pastures at an elevation of about 13,000 feet on Mount Tsanchan.

9. *Primula* (*Aleuritia*) *bella*, Franchet.—Habit of P. uniflora, but very different in the narrow, deep lobes of the leaves, in the shape of the calyx, and in the corolla, which has bifid lobes, and the throat of the tube closed with whitish hairs. Flowers large and showy, of a deep purple-violet. Collected on the summit of Tsangchan.

10. *Primula* (*Aleuritia*) *yunnanensis*, Franchet.—This very elegant species is also rather closely related to P. uniflora, from which it is distinguished by its leaves being more attenuated at the base, with a glabrous petiole, by the lanceolate acute calyx lobes, by the bifid, not quadrifid, lobes of the corolla,

* *Eria (Hymeneriæ affi.) Rimannii*, n. sp. Pseudobulbis pyriformibus, tomentosis usque quadrifoliis; foliis coriaceis cuneato-oblongis acutis; racemo densissimo cernuo; rhachi rufo, pilosula; bracteis ligulatis obtusis rufo pilosis ovaria rufa-pilosa pedicellata dimidio æquantibus; sepalis æque brevissime rufo-pilosis, sepalo impari triangulo, sepalis lateralibus triangulis in mentum obtusum descendentibus; tepalis oblongis obtusis, labello cuneato antice trilobo lobis lateralibus semioblongis, lacinia antica transversa oblonga emarginata cum lobulo tertio medio triangulo insiliente, callo tumido in basi. Flores pellucidi hyalini sulphurei. Labelli lobus anticus lacte citrinus. Puncta duo purpurea lobo hinc superposita. Punctula purpurea nonnulla in callo humili in unguis basi. *H. G. Rchb. f.*

* *Bulletin de la Société Botanique de France* (1885), xxxii. p. 264

and by the pedicellate flowers, with the pedicels proceeding from different heights. Flowers violet-purple, with a slender corolla-tube. Growing in clefts of limestone rocks at the foot of the Likiang glacier.

11. *Primula* (*Aleuritia*) *spicata*, Franchet.—Remarkable in having unilateral spicate flowers, a kind of inflorescence previously unknown among Primulas. The leaves recall those of P. Wattii, but they are less attenuated at the base, and doubly crenate, and the violet flowers closely resemble those of P. uniflora. Collected in the elevated pastures of Tsangchan, above Tali, after the melting of the snows.

12. *Primula* (*Aleuritia*) *glacialis*, Franchet.—A pretty species, readily distinguished by its long calyx, divided four-fifths of its length into very narrow lobes, and by its corolla, which has relatively narrow, quite entire divisions. It is nearest P. nivalis and pinnatifida, and this should be classfied with P. capitata, Hook. (*Bot. Mag.*, t. 4550), aid P. erosa, Wall., from which they both differ, in their flowers being strictly sessile, as well as in the shape of their leaves and in their calyx. From the chalky alpine pastures of Heegnichan, above Hokin, north of Tali.

16. *Primula* (*Omphalogramma*) *Delavayii*, Franchet.—A very interesting species constituting a new subgenus, characterised by having large laterally compressed seed, with a thickened appendage on the ventral side, and by the flowers appearing before the leaves, borne singly on bractless peduncles. Flowers large, deep purple, sightly hairy ; peduncles ultimately as much as a foot high. Collected on the Tsangchan in cold, rather damp situations, in clayey soil, at an altitude of more than 16,000 feet, which is nearly as great as the greatest at which Primulas have been found in the Himalayan Mountains.



FIG. 158.—BANYAN TRAINED : BROUGHT HOME BY LADY BRASSEY.

P. Fedschenkoi, differing in its larger, more deeply lobed calyx, and peduncle shorter than the leaves. Flowers violet, three to five in an umbel. Found in clefts of rocks on the glacier of Likiang near the permanent snows.

13. *Primula* (*Aleuritia*) *dryadifolia*, Franchet.—This Primula has the habit of Dryas octopetala, and is well characterised by its leaves and the shape of its bracts. It belongs to the same group as P. uniflora. Flowers violet. Found on the glacier of Likiang, four days' journey north of Tali, at an elevation of about 13,500 feet, near the everlasting snows.

14. *Primula* (*Aleuritia*) *pinnatifida*, Franchet.—Near P. Wattii, King, differing in its leaves, being distinctly pinnatifid, not merely toothed, and by its corollas being only half as large, with entire lobes. The flowers recall those of Erinus alpinus, though they are larger. From the glacier of Likiang, at an altitude of 10,000 to 11,000 feet.

15. *Primula* (*Aleuritia*) *cernua*, Franchet.—P.

With regard to the prospect of seeing these new Chinese Primulas in cultivation, M. Franchet says there is every reason for hoping that seeds will be sent with the bulk of Delavay's collections, which had not reached Paris at the time he wrote ; a small consignment by post being the only portion received. There were four cases of dried plants on the way to Paris, and there is no doubt, from the sample to hand, that the entire collection will prove a most valuable contribution to botanical knowledge. The only Yunnan plants in the Kew herbarium are a small collection made by Dr. J. Anderson on Major Sladen's expedition in 1868. *W. B. H.*

TEA IN THE CAUCASUS.—One of our Russian correspondents informs us that under the auspices of a society the cultivation of Tea in the Caucasus is likely to be successful. Experience has shown that the shrub thrives at Souchoum-Kalé, Batúm, and various other places near the eastern shores of the Black Sea,

## AN OLD BANYAN IN A BOWL

THE curiosity in trained plants seen in fig. 158 was brought home by Lady Brassey, after making a voyage round the world in 1876-77, in the yacht *Sunbeam*. It is stated to be a hundred years old. The plant and vase stand 3½ feet in height, and the plant is kept to that height by cutting-back and tying. The bole from the ground to the foliage is 1 foot high, and 2 feet 9 inches in circumference, and has been used for a birdcage, the roots being tied to wires for that purposes, but now the wires are decayed with age it is no longer used for such a purpose. The plant is very healthy. We have to thank Mr. Allan, head gardener to Sir Thomas Brassey, Normanhurst Court, for the above-mentioned particulars. The particular species of Ficus is not quite evident from the foliage merely, but it is thought to be F. vasculosa, Wall. (F. Championi, B h.). There is no specimen like it from Japan in the herbarium at Kew.

## COVENT GARDEN AND THE NEW FLOWER MARKET.

THE handsome new flower market (illustrated in our columns, 1872, p. 176, and July 18, 1885, pp. 73, 76, and 77), which the Duke of Bedford has added to his market at Covent Garden is now approaching completion, so the following account of an interview which Mr. Bourne, the Duke of Bedford's agent, was kind enough to accord to one of the staff of the *Pall Mall Gazette* will no doubt be of general interest :—

"The Duke," said Mr. Bourne, "saw the need of a flower market years ago. A number of years ago the trade was but small, and space was allotted to the vendors in the general market, who afterwards shifted under the piazza by the Floral Hall, where they were found to be an inconvenience. He then determined to begin the buildings at present in use, though we were told that a flower market would never repay the outlay. It happened that the ground facing Wellington Street was available, and what is called the Wellington Street annexe was built. The experiment proved even more successful than had been anticipated, for the flower business enlarged rapidly, until two or three years ago the new buildings were planned and begun, and as the leases of adjacent houses fell in the space was utilised for the erection of the present buildings, which are not yet completed, though used, of course, for the market. To show the extent of the business, I may tell you that we have let the whole of the 370 stands, and I have now fifty applicants whom I have to deny. The market is wholesale, and in summer the hours are from 5 A.M. to 9 A.M., when the market is swept and shut up. In winter it is opened three mornings a week, in summer every morning."

### A REVOLUTION IN THE FLOWER TRADE.

"The increased railway facilities have revolutionised the flower trade. Now foreign flower growers are endeavouring to force their way into the market, and it is possible to sell flowers from the South of France which three days before were uncut. Our own growers grumble terribly at the competition, for they say : 'It is all very well to have flowers from Nice, but then, you see, when the salesman finds he cannot dispose of his stock, he almost gives it away, and forces our prices down at once.' In the ordinary run of things the English vendor takes the stock left over back to his nursery, and puts it under glass to wait for another day. I say in reply that if people want flowers from Nice they must have them, for I see no objection to foreign flowers." "How do you account for this increased demand for flowers?" "I fancy much of it is due to the æsthetic movement of the last few years, but I think myself that the Princess of Wales brought the taste from Denmark, and on Russian dinner-tables you cannot see the food for the flowers. To give you a proof that Covent Garden has become a great wholesale centre, not only for the general trade, but for the flower trade, I may tell you that the flower-buyers who attend the wholesale market supply the northern markets of the great provincial towns. I have been compelled to stop the activity of some of them, who used to get hold of the vendors before the market was opened, and, buying what they wanted, have it put into waggons waiting for the purpose, and taken down into the country by the 5 45, or newspaper train. This was, of course,

*

unfair to the other salesmen, and I resisted the innovation; for the more competition the better the market."

THE GENTLEMAN FLOWER GROWER.

"The fashion has created another business, for the professional florist is often a cultivated gentleman. I remember some time ago a young friend of mine was halting in his choice of a profession. He had to choose between the Church and the Law. He had no vocation for the Church, and there are lawyers enough already. Why not be a florist? I suggested. He took my advice, and was articled to Mr. Veitch for a couple of years. Then he proceeded to some great gardens, where he perfected himself by further practical experience, and subsequently started a small place of his own, built hothouses, and laid out grounds, and is now, I believe, a successful grower of flowers for the market. Nor is that the only instance." "By the way, Mr. Bourne, do you think it right that the streets leading to and from Covent Garden should be blocked morning after morning? If a cab once gets into that whirling maelstrom it is all up." "A cab has no business to enter the maelstrom. The public, remember, must for the time be subordinated to the market. Now in carrying out these new improvements we have widened the adjoining streets by 15 feet, thus lessening the present congestion. The ground-rents are correspondingly lessened, but no doubt the improvement will pay for itself by increased facilities of locomotion, and of movement to and from the market. It may, by the way, surprise you to hear that in my time two of the gates which it was customary in old times to shut during the holding of the market, in Burleigh Street and Southampton Street, have been removed, and, although I can find no record, I believe other gates existed for the same purpose."

THE CONVENT GARDEN AND THE FIRST EARL OF BEDFORD.

Mr. Bourne then gave me a history of this famous market. He told me how the land had been granted by Henry VII. to the Earl of Bedford, and showed me a Bartolozzi print of this gentleman which had just been presented to him by an antiquarian friend. "It was part of the old Convent Garden, when the monastery to which it was attached was one of the few houses in what is now called the Strand, and when all about us were fields and pasture land. In course of time the immigrants from the provinces and elsewhere had settled themselves about in the district, and as the people increased, and houses sprang up, the beginning of a market was formed, and Charles I. granted a charter to enable the Earl of Bedford to hold a market in Covent Garden fields, in front of St. Paul's, which, by the way, had been built and endowed by a Bedford. I may say that the portico of this same church is one of the most beautiful in London, and we have at one time or another expended £20,000 in its restoration and the rehabilitation of the churchyard. Well, without detailing the intermediate changes, let us go on to the year 1810, when the population had of course greatly increased. In 1810 an Act of Parliament was passed, called 'The First Management Act,' which did not interfere with the original charter, but enabled the Duke to frame laws for the better government of the market, which had by this time acquired large dimensions. It was then an open-air market but for the few wooden shanties which had been erected. In 1828 the then Duke determined to put an end to these rude methods, and the present buildings were erected."

HOW THE TOLLS ARE COLLECTED.

Mr. Bourne has been kind enough to explain in what manner the business of the market is carried on. "In old days the toll levied used to be charged for a head-load. There is no such measure now. Another measure of those times is called a maund, which we now make the equivalent for a bushel. Under the common law which regulates market tolls (or those peculiar to chartered markets) the money was payable by the buyer, which was one of the inconveniences removed by the Act of 1810, when they were made payable by the vendor. The same system holds good now, except that it is perfected and administered in the most careful, efficient, and economical manner. It may seem strange to you, contemplating the never-ending file of waggons which make their way in the early hours of the morning to the market, that this apparent chaos can be reduced to anything like order. Our corps for conducting these operations consists of one superintendent and six collectors, assisted by subordinates. We have also erected six offices, one for each of the railway companies, to allow us an inspection of the way-bills of all goods that come over their lines. Toll is charged on the load and bushel. There are two classes of people who frequent the market; in the early morning the waggons come, and upon these the toll is levied—not on the goods, but upon the waggons. The trader often agrees to pay an annual rental for the right of entry of one, two, or three waggons, as the case may be. He comes in the morning and sells his stuff from the tail of the waggon, by this means escaping the inconvenience of repacking; but these traders are compelled to clear off by 12 o'clock. They are followed by the new race of traders which the railways have created—that is, the salesmen—who are really the consignees of the great growers in all parts of the country, and even the Continent. These salesmen are generally capitalists, whose dealings are on a large scale. Take, for instance, the American Apple trade, where one of them would think nothing of running across to America and buying up the Apple crop of a whole district.

"I remember one of these gentlemen coming to me in a great state of alarm. He said, 'I have just had a telegram saying that there are 80,000 barrels of American Apples coming up to me by the next train, and I have no place to stow them.' I gave him a place in the new market, and before the day was over they had all been sold under the hammer. These salesmen are auctioneers, and their business begins after twelve, so that you see business is really going on at Covent Garden during the whole twenty-four hours. Subordinate to the salesman is a middleman, who acts, not as a consignee, but as a speculator, buying likely lots which he sells again at a margin of profit. In fact, the market does not so much supply local wants as it serves as a great centre of distribution." *Pall Mall Gazette, Nov.* 28.

## EIGHT DAYS IN THE GARDEN OF ENGLAND.

(*Continued from p.* 683)

TO DARTMOUTH BY COACH.—Our drive was uneventful. Up and down hill, over an arm of the estuary by the pretty bridge at Balcombe, and past one or two villages gay with Fuchsias, Escallonias, Veronicas, and Euonymus—shrubs that rejoice in the neighbourhood of the sea, we only noticed the paucity of the Apple crop, and that the reaping machines were hard at work, before we reached, near Stokenham, the long strip of marsh known as Slapton Sea. Filled with reeds—a valuable crop for thatch—and white Water Lily, this pool stretches behind a sand-bank, copiously sprinkled with yellow-horned Poppy, Thrift, and Sea Holly, extending about 2 miles along the coast from the little fishing village of Tor Cross. The coach, after passing along these sands by the calm blue waters of the Channel, climbs a steep ascent, and after dipping down once or twice, as at the beautiful little inlet of Blackpool, descends rapidly into the narrow streets of Dartmouth. The Weymouth Pine and Iris fœtidissima luxuriate along this coast, as at Sandgate and Folkestone, and but for the old three-decker training ships and the numerous boats of all kinds, the view up the Dart as seen from the steam ferry and the railroad is very similar to that obtained a few miles higher up stream from the castle at Totnes, whilst Dartmouth itself, with its narrow lanes running in terraces on a steep slope, is not unlike Salcombe. Night was closing in as we caught a glimpse or two of Torbay, and we reached Exeter too late for any exploration that evening.

EXETER.

A cathedral city with a Norman castle and nineteen parish churches proved too attractive to our archæological instincts to allow us much time for horticulture, so, to our great regret, we were unable to visit the well-known nurseries of Messrs. Lucombe, Pince & Co., or of Messrs. Veitch. The study of the fine work in colour, so conscientiously restored by Sir Gilbert Scott, the Norman towers, the 13th century clock, the elaborate bishop's throne, erected in 1326, and the richly decorated west front, by Bishop Brantyngham (1394), did, however, allow us to peep at many an interesting little courtyard scene in the close, or in the numerous quaint almshouses of the city, to admire the fountain in the garden of Bedford Circus, and just to glance at various small orchards and gardens occupying the slopes of what was apparently once the town ditch. Having admired the old houses and quaint churches of High Street and Fore Street, and the Ivy-mantled gateway and well-timbered terrace lawn of the castle at Rougemont, we did just find time to climb the hill overlooking the city above the reservoir, so as to get a bird's-eye view to the Haldon Hills, where the tower of Belvedere rises among the trees, and to notice the beds of shale near the railway-station before our inexorable "return excursion" bore us off on our journey home, impressed by the fact that in Devonshire gardens Nature does more than Art. *G. S. Boulger.*

## Orchid Notes and Gleanings.

TRICHOCENTRUM MACULATUM, *Lindl., Orch. Lindeni*, p. 24.

THIS plant was originally discovered by Mr. J. Linden in New Grenada. There are also numerous specimens at hand from Messrs. Schlim, Wagener, Warscewicz, Smith, Patin. Notwithstanding its having been published as early as 1846, I never knew of its having flowered in Europe, till I had quite lately a leaf and a peduncle from Mr. F. Sander. The oblong acute, very leathery leaf is light green, spotted with purple above, and almost totally sordid purple beneath. The flower is totally in accordance with the indications given by Mr. J. Linden to Dr. Lindley. They have a certain white colour with a slight indication of the lightest sulphur hue, purple spots on the dorsal sepals and petals. The cuneate oblong, almost retuse or bilobed lip, has two orange keels at the base. The column is striped with purple at the back, and has lobed and toothletted wings, which are green and purple. The spur is filiform, wider at its mouth, light green. Anther quite generic, with numerous acute papillæ, looking like a hedgehog. Sepals evidently keeled on the mid-line outside. *H. G. Rchb f.*

GOVENIA DELICIOSA.

This "is a very pretty and distinct Orchid, with the habit of a Bletia. It has an underground tuberous rootstock from which proceeds an erect stem, about 1 foot or 18 inches in height, furnished with a pair of bold plicate leaves. The flower-spike is borne at the top of the stem, and consists of from 6—8 flowers, of which the sepals are white, and the lip yellow at the base, the front half being white covered with purple spots." It should be grown in a cool-house or frame, and should be potted in a compost of warm leaf-mould and sand with good drainage. When the growth is completed the plant should be allowed to have a good season of rest, water being withheld until the tuber again shows signs of starting into growth. *Orchid Album*, t. 211.

CYPRIPEDIUM TESSELATUM VAR. PORPHYROPHYLLUM.

This is a hybrid from C. barbatum, fertilised by the pollen of C. concolor. In the shape of its leaves it resembles the male parent, while the marbling of the lip is that of the seed parent. The form porphyrophyllum was raised from the same cross (from the same seedpod) as the one called tesselatum, but is distinguished from it by its vigorous growth, its broader leaves, more thickly spotted, and by the flowers of a fine purplish-brown colour. *Lindenia*, t. 18.

CATTLEYA GUTTATA VAR. LEOPOLDI.

A magnificent variety with stiff many-flowered spikes; flowers nearly 4 inches across, segments roundish, oblong, yellow with purplish spots, lip projecting, three-lobed, lateral lobes roundish erect, connivent, anterior lobe obcordate, purple. *Lindenia*, t. 19.

ONCIDIUM LIMMINGHEI.

This is a strange plant, with leaves like those of a Sophronitis banded with brown stripes and springing from glaucous bulbs arranged in two rows on either side of a creeping stock. O. Limminghei is a pretty miniature of O. Papilio, and one of the most elegant species of the genus. It should be cultivated on a cylindrical block. In order to produce numerous branches Count de Buysson recommends that when

the plant is once established the rhizome is cut through below the second bulb from the top at the time when the plant is beginning to grow. A shoot is then formed at the section which will form a branch. The operation is repeated when the branches have four bulbs, and thus in a few years the block is completely covered with flowers. The plant should be hung near the glass in the Cattleya-house.

CATTLEYA GUTTATA WILLIAMSIANA

is an evergreen plant like the typical form in its manner of growth, but more compact. It has stems 1½ foot high, with two leaves of a dark green colour, one on each side. The flower-spike proceeds from the top after the growth is completed. The sepals and petals are of a dull purple colour faintly striped towards the margin, or in some cases spotted with deep purple; the lip is pale rosy-lilac with a very dark rosy-purple front lobe. It blooms in June and July, and lasts for some time in beauty. This plant requires the same treatment as the species itself, that is, it should be kept in the Cattleya-house, under pot culture, with good drainage, in a compost of peat, sphagnum and moss. This class of Cattleyas requires to be well grown, and never allowed to shrivel, either in the stem or foliage, for if either of those parts should fall a victim to neglect in this respect the possibility is that they will fail to get over it. They must never be disturbed excepting when they require fresh potting, or need fresh material about the roots, for they cannot endure to have bad sour material about them; it must always be sweet and fresh. The plants should never be cut unless they are in vigorous health. If it is required to increase them, care should be taken in performing this operation, to leave two or three old bulbs as well as the new growth. We find it better to cut them partly through, and when they begin to make growth the rhizomes may be cut asunder, but even then it will be better to leave the plant intact until the next season, and then to separate the parts just as they are beginning to make their growth, but with much caution, so that the roots may not be injured. After this pot them, but do not put them into large pots, as they do not need it. Over-potting is dangerous in the case of these plants, for they do not require more material about them than just enough to keep them firm in the pot. Some lumps of charcoal intermixed with the peat will be beneficial to them, as it serves to keep the material open, and, moreover, the roots will be benefited by it. *Orchid Album.*

ODONTOGLOSSUM CRISPUM.

In reading the remarks of your correspondent, Mr. O'Brien, on the variableness of Odontoglossum crispum, I observe that he places a great deal of importance on insect fertilisation. While admitting that this factor is not to be overlooked, I think we might with advantage enquire after the companions the so-called good and bad varieties keep. We should endeavour to find out the so-called species of Odontoglots that grow in company with the varieties of O. crispum. It is very possible that the character of the neighbouring species may account to a great extent for one locality being stocked with poor, or small-flowered and strong growing varieties, while another locality has large-flowered and strong growing varieties.

Considering the abundance of plants and bad varieties as in one locality, it would not be out of place to suggest that O. crispum has for companions some species that readily cross-fertilise, and that the seeds when matured proved very fertile. In all possibility O. odoratum or O. gloriosum is the male parent of many of the narrow reflexed petalled crispums. On the other hand, the fact of finer flowered and stronger growing varieties being located by themselves, and thinly distributed, may be accounted for by species growing in company with O. crispum not crossing so freely, and, consequently, fewer fully developed seeds being produced, hence fewer plants of the finer varieties are found in their native habitat. Many of the finer varieties of O. crispum have a strong resemblance to the O. luteo-purpureum section in some of their parts. Believing that both good and bad varieties are more or less dependent upon insect fertilisation for the reproduction of matured seeds, if plants were overcrowded in their native habitat so as to starve them in their growth that would account for the poor inflorescence at first, and likewise the thinly grown plants would produce the fine flowers seen by the collectors, and for a time after being imported. But how would the two sections compare with each other after being cultivated at home for some years side by side? *T. H. A.*

DENDROBIUM SPECIOSUM.

I have a plant of this very shy blooming Dendrobe with eleven spikes, fully developed, and averaging 1 foot long. I learn from my gardener that the plant has not flowered for four years. I succeeded in getting vigorous growths in the early season. In June it was stood on a brick wall (due south), and the hot summer we had nearly baked it. During September it was placed in an early vinery which was at rest. Nothing more was thought of it among the generality of resting cool plants that happened to be placed there. Happening one morning to look at it I found it pushing vigorous flower-spikes, which I allowed to grow on in the same house, and am now rewarded with a grand display of this fragrant species. The plant is now in a night temperature of 55°. I have other plants of this variety which I hope to succeed with, as they are showing well, and promise a nice display in due course. *Thomas Garnett, Cavendish Gardens, S. W.*

## EARTHING-UP.

THE ridge, consisting of earth heaped round the base of the plant, exercises very diverse actions; often useful, it is sometimes without sensible action—occasionally the effect is even hurtful.

The practice considerably modifies the physical constitution of the soil; it, moreover, exercises a very important influence on the manner of growth of plants.

The temperature in the raised mound, as compared to the temperature of the level ground, has been found greater by 1° to 2°.5 C. at mid-day at a depth of 10 centimetres during the day from June to August; this fact has been proved in various soils. At night, on the contrary, the temperature has been found to be 1° lower in the ridges. During winter it is generally the raised soil which is coldest.

Generally, when the sun is shining, the ridge aids the heating of the soil; when the sun has set, the ridge produces a cooling effect. These results are easy to explain: the ridged soil offers a greater surface to the sun, it receives the rays less obliquely, the soil there is very dry, and it takes a less quantity of heat to warm it; thus it is natural that it should be warmer during the day; during the night, on the contrary, the radiating surface is greater on the ridge, it is more mellow, more easily penetrated by the cold air; if there has been rain, the surface of evaporation is more extended the temperature necessarily falls lower there than in the level soil.

This increase in the temperature of the soil re-acts on the plants by aiding the development of roots, by favouring the absorption of water, and generally by hastening their development. Experiments have shown that the more carbonic acid there is in the soil the colder it is; now the presence of carbonic acid proves the existence of inferior organisms whose work it is to elaborate the organic matter which forms the nourishment of plants: it is thus in the ridges that the plants find most food. But, it must not be forgotten that these inferior organisms only work when the soil contains exactly the proper amount of water which is indispensable to them; if the soil is too dry their work stops.

If by earthing up we dry the soil too much we lessen or even destroy its fertility, and this explains to us why this practice may even become injurious. During one season the quantity of water existing in different sorts of soil, both in ridges and on the flat, was determined. One hundred parts of soil contained of water—

| | Clay. | Sand: limestone. | Sand: flint. | Peat. | |
|---|---|---|---|---|---|
| On ridges .. .. | 11.35 | 10.33 | 1.22 | 43.69 | 17.74 |
| On the flat .. | 17.48 | 12.23 | 2.52 | 51.64 | 29.01 |

This table clearly shows that the soil of the ridge is always the drier; but it is in the siliceous sand that it loses the greatest proportion of water, so that it is in this kind of soil that the disadvantageous results are chiefly manifested.

To sum up, the ridge will be useful on compact soils, rich in humus, holding water, and situate in moist climates; while in dry regions cultivation should be carried on on the flat.

We have said that the ridge exercises a very important action on the manner of development of plants. On many species of plants, in addition to favouring the development of true roots, it promotes the development of adventitious or secondary roots; this may be seen in kidney Beans, broad Beans, and in Turnips. Some species have not the power of making adventitious roots. Grasses, for example, as Wheat, Rye, Barley, Oats, Millet, Buckwheat, do not form new roots. [?] Such plants do not require the earth to be heaped up round their stem. There are even plants which are enfeebled by this treatment, because it causes an unnecessary lengthening of their stem, as in those plants in which the stem terminates at the surface of the soil in a rosette of leaves. If you put earth on such a stem you induce it to elongate so as to produce its leaves on the surface to a length equal to the depth of the soil over it, and this lengthening is effected at the expense of the materials which were destined to develope the other organs of the plant. Some very interesting comparisons have been made between Beetroots grown under identical conditions, with the exception that one lot was grown on ridges and the other was not. The average for one Beetroot is found to be:—

| | Ridge. | Flat. |
|---|---|---|
| Weight of the leaves .. .. .. | 359 | 391.6 |
| ,, ,, ,, radicles .. .. .. | 9.2 | 27.5 |
| ,, ,, ,, root .. .. .. .. | 507.6 | 525 |
| ,, ,, ,, whole plant .. .. | 875.2 | 934.1 |

The ridge produces a diminution in the numbers of the leaves and in the development of radicles; it promotes lengthening above the ground, and with this lengthening of the stem there is a corresponding diminution of the underground and useful part of the plant. Evidently the ridge had lessened the total weight of the plant and the weight of the underground and utilisable parts.

In the case of Turnips, it may be noticed that the ridge prevents the crown from becoming green, so that it remains tender and preserves the texture of the root; this latter is a great advantage in a plant used for food for cattle.

The ridge is greatly used in the culture of Potatos; it produces such marked results that the tuber is planted almost on the surface; but if the Potatos are planted deep the ridge is of no use, and is even often hurtful to the plant. In those kinds of soil where ridges produce bad results, because they draw from the soil the humidity which is indispensable, the tubers must be planted deeply, and allowed to develope in level ground. Let us remark here that the culture on the flat will slightly favour the growth of weeds, on account of the maintenance of too great an amount of moisture in the soil; but these can easily be got rid of with the hoe.

With the greater number of plants for which the ridge is useful, it is important to hoe the weeds as soon as possible; if we wait too long we risk touching and injuring the plants. In growing old they have partly lost their faculty of forming adventitious roots, and they profit much more from the work of new roots than from those which were formed earlier. With Potatos the tubers which are developed on the new stolons have more time to ripen.

We have see that the soil is drier in ridged land than in the plain ground, it would therefore be useful to sow, in certain lands, plants on the ridges, although these plants do not derive any direct advantage from it, for example, Beetroots. The ridges running north and south have a much more uniform temperature than those going from east to west; the south side is always drier than the north side. The ridges directed from north to south exhibit great uniformity in the evaporation of water from both their surfaces; it is evident that these are conditions favourable for the development of plants. Some Beetroots from ridges running north and south were ripe in September, those from ridges running east and west were only ready in

October, the former contained 12.25 per cent. of sugar, the latter 10.62 per cent. *Dr. Wollny in Annales Agronomiques.*

## NOTES ON SHRUBS.

A VAGABOND'S notes on this head, chiefly suggested by walks about Exeter, may be pardoned if regarded as a well intended effort to gather moss. Those who have seen Algerian or Levantine gardens —or, indeed, any garden by the side of the sunny Mediterranean—will probably have kindly reminiscences of large Rosemary bushes—

"There's Rosemary,—that's for remembrance!"

'Tis a pity that we cannot have in "our tight little island," on account of Jack Frost's envious scythe—the Nemesis of flourishing tender plants—thick shrub-like growth of the Rosemary. A tolerable make-shift, as far as foliage is concerned, is supplied in Salix rosmarinifolia, which, owing to the silvery reverse of the leaves, is an uncommon pretty thing, whether worked as a standard or as a bush. The fact that it is so seldom seen in shrubberies in the precincts of houses is painfully suggestive of ignorance of our native shrubs. [A doubtful native this. ED.] Under a south wall, if possible in the east corner, few South Coast horticulturists need hesitate about planting out that old favourite, Erythrina crista-galli. Flowers are not so common out-of-doors in September that we can dispense with one so floriferous. The chief *raison d'être* of an Orchid maniac is the strangeness and beauty of the flowers, since the bilious hue of the leaves can delight nobody. Even so the nurseryman ought to try and spread for their own benefit the open-air cultivation of the Erythrinas, and not be so constant in the recommendation of small Conifers. The sight of Cupressus erecta viridis standing on a grass-plot too small for tennis, like a stuffed sentinel, will soon become distasteful even to the jobbing gardener.

Two other shrubs I saw out in Exeter were Berberidopsis corallina and Eurya latifolia variegata. The latter never attains the same splendid colouring as in heat, and I would far rather risk in sheltered positions Clethra arborea, named popularly the "Lily-of-the-Valley Tree," and which is truly a gladdening thing of beauty.

BITTON.

As distances are considered in England it is a good way from Exeter to Canon Ellacombe's garden at Bitton. But even there, as a goodly number of your readers will know to their pleasure, there is a wealth of shrubs uncommon on account of supposed tenderness, or neglect only explainable from the narrow groove in which the minds of many professional gardeners are wont to move. This contentedness with a byegone and at one time almost stereotyped form of shrubbery planting, principally consisting of Yews and Laurels, is rapidly fleeting by, and side by side with the great and indubitable progress in fruit culture can often be found a greater enlistment of beautiful shrubs and plants into shrubberies, and greater care taken to get them established and kept prosperous. Suitable subjects for shrubbery planting, which may, one and all, be called neglected of the many, and which occur to me without reference to notes, may be mentioned in Clerodendron trichotomum, Chamærops excelsa, Elæagnus macrophyllus, Aralia japonica, Cratægus Lelandi, Cotoneasters Hookeri and frigida, and Cercis siliquastrum.

Canon Ellacombe will perhaps tell you, if you are fortunate enough to have him as guide over his small parcel of ground, "You must expect to see weeds and shrubs." A giant Equisetum was the first weed that obtruded itself into notice. A bright and graceful cynosure it was, and one which the Canon himself, despite its great and troublesome reproductive faculty, would be loth to lose from the side of Colchicum speciosum rubrum, grandest of its tribe. The two formed a combination capable of adding a fresh beauty to any border, be it never so select. Such combinations form the particular charm of this garden. The beautiful undergrowth of Cyclamen in the beds on the grass lawn has been there for sixty years. The trouble of naturalisation was no doubt immense, but now there is the minimum of labour and a result as exquisite as can well be cherished. Why should not not more take the same trouble, instead of spending money on the protection of perishable Pelargoniums? *C. A. M. C.*

## NOVELTIES FOR 1886.

THE plants figured on this page, from blocks kindly lent by Messrs. Haage & Schmidt, Erfurt, will be found useful subjects in the hands of the cultivator who has an eye for the beautiful amongst



FIG. 159.—PHACELIA PARRYII.

plants not included amongst florists' flowers *par excellence*. We append the descriptions of the plants found in the catalogue of the before-mentioned firm:—

*Phacelia Parryi*, Torr. (fig. 159).—A truly magnificent new annual from California, of branching habit, and 1 to 1½ foot in height; leaves ovate, irregularly doubly-toothed or laciniate; hirsute, bright green; racemes loose, elongated; flowers circular, ¾ inch in diameter, of a lovely purplish-violet colour, with five



FIG. 160.—ERITRICHIUM BARBIGERUM.

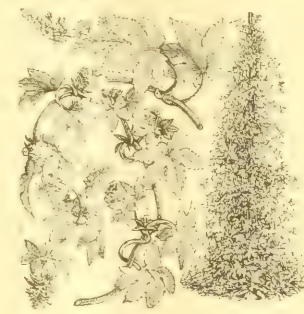


FIG. 161.—HUMULUS JAPONICUS.

pure white spots at their base, similar to the P. campanularia introduced last year, but surpassing the latter by its greater abundance of bloom.

*Eritrichium Barbigerum*, Gray (fig. 160).—A pretty and extremely free flowering hardy annual of dwarf spreading habit with pure white Forget-me-not like flowers and linear-oblong, hirsute leaves. The flowers of this Borage-wort appear in racemes on an elongating spikes like those of the Phacelias; the bushy plants keeping up a constant succession of bloom throughout the season, present with their white flowers a charming aspect.

*Humulus japonicus*, Sieb. et Zucc. (fig. 161).—A new annual Hop from Japan, which has proved in our hands to be a very ornamental and extremely fast growing climbing plant. The foliage resembles in shape that of the common Hop (H. lupulus), but having more incisions, is very dense and of a lively green; stems and leaves are somewhat rough and hairy. The principal and most valuable feature of this new climbing plant is that it can be sown in the open ground in spring, and that it attains enormous dimensions in a very short time. Undoubtedly one of the best climbers for covering verandahs, trellis, &c., never suffering from the heat or being injured by insects like so many other climbing plants, but retaining its fresh and lively green colour until late in the autumn.

## A COMMON EDIBLE FUNGUS.

AGARICUS (CLITOCYBE) INFUNDIBULIFORMIS, *Schæffer*.—This is an extremely common fungus, white or pallid in all its parts. It grows amongst grass, &c., by *paths* and *open places* in woods.

The accompanying illustration (fig. 162) shows a mature and full grown example natural size, with a section at the base. The cap or pileus is thin, but somewhat fleshy, as shown by the section; it is soft, not harsh or brittle, the outer surface is clothed with minute silky down. At first the cap is convex and umbonate (*i.e.*, with a central boss or projection), but it soon becomes *funnel shaped* and flaccid, as here illustrated. The stem is thin, soft, and stuffed—*i.e.*, neither hollow nor decidedly solid, and generally slightly thickened towards the base. The gills are moderately distant, and *strongly decurrent—i.e.*, they run down the stem. Spores white. The odour is pleasant and fungoid. Fries says "Odor *gratus*."

The sub-generic name, Clitocybe, is derived from κλιτός, a declivity, and κύβη, the head, in reference to the outer surface of the funnel-shaped cap; infundibuliformis has a similar meaning, viz., funnel-shaped. Agaricus infundibuliformis, is a close ally to A. odorus, described on p. 620. With common care the fungus before us cannot be mistaken for any other species; it is perfectly safe eating and very delicate and tender. It may be cooked in the same way as Agaricus procerus, (see p. 650). A very curious variety of A. infundibuliformis, first detected as British by myself, and named A. membranaceus, Fries, is sometimes found in Pine woods. Original coloured drawings of both type and variety may be consulted in the department of botany — British Museum, South Kensington. *W. G. Smith, Dunstable.*

# FORESTRY.

## WORK FOR DECEMBER.

FEW things in connection with an estate are so useful as a plentiful supply of well-seasoned, home-grown timber, and as the present season is just the time for providing it, every opportunity should be taken during stormy weather, when planting operations are suspended, for laying by a stock, more especially on such estates as are provided with that invaluable adjunct, a saw-mill. It is well to remember that the lasting quality of timber and its consequent value is much enhanced when the trees are cut up a season before being used, as by this means it has time to get well seasoned, and when regularly tarred or painted it lasts much longer than when converted in a green state, its lasting qualities in that stage being considerably deteriorated, and consequently unfairly represented. Fencing materials of all kinds—posts, rails, boarding, stays; also wood for gate-making, for repairing tool and other sheds, drain-soles, &c.—should be cut up and stored away in a cool, airy building, until wanted for use.

SEASONING.

As the seasoning of timber both before and after conversion by the saw is of the greatest importance, and well deserving of our most serious attention, we would strongly urge on those who have the charge of such work to see that it is done in a way in which the preservation of the timber is most efficacious. Both a natural and artificial method of timber-seasoning is now in use, natural by allowing the sap to evaporate

of its own accord, and artificial by the extracting of the sap by an air-pump and by the application of heat. As the former method is that generally adopted on estates, and perhaps the best, certainly the cheapest, we will briefly direct attention to one or two ways which have been found practicable on various estates, and which may, therefore, be judiciously extended wherever home-grown wood is in request. Fell the timber at any time between the end of September and the beginning of April, and leave it fully exposed to light and air for at least eighteen months or two years, after which it may be sawn into boards, planks, or fencing material, and stored away in a dry, airy shed, great care being taken not to allow the planks to lie too close, but to have a free passage of air circulating amongst them. After six or eight months they will be ready for use. Another, and perhaps simpler method, and one that is very generally adopted, is to cut the timber as soon as felled into logs, which are stored in a dry, airy shed for a year or two before being sawn into boarding. Larch fencing posts may also be cut up when in a green state and stacked for a year or so before use; when thus treated they are exceedingly durable and capable of resisting the inured to their breezy high-lying situation than those of larger size. Where the soil is of average quality the kinds of plants best adapted for hillside planting are the Corsican, Austrian, and Scotch Pines; while amongst hardwoods, the Sycamore, Birch, and Mountain Ash are invaluable. Larch should also form the major portion of the crop.

### THE CORSICAN PINE.

Last week I examined a 30 acre plantation at 700 feet altitude on the Snowdon range that was formed six years ago, and was certainly pleased to find how well the Corsican Pine, which was planted as standards at 16 feet apart all through, had thriven—better far than either the Scotch or Austrian. Even on the most exposed sites and where fully exposed to our much-dreaded south-west gales this Pine is quite at home, rising with clear, straight stems and not a branch shrinking or bending from the blast. Altogether this is a most valuable tree for general forest planting, and one which, from our rather wide experience of it, can be thoroughly recommended as a first-class introduction in the formation of new woods. As it is rabbit-proof, or almost so, its value as a forest tree in game-infested districts is enhanced. Where slit or notch planting is adopted be careful to thoroughly close the opening after the plant's insertion, neglect of which has led to irreparable loss in mountain planting.



FIG. 162.—EDIBLE FUNGUS, CLITOCYBE INFUNDIBULIFORMIS. (SEE P. 716.)

encroaches of damp and its attending consequences for a long period. Ringing or girdling is another method of seasoning timber, which consists of removing the bark from around the bole for, say, 2 inches in width previous to felling. This is usually performed in September, and the following winter the trees may be cut down and sawn up at once. Being somewhat unsightly, more particularly in park or road-side woods, this girdling method is not very generally adopted.

### PLANTING.

With the exception of a few nights' frost towards the middle of the month, followed by heavy rain, the weather during November has on the whole been very favourable for conducting planting operations, which work should now be well advanced, and, where only on a limited scale, finished as early as possible in December. Where, however, there is a large extent of planting on hand it will be necessary to press it forward during open and favourable weather, but on no account attempt planting in frosty weather, during keen, cold winds, nor in wet portions of the ground.

The nature of the ground, the quality of soil, the elevation, and exposure, will, in a great measure, dictate the size and kinds of trees to be used. For rocky elevated ground plants of one or two years' growth will be found most suitable, and they are more readily

Holing or pitting, although more expensive, is decidedly the best preparation of the ground previous to planting, but only in low-lying districts, where large plants are to be used is it to be generally recommended. The size of the pits will, of course, vary with the size of plants to be used, but circular pits of, say, 2 feet in diameter and about 18 inches in depth, will be sufficiently large for the general run of plants. These, it may be well to state, should always be opened and the soil left loosely exposed for some time previous to planting, as by this means it will become thoroughly pulverised, work kindly, and be in the best possible condition for placing around the tender rootlets of the plants In some cases, such as when planting rather damp, retentive soils, the process of planting may immediately succeed that of pitting, as the holes are apt to fill with water: but this seldom happens where thorough drainage has been attended to.

### SEA-SIDE PLANTING.

For resisting the effects of the sea blast, we find the following trees of great value:—Pinus Pinaster, P. Laricio, P. austriaca, P. insignis, P. sylvestris, Quercus ilex, the Sycamore, Huntingdon Willow, Beech, Ash, and Cupressus macrocarpa. Amongst shrubs the Sea Buckthorn, Tamarisk, various kinds of Euonymus, Cotoneasters, Arbutus, Laurustinus, Portugal Laurel, Escallonias, the Minorca Holly, and Aucubas all do well, and may be planted without the least reluctance or fear of harm.

### TIMBER PRICES.

The timber trade is just now exceptionally dull, indeed we cannot remember prices at so low an ebb, and unless for Sycamore, Oak, and Larch there is little or no demand. Boat building along the coast here enhances, however, to some extent the prices of such timber as is used for that purpose—notably Oak, Elm, and Larch; but for general forest timber and propwood we are entirely at the mercy of the timber merchant. Clog-making being carried on in most Welsh towns the price of Birch and Alder tends to keep steady, although even these have considerably declined of late years. Propwood on an average of 6 yards to each pole, and sawn to 3 inches in diameter in the small end, realises at present exactly one-half the price per yard that it did five years ago; while Scotch Fir, Spruce, and the smaller hardwoods can hardly be disposed of at any price. The following is a list of prices, such as are realised at present for timber of average quality, Oak, Elm, and Larch being, as before stated, considerably affected by local demand:—

| Per cubic foot— | s. | d. | Per cubic foot— | s. | d. |
|---|---|---|---|---|---|
| Sycamore | 1 | | Hornbeam | | 7 |
| Oak (English) .. | 1 | 6 | Poplar .. | | 6 |
| Oak (Turkish) .. | 1 | 0 | Willow .. | | 4 |
| Elm (Scotch) .. | 1 | | Gum tree | 1 | 3 |
| Elm (English) .. | 1 | | Lime .. | 1 | 0 |
| Ash .. .. | 1 | | Spruce .. | | 7 |
| Beech .. | | 7 | Scotch Fir .. .. | | |
| Alder .. | | | Silver Fir .. .. | | |
| Chestnut (Spanish) | 1 | | Chestnut (Horse) .. .. | | 7 |
| Chestnut (Horse) | | 7 | Ash .. .. | | 7 |

Propwood sawn to 3 inches diameter in small end, 1½*d.* per lineal yard; firewood, 5*s.* per cartload; faggots, small, 8*s.* per 100; faggots, large, 10*s.* per 100. *A. D. Webster, Penrhyn.*

## BERRY-BEARING PLANTS.

(*Continued from p. 717.*)

BERBERRIES.—Some of the Berberries, notably Berberis vulgaris, B. aquifolia, and B. stenophylla, are second to none in the brightness and profusion of their fruits. Our native species, B. vulgaris, although surpassed in beauty of flower by several of the evergreen forms, is, especially when laden with its orange-scarlet fruit, a plant not to be despised for well chosen portions of the shrubbery. The purple-leaved variety of this plant is both distinct and beautiful, the foliage of this, in spring, is of a deep wine-colour, passing gradually into a pleasant purplish-green as the season advances. B. stenophylla, a hybrid between B. empetrifolia and B. Darwinii, is, when in the shape of large bushes, remarkably effective, the profusion of dark purple berries preceded by the pretty yellow flowers rendering this plant well adapted for a front place in our grounds. It is also perfectly hardy—more so, indeed, than the favourite B. Darwinii—a circumstance which makes it specially valuable. Several other species are well worthy of being largely grown for both fruit and flowers, such as B. aquifolia or Mahonia aquifolia, a well-known and valuable evergreen species, with large ovate-lanceolate leaves and terminal racemes of deliciously scented yellow flowers: B. Darwinii, perhaps the handsomest in cultivation, with dark glossy leaves, and orange-yellow flowers, succeeded by a wealth of deep purplish berries; and B. dulcis, with coriaceous oblong leaves, slender peduncles of yellow flowers, and bluish-black berries.

### SYMPHORICARPUS.

The Snowberry, Symphoricarpus racemosus, with its conspicuous and familiar white berries, is distinct, and offers a fine contrast to other berry-bearing shrubs—indeed, it stands almost alone as the representative of the white-fruited section. It is a common bush in English gardens, and deservedly so, for, from its throwing up suckers in profusion it quickly forms a dense, twiggy mass, with small oval entire leaves, and racemes of rather insignificant pinky flowers, which, in their turn, are succeeded by the large white berries, that are persistent during a greater part of the winter. S. vulgaris, the Coral Berry, is of less stature than the former, usually more compact, and with small dark red berries. The Wolf Berry, S. occidentalis, resembles S. racemosus, but has larger flowers and smaller fruit. A variegated form, in which the margins of the leaves have a faint yellow tinge, is also in commerce.

BENTHAMIA FRAGIFERA,

with its large scarlet Strawberry-like fruit, is another valuable addition to our berry-bearing shrubs. Unfortunately, this handsome and desirable plant is not generally hardy, and, unless in the southern and western English counties, will not survive our severer winters. In the South of Ireland it withstood uninjured the severe winter of 1879-80, which induces us to believe that there are many, especially maritime, situations where, with a little care in the selection of suitable sites, it would be quite at home. The fruits, about the size of large Walnuts, are of a dark red colour, and being distasteful to birds, not unfrequently remain on the tree till spring. It is a native of Nepal.

COLUTEA ARBORESCENS,

the Bladder Senna, a native of Southern Europe, has long been known in English gardens as a species of rapid growth, the easiest culture, and a desirable acquisition whether in flower or fruit. From midsummer onwards—indeed, until frosts set in—the yellow pea-shaped flowers are produced in abundance, these being succeeded by large red bladder-like pods, which impart an interesting and by no means common aspect to the plant. It is of the easiest culture, any soil seeming to suit it well if not overcharged with moisture. [It does well in the smokiest localities. ED.]

PYRUS.

In the genus Pyrus are several highly ornamental berry-bearing shrubs or small trees, of which the White Beam tree, P. aria, P. domestica, P. malus, P. prunifolia, P. torminalis, and our well-known Rowan Tree, or Mountain Ash, P. aucuparia, may be considered the most desirable. When loaded with its abundance of scarlet berries in autumn the latter is highly attractive, and forms a most conspicuous object in the landscape; indeed, in this respect its merits are not half appreciated, for it is more frequently found in out-of-the-way places than gracing with its distinct foliage, and large, dense corymbs of white flowers, well chosen spots in our gardens and parks. The White Beam tree, although closely resembling the Mountain Ash, is nevertheless perfectly distinct, the leaves being light green above and downy underneath, which latter gives to the tree a peculiar and distinct appearance when agitated by the wind. When covered with its red or scarlet fruit this tree is very ornamental, but unfortunately these are so relished by birds that they rarely, unless in extremely mild seasons, remain for any length of time after becoming ripe. The rich yellow, rosy-cheeked fruits of Pyrus or Cydonia Maulei renders it a very attractive autumn plant, whether used, as it frequently is, for hedges, or standing singly in sheltered portions of the garden.

OSTRYA CARPINIFOLIA.

The Hop Hornbeam, with its Hop-like catkins, has a very singular and pretty appearance, and is decidedly an ornamental tree that is well worthy of extended cultivation in this country. Hop Hornbeam, the popular name, is given by reason of the singular resemblance that exists between the female catkins and those of the Hop, and between the ovate-cordate leaves and those of the Hornbeam (Carpinus).

As regards soil this pretty and distinct tree—for under favourable circumstances it attains the height of our common Hornbeam—is by no means difficult to please, and will be found to succeed well in most situations where not too exposed. O. virginica, from North America, is of similar appearance to the latter, but does not attain to so large a size, and being somewhat tender in most parts of England is rarely seen in good form. *A. D. Webster.*

*(To be continued.)*

## COW-KEEPING BY FARM LABOURERS.

A CERTAIN sympathy naturally exists between the gardening community and farm labourers because of the well-known attachment of the latter to their gardens, and we are pleased to learn from a pamphlet before us that on some estates in pastoral districts farm labourers are able, not only to hold garden ground to their great pleasure and advantage, but also plots of pasture sufficient for the maintenance of one cow for each family. A pamphlet prepared at the request of the Royal Agricultural Society must needs differ widely from some other discourses which have recently been published on cows and farm labourers. It is the result of inquiries pursued on the estates where cow-keeping has been most successfully carried out, and it expressly states that success can only be assured on grass land where the cow can crop her own provisions, and her rations have not to be expensively produced by spade labour. The author does not mix up this business of cow-keeping with the vexed question of small holdings. He simply reports that he has discovered no examples of successful cow-keeping by labourers on arable land, while in the case of pastures they abound, the essential elements of success being grass land, and a knowledge of dairying among the female members of the labourers' families. The best examples of the system are in Cheshire, while in the dry eastern counties there are few. Lord Tollemache's estate in Cheshire boasts of 260 rustic labourers, each keeping a cow, which, by his providence, has now become a hereditary virtue; he purchases, sometimes with money partly borrowed, and insures in admirably managed cow-clubs. The whole system, as organised on this and some other estates, together with its admirable influence on the labourers, and the increased comforts they enjoy, are described in detail. But it must not be imagined that every labourer can keep a cow. Lord Tollemache owns an estate of 7000 acres in Suffolk, and there is not a cow plot on it! The land does not take to grass kindly, and the labourers' wives know nothing about cows. Cow-keeping by labourers, however, is capable of great extension in many districts where it might be introduced, especially now that the breadth of pasture land is rapidly increasing. We recommend this 'shilling pamphlet to those who are interested in its subject, and in increasing the attractions of village life.

## ORCHIDS AT KNEBWORTH.

NOT a little of the insight that has tended to make the wants of these singularly beautiful plants better understood is learnt from the success of those who grow them under conditions that were looked upon as such as to make even their existence impossible. Especially has this been the case with the kinds that it used to be considered not possible to grow without the aid of a hot, close atmosphere through the season of growth, with a temperature, even when at rest, equal to that of the hottest parts of the tropics. A case of this kind recently came under my notice at Knebworth, Lord Lytton's beautiful place, near Stevenage, where, amongst a number of other species grown in vineries, are some Saccolabiums, Vandas, and Aërides, such as one might travel the kingdom through without finding their peers. Of these the most remarkable is Saccolabium guttatum and S. guttatum giganteum. The former has twenty-four leaves to the principal growth, fresh and green, with numerous roots from the stem above the lower leaves. The plant has five strong breaks. S. guttatum giganteum, in the same basket with it, is equally strong, but has not retained its bottom leaves quite so well. Three specimens of Vanda Roxburghii, with five and six growths in each basket, unusually large and strong, and apparently retaining every leaf they have made since they came into the country. Aërides odoratum purpuratum, as strong and vigorous as it could be. Vanda cœrulea is represented by a specimen with five leads, filling the large basket in which it is grown. The strongest growth bears twenty-two leaves, the others a few less: the plant was bearing five spikes of bloom, carrying nine, ten, eleven, twelve, and sixteen flowers respectively. This, like the others, is one of the best examples I have met with. The leaves are in perfect condition, in which they are seldom seen, as those acquainted with Orchids will endorse. The fact of the two Vandas named succeeding under the treatment is a matter to cause less surprise than the Saccolabiums, which are usually considered to require as much heat as any Orchids in cultivation, and which have hitherto been looked on as incapable of bearing the low temperature to which they are necessarily here subjected from the time the last house of Grapes is ripe at the end of September, until the end of December, when the early house has been started so as to admit of their being transferred to it.

To make the conditions understood under which the plants have been grown during the six years that have elapsed since Lord Lytton sent them home from India it will be necessary to say a word about the vineries in which they are located. These are three in number, ordinary lean-to, standing under the full influence of the sun, with nothing to lessen its force. The houses are worked so as to come in in succession; the first is started early in December, the second to give a supply of fruit during the intervening time between the earliest being over and the last, which consists of Muscats and late black varieties for winter use, ripe about the end of September. It may be well to state that the Vines are in good bearing condition—not merely Vines in name, that are subjected to the treatment the Orchids require, but simply the reverse, the Orchids having to put up with what the Vines need. The late house was carrying a very good crop, the Muscats especially were well done, bearing well-coloured good bunches. As to the details of the treatment pursued, it will be best to let Mr. Kipling, the gardener, speak. This I am enabled to do from what he was so kind as to write in answer to a few questions I asked him respecting them, which my hurried visit to Knebworth did not give me an opportunity of ascertaining verbally.

"After the Grapes are ripe the Orchids in question remain in the late vinery, where, as a matter of course, the regular use of fire-heat is discontinued from the time the crop is ripe, but the lowest point that the temperature is intentionally allowed to fall to is 50°. Occasionally the glass in the morning has gone down to 45°, but this was after a very cold night, and I have taken every care not to have it repeated, for I found this lowering to 45° was what the Saccolabiums did not like, but singularly enough neither the Vandas, nor the Aërides, appeared to suffer from it. The maintenance of a temperature from 50° to 55° is aimed at, and to this they have been subjected for the last six years during the resting months, and they are what you saw them. They stay in this house till about the last week in December, by which time we have started our early vinery some two or three weeks; and the night temperature here will be about 50° to 55°. Into this house the Vandas, Saccolabiums, Aërides, Cœlogynes, and some of the Dendrobes are moved. Here they are kept until the mid-season-house affords conditions to allow of their being transferred to it, and in this they remain till the late vinery, in which are grown Muscats and late black kinds is started, when they are put in it, and kept hung up, with their heads as much exposed to the light as the foliage of the Vines will permit of, through the summer, of course, subject to the conditions of heat, air, and moisture given to the Vines.

"During the time I have grown these plants in the vineries it has been a question with me whether what are considered to be the hottest of the East Indian Orchids could not be induced to grow and flourish in houses and temperatures which have hitherto been generally supposed not suitable for them. In the vineries (with us at least) they are subjected to a drier and more airy atmosphere than they receive in Orchid-houses proper, and in this, I think, partly lies the elements of success. Another and very important point, and one I think which should not be lost sight of, has, I believe, a bearing on their well-doing, namely, all through January, February, and March, they are subjected to a long period of direct sunlight—feeble sunlight, no doubt—yet very bright at times during March. In April the Vine leaves are sufficiently developed to cover the roof glass, and give the necessary shade. During the exposure to the sun the leaves get quite browned, and this exposure, I believe, helps to consolidate the tissue and fibre of the leaves, and gives them that stiff and rigid feel in the hands which they always have with us. The exposure, I think, has a great deal to do with their free flowering.

"The other cultural details are as follows:—About March or April the baskets are cleared out without disturbing the plants. Every bit of moss, &c., is carefully removed from amongst the roots, the baskets are then thoroughly washed in a tank of tepid water, every bit of decaying matter being removed from the roots. After this the baskets are re-filled with live sphagnum, crocks and charcoal, nothing else being used."

A number of Dendrobes of various kinds, and other species of Orchids, are also growing thriftily, the appearance of the growth showing at a glance that they are sure to flower well. These Orchids afford another instance in confirmation of that which I have long urged, that no one need hesitate growing many kinds of Orchids in houses with other kinds of plants. Some of the best examples of hot and intermediate kinds I have seen were grown along with a collection of the usual stove plants; but it is something altogether new to find that the Saccolabiums named can be so well grown in vineries in the way described. *T. B.*

# Florists' Flowers.

## THE AMARYLLIS.

"No better time than the present to prepare for the future. Nature sets us the example; in this time of rest is the renewal of strength." This is the time of rest for the Hippeastrum family, but it is also a time in which the mind of the cultivator must be occupied with his plants. There are some who require to be constantly reminded of their duties in this respect—they begin to take an interest in their plants when it is long past the time that they should have received some little, but absolutely necessary attention. The small seedling plants raised from seeds sown in August should not be dried off, but they should not be grown in a very high temperature in bottom-heat. The pots may be plunged or not, and in either case but little water is required with a temperature of from 50° to 55° at night. Air may be admitted freely by day when the weather is fine. The two-year-old plants, if they have been plunged in the tan beds so that the rims of the pots are below the surface, will require no water during the months of October, November, December, and January. They will not lose their leaves quite so much as the old plants, but all the outer ones must be removed; a few of the centre ones will remain on until the time of repotting in January. The old flowering bulbs of the seedlings, or named varieties, are now rapidly losing their leaves, indeed, they will all be removed during the next week or ten days. These old bulbs require quite a greenhouse temperature with plenty of air, and no artificial heat, except enough to keep out the frost. No water whatever should be applied to them. Our potting soil has been prepared, ready to repot the plants early in January. I fancy that it is in a better state for potting when it has been mixed together for two or three months before it is used; the manure becomes incorporated with the soil, and in that state is preferable for potting purposes. The best potting soil is one of three parts loam, one of peat, one of leaf-mould, and one of decayed manure. Some sand should also be added to the compost. When the time comes for repotting, shake the old potting soil from the roots, and pot carefully, as the roots are easily injured. The bulbs should stand up half out of the soil when the potting is finished. Plunge the pots to the rims when the bulbs are all potted, and do not give any water to the roots until it is seen that they have started to make their growth. The bottom-heat should be gentle at first and the temperature of the atmosphere about 45° to 50° at night. *J. Douglas.*

# The Flower Garden.

At this season of the year every attention must be paid to neatness and order, and now that all the leaves are down from the trees, the beds should be picked over, and leaves and rubbish removed, and the beds picked over lightly, levelled, and the soil made firm round the plants, and a thin layer of leaf-mould or cocoa-nut fibre placed all over the bed; about 2 inches thick will be sufficient for the purpose of protecting the plant from frost; and all bulbs should be treated in the same way.

Spring-flowering plants have now established themselves, and most of the beds are well covered.

Shrubberies should have attention, and such work done as digging them over, thinning, and transplanting any shrubs or trees where required, pruning the shrubs and trees when getting too large, or crowding others; and cutting out all dead wood. Hedges should be clipped, climbers pruned, tied, and trained, protecting any plants about which there is doubt as to their hardiness, such as Chamærops humilis and C. Fortunei, Bamboos, Phormiums, and Aralia Sieboldii.

Cannas, if left in the ground, and bulbs of Gladiolus, should be protected with mounds of leaf-mould; a little bracken or cocoa-nut fibre refuse, 12 to 16 inches thick, placed above and around them; the Chamærops should have their leaves tied close together, and Fir boughs stuck and tied round them, will most effectually protect them from injury by frost.

Rockeries should be put in order, and the half-hardy Ferns protected by placing round each leaf-mould with bracken over, but by no means should the dead fronds of the Ferns be cut off or leaves removed till spring, as these afford great protection. *W. Smythe, Basing Park, Alton.*

# Plants and their Culture.

## STOVES—TEMPERATURES.

At this quiet season the tempearatures by night and day can be lowered; where the usual collection of stove plants are grown, from 63° to 65° may be taken as a suitable night temperature, a lower grade than this should only be adopted during very cold or windy weather, then it will be an advantage to the plants in general by preventing exhaustion by too much evaporation by the overheating of the pipes, and at the same time save fuel. A lower temperature than 63°—65° would in mild weather be found insufficient to dispel moisture which, if allowed to remain on the plants would soon cause the foliage or flowers (as the case may be) to suffer; this in the case of a low temperature would be discerned the first thing in the morning, the plants being as it were bathed in moisture. According to the state of the weather the temperature for the day may rise 5°, 10°, or 15°, admitting fresh air when a rise has been obtained but closing early at all times. Damping down or syringing must be done with discretion—during dull or rainy weather but little will be necessary, a slight bedewing with the syringe being sufficient, besides sprinkling the floors. If it is found necessary to syringe heavily for any special purpose, such as the dislodgement of thrips or fly, then take advantage of a bright day and have a little extra heat in the pipes so that the moisture may soon be got rid of.

Crotons would be found an exception to the above rules, as they do not suffer from an excess of atmospheric moisture, provided the temperatures we have quoted are maintained, on the other hand it appears to be suited to their requirements. With a little management, these and kindred subjects that require a trifle more attention in this direction, can easily be accommodated.

Gardenias for flowering at this season of the year are better managed if a heated pit can be set aside for them, where the warmth and moisture necessary to the production of flowers can be given them. We have some large bushes that have stood the whole of the autumn in a Peach-house; these have been transferred to the stove, where they will produce occasional blooms that will provide us with variety in coat flowers. *J. Hutson, Gunnersbury House, Acton.*

# The Fruit Garden.

Now is a good time for cleaning any trees that may be infested with scale or mealy-bug. The following mixture may be used:—2 oz. of flowers of sulphur, 2 oz. of soda, ½ oz. of shag tobacco, and a small quantity of lime, put in a saucepan and boiled in a gallon of water for a quarter of an hour. Allow it to settle, pour off the clear liquid, and therewith syringe the trees well once or twice during the winter. It will keep good for any length of time. I have also used parrafin mixed with water, say a wineglassful to a gallon of water. This will clean the trees if repeated while growth is at rest. Another plan that I have found to answer, is to syringe the trees four or five times with strong manure water as collected in a tank from the cow-shed.

### Bush Fruit.

Gooseberries and Currant bushes may now be pruned, and instead of cutting off all the young shoots and only leaving a few eyes, I would advise plenty of young, well ripened shoots to be left. To prevent bushes getting crowded, a few large branches should be cut clean away from the bottom every year. This would in a certain measure renew the bushes year by year. Since we adopted the plan of dusting the bushes over with soot and lime three or four times during the winter, and annually dress the ground under the bushes with rotten dung, we have had hardly any of that destructive pest the Gooseberry moth or caterpillar.

### Renovating Old Pear Trees.

In old kitchen gardens there is often seen fine old established Pear trees trained in the most faultless manner, and a good deal of labour expended on them every year, but as a rule they only produce an annual crop of young shoots and leaves. I once had charge of such a Pear wall; it faced the east, and the soil was a deep rich loam, resting on clay. Young pyramidal trees in the gardens bore excellent crops as a rule, but the trees that cost most labour and attention hardly ever produced any fruit. Most of the trees were good varieties, so I determined to retain them; had they been worthless varieties I should have preferred grafting them. The plan I adopted was as follows:—Early in the autumn a trench was opened 3 feet from the main stem of each tree, and all the roots extending outside of this were cut clean away, with the exception of those extending along the wall; these were preserved as far as possible, and a trench was cut under each tree right up to the wall, so as to make sure no tap roots were left. Before the soil was filled in each tree was slightly moved away from the wall, to allow fresh soil being placed between the roots and the wall. The first season few of them made much growth, and one or two hardly any leaves, but the second season most of them were covered with blossom, so much so that I had some of it thinned out to prevent the trees being exhausted. During the summer the trees were kept well mulched, watered, and syringed three and four times a week when the weather was hot and dry. Now is a good time to perform such operations, and to any one in charge of unfruitful trees I can only recommend them to try the above plan, and if carried out with ordinary care success is sure to follow. Plums, Apples, and Cherries may be treated in the same manner. Another simple plan to adopt with unfruitful Pear trees is to cut about 6 inches of the bark off half way round the stems just below the ground. I have known this plan adopted with success.

### Wall Trees.

Cherries, Plums, and Pears should all be nailed on walls; Peaches and Apricots are better left at present. Old trees in orchards should be gone over and all useless branches thinned out to allow sun and air to act on the fruit. Established orchards should also be looked over, and see that the roots are not choking any of the drains. If the water is allowed to stand for any time about the trees it will kill all the young roots, and so render the trees unhealthy and the fruit small and almost worthless. *J. Smith, Mentmore, Bucks.*

# The Kitchen Garden.

The roots, such as Salsafy and Scorzonera, should be treated the same as Chicory roots, *i.e.*, laid in thickly together in well-drained soil, and covered with leaves and litter when necessary. White Turnips, large enough for use, should be collected, and placed out of reach of much frost.

Celery which has made much growth since the last earthing-up should again have more soil placed around it. Stable litter may be used to prevent the ridges becoming frozen through, but it should not be allowed over the foliage; dry bracken or clean straw is best for this purpose. However, such protection (over the foliage) will not be required unless the thermometer should register more than 10° or 12° of frost.

### Seeds.

The remnants in the seed-drawers should now be looked over, and any seeds of last year's purchasing (of which sufficient remains to repay the trouble) may now be tested in order to ascertain their respective germinating powers. Fifty seeds of each should be sown in 60 pots, or larger, in a gentle heat, and when grown high enough the seedlings counted, the results entered down for guidance and reference when ordering next year's supply. Probably many will be good enough for next spring sowing. *G. H. Richards, Somerley.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Dec. 7 | Sale of 5000 Lilium auratum, Tigridias, &c., at Stevens' Rooms.<br>Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| TUESDAY, | Dec. 8 | Royal Horticultural Society: Meeting of the Fruit and Floral Committees, at 11 A.M.; Scientific Committee at 1 P.M., at South Kensington. |
| WEDNESDAY, | Dec. 9 | Sale of 4000 Lilium auratum, Plants, Roses, &c., at Protheroe & Morris' Rooms.<br>Sale of Roses, Fruit Trees, Shrubs, Border Plants, and Dutch Bulbs, at Stevens' Rooms. |
| THURSDAY, | Dec. 10 | Sale of Valuable and Imported Orchids, from Mr. F. Sander, St. Alban's, at Stevens' Rooms.<br>Great sale of Dutch Bulbs, at Protheroe & Morris' Rooms.<br>Clearance Sale of Glass Erections, Plants, &c., at the Park Nurseries, Finsbury Park, by Protheroe & Morris. |
| FRIDAY, | Dec. 11 | Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. |
| SATURDAY, | Dec. 12 | Sale of Roses, Fruit Trees, Shrubs, Border Plants, and Dutch Bulbs, at Stevens' Rooms.<br>Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

IN our last issue we had occasion to comment upon the retirement of Sir JOSEPH HOOKER from official duties, and we took the opportunity to allude to the great value of his services to botanical and horticultural science, and to the establishment at Kew in particular. It is in some way significant that Sir JOSEPH HOOKER'S retirement occurs at the same period that Professor HUXLEY finds it incumbent on him also to seek relief from the pressure of official duties.

The public career of these two eminent leaders in Science extends in general terms over the last half century, and in framing a retrospect over that period Professor HUXLEY, in vacating the Presidency of the Royal Society, took occasion to review the progress in intellectual and material welfare that has been made during that period. He had no difficulty in showing that the vast improvement in almost all departments of knowledge, and in their application to the wants of mankind had been made as a direct consequence of the increase in what is termed scientific knowledge. We will not do more than point out that scientific knowledge is essentially not different from any other form of intellectual development, but it is allowable to point out that the pursuit of truth, which is the aim of all honest seekers after knowledge, has been far more advanced by scientific methods familiarised to us by the labours and generalisations of FARADAY, of GROVE, of JOULE, of HOOKER, of HUXLEY, to say nothing of DARWIN, than by the haphazard guesses of party politicians, tinctured as they must be in all cases by interested considerations whether of party or person. The facts are absolutely indisputable. No one who lives in this present year of grace and who compares the resources, the necessities, the comforts at his command, with those which were at the disposal of his forefathers, can for a moment doubt that they have been secured to him as a direct consequence of the progress of science. No one will dispute the advantage of literary culture, but any one may see for himself that those advantages might have been secured in the past, and might be secured in the future, far more speedily and efficaciously by the application of scientific methods. Take, for instance, the question of practical politics, which are disturbing the country at the present moment. There are principles at stake; there are facts to be weighed and considered. How do our politicians set about the task before them? Do they not in the main either ignore great principles, or does not each party claim them as its own special inheritance, and assume, nay, unblushingly assert, that they are not the property of the other?—and if they condescend to consider the facts at all, do they not distort them, now in this direction, now in that, solely for the sake of personal or party advantage? Is this our boasted science? Is this the result of the education of our public schools and universities? To a large extent it is. We cannot, especially in the throes of a General Election, eliminate the purely selfish element—man is but man in such matters; but when calmer times come and intellect is allowed free play apart from prejudice and passion, shall we not have reason to deplore this potentiality of active ignorance? Shall we not ask ourselves whether such exhibitions of mental distortion as we are now witnessing on one side and on the other are not a disgrace to our system of education? The crudest theories and the wildest hypotheses are put forward on this side and on that for the acceptance of the multitude, as if they were established facts and well grounded generalisations. Would any man of business—would any practical gardener—carry on his daily work in such a way? What must be the result if he did? Men of science are no more free from human infirmity than their fellows. They share the common instincts of self-preservation with their fellows—they are swayed by the same passions, the same sympathies, the same antipathies as their fellows; but in their own special pursuits they know to a greater or less degree how to eliminate such "accidents" from the general results. Those who do so to the greatest extent are the leaders of Science, those who do so to the least are unworthy labourers indeed.

Admitting, then, that while men remain men, the selfish personal element must always, to some extent, mar and soil the purer pursuit of truth, we may ask whether this evil is to remain as it is, or to become a diminishing quantity. Too obviously the heretofore prevalent systems of education have not sufficed to lessen the mischief. Is there any hope that the more scientific training of our youth, whether it be in literary culture, in art, or in technical industry will in the future prevent or lessen the evil? It is too much, perhaps, to expect that it will prevent it, but we may surely indulge in well-grounded hopes that it will mitigate and lessen it. What has been the secret in these later years of the rapid advance in our material benefits? What has been the secret of the rise of this nation—the decadence of that? Clearly in both cases the increase of knowledge, the most ignorant have had to go to the wall.

The philosophers and schoolmen of the middle ages went round and round without adding much to the stores of mankind, either mentally or physically, because their science was an affair of mental gymnastics, not a solid advance based upon conscientious investigation of facts and phenomena. It was not a steady progress from the known to the unknown, but a kaleidoscopic shifting of particles already less or more well known. Now is not this pretty much the character of practical horticulture at the present day? Our forefathers have gathered for us a large amount of cumulated experience. We add to it by our own personal observation, but there we stick. If we open a horticultural book of the year 1885 shall we not find in all matters outside common routine and daily practice the same theories—save the mark!—the same baseless figments, the same wild hypotheses as are to be found in the writers of a century ago? We make no aspersions on those writers. They were up to the mark in their day, but they are of necessity far behind the requirements of the present.

The rank and file of British horticulturists and agriculturists, however, might, with few exceptions, just as well be living in 1775 as in 1885. The reason for this is to be found in the utterly inefficient system of education doled out alike to masters and men in their degree. Ask any successful horticulturist what he owes to his education, and what he owes to his own observation and the pressure of circumstances? How much labour might have been saved him, how much his perceptions might have clarified and widened had he had the advantage of a training in habits of accurate scientific observation and correct induction. Books are valuable—most valuable—but of what use is the information obtained from them as compared with that which is gained by the earnest student as the result of practical work rightly directed and carried out with scientific method. It is one thing to learn in books and from the mouths of teachers that plants feed by their roots and their leaves, it is vastly different to find out and prove the fact for one's self. In the one case the talent is laid out to compound interest, in the other it is at best an investment of dead capital—a coin subject to rust and deterioration.

Of HUXLEY'S work as a master or as a teacher in science, whether to experts or to beginners, it is not needful for us to speak here. Of his exertions to secure a higher type of practical education—practical in the best sense of the word—we would wish to speak with all honour and respect. No matter who may succeed him in the tenure of NEWTON'S Chair at the Royal Society, the verdict of posterity will assuredly be, that no one of his predecessors has occupied it more thoroughly to the advantage of his fellow men—no one with a more disinterested search after truth than he who on Monday last vacated the chair in favour of the eminent mathematician, Professor STOKES. And to the advocates of literary culture as the one thing needful we may ask, Who among modern writers is a more perfect master of literary style than THOMAS HUXLEY?

—— TAXED *versus* UNTAXED TRADING.—We publish the following communication received from our old correspondent, Mr. JAMES ANDERSON, of Meadowbank, Lanarkshire, as it touches on matters in which all political parties must feel an interest. He says:—

"I asked each of the candidates for the North-east division of Lanarkshire the following question—'Would the candidate be prepared to support any well considered scheme for rating and taxing such landlords as sold their spare produce in or about their gardens on the same footing as those tenants who pay rent, rates, and taxes, and have to compete with them in the open market?'

"Mr. CUNNINGHAME, of Craginels, replied that 'landlords were taxed on their incomes, and he presumed they would pay accordingly, but that he scarcely considered the question a national one.' Mr. DONALD CRAUFORD replied that 'he was not aware of the irregularity referred to, but if it exists (and you ought to know) I should be in favour of removing it.'

"I did not ask the question from any querulous disposition, but with the view of calling attention to, and if possible correcting, the anomaly. None of us in the trade have any right to call in question what our fellowman may do with what belongs to him, be he a duke or be he a peasant; but I don't see why there should not be some measure framed whereby such a seller should not only pay as a landlord, but as a tenant as well. If he chooses to sell his goods and compete with the legitimate trader, who puts up his sign and advertises his goods, surely in common fairness, not only should he pay the State the direct taxation on what he sells, but he should be rated on the sum for local burdens as well. I don't say it is the fault of the parties; no doubt many or most of them would willingly pay if the taxes were imposed. I join issue with Mr. CUNNINGHAME in asserting that it is not a 'national' question. I think it is; and it is becoming more and more so every day, and I look to the *Gardeners' Chronicle*, as the leading paper of its kind, to open its columns to such contributions as will eventually end in justice being meted out and the grievance swept away."

—— ATLAS OF PLANT DISEASES.—Dr. O. E. ZIMMERMANN is publishing under the title of *Atlas der Pflanzenkrankheiten*, a series of photographic illustrations representing the microscopic appearances of the fungi affecting plants. An explanatory text accompanies the plates. The photographs are direct from the microscope, and are mostly very clear. It would be a convenience if the divisions of the micrometer scale were in future photographed with the objects. The work may be had of Messrs. WILLIAMS & NORGATE.




FIG. 163.—EUCHARIS MASTERSII: SECTION OF THE FLOWER AND POLLEN GRAINS. (SEE P. 722.)

—— "VENETIAN" HOUSES.—We are informed that Messrs. SKINNER & BOARD, horticultural builders, Bristol, have received an order from New York for a range of their "Venetian" flower and fruit houses, the clever contrivance of whose ventilation was noticed in the *Gardeners' Chronicle* some months since.

—— THE SURVEYORS' INSTITUTION.—The next meeting will be held on Monday, December 7, when a paper will be read by Mr. A. D. WELLS (Associate), entitled "The Cost of Production and the Value received for our various Farm Crops." The chair to be taken at 8 o'clock.

—— NATIONAL AURICULA SOCIETY.—NATIONAL CARNATION AND PICOTEE SOCIETY.—The annual general meeting of the above Societies will be held, by permission of the Council of the Royal Horticultural Society, in the Conservatory, South Kensington, as soon after 12 o'clock as possible, on Tuesday, December 8. The business of the meeting will be, the election of officers and committee, the receipt of the Secretary's and Treasurer's report, the election of judges for the ensuing year, and any other necessary business as may pertain to the annual general meeting.

—— "BULLETIN DU CONGRÈS INTERNATIONAL DE ST. PETERSBOURG."—In this volume we have the proceedings of the Botanical Congress of St. Petersburg in May, 1884, and the full text of several of the memoirs presented to it. These latter are as varied in substance as they are in form, being concerned with many points of physiological and systematic botany, and written in French, Russian, German, Spanish, and English. We think the plan adopted in 1866, and partially followed also on this occasion, of requesting each author to give an abstract of his communication, might well be adopted on all similar occasions, and, moreover, that the abstract should be written in Latin or in French, as the languages most likely to be understood by scientific men of all nationalities. If this were done there would be less objection to the publication of papers in the language of the authors. In the present volume there is a paper in Spanish, which is not known to many, and there are several in Russian, which is even more incomprehensible. Among the papers of special interest to horticulturists in the present volume are Mr. ELWES' paper on Lilies, Mr. LYNCH'S communications on the culture of bog plants, Professor WITTMACK'S historical sketch of the genus Begonia, M. NIEPRASCHK on the cultivation of large Palms in winter gardens, and M. PYNAERT'S note on the influence of light. On some of these points we may have occasions to comment on a future opportunity.

—— DR. ASA GRAY.—A Cambridge [U.S.] correspondent writes that on November 18, Dr. GRAY was the recipient of a very handsome silver vase, the gift of 180 North American botanists, who availed themselves of the seventy-fifth anniversary of Dr. GRAY'S birth, to testify their gratitude and esteem. The vase is in *repoussé* work, the decoration including representions of such plants as Grayia, Solidago, Asters, Shortia, Lilium Grayi, and others, with which the Doctor has been specially associated. The presentation was managed by some young botanists, and was an entire surprise to the recipient. Nearly all those who participated in the memorial gave personal expression of their love and gratitude to the master at once so genial and so profound, and as much esteemed on this, as on the other side of the Atlantic.

—— UNSEASONABLE FOLIATION.—An instance of the influence of the recent weather upon trees may be cited in the case of some Lime trees coming into leaf on Friday, November 27. Doubtless the warm damp autumn which followed upon the exceedingly dry summer was the cause of this. The first sharp frost will kill these untimely shoots. It is necessary to remark that not one Lime tree was thus in leaf, but quite a dozen.

—— "HISTOIRE DES PLANTES."—The last of M. BAILLON'S series of monographs contains the Campanulaceæ, Cucurbitaceæ, Loasaceæ, Passifloraceæ, and Begoniaceæ, profusely illustrated, as usual, with accurate and beautifully executed woodcuts. In associating the Passifloreæ with the Cucurbitaceæ, in spite of the different relative position of the parts of the flower and the presence of albumen in one case and its deficiency in the other, not to mention other matters, M. BAILLON does but follow the example of most of his predecessors. The collocation of these two orders, however, next to Campanulaceæ, will be received with great astonishment. Of course, so expert a botanist can produce plenty of reasons for this approximation, but he can hardly expect that his readers will attach the same degree of validity to those reasons that he does.

—— NATIONAL DAHLIA EXHIBITION (NORTHERN SECTION).—This enterprise, which would have been carried out by the committee of the Grand Yorkshire Gala, under the management of Mr. JOHN WILSON, the Secretary, had an adequate response been received to the circular issued by that gentleman, is, it is feared, doomed to failure. The committee asked for donations and subscriptions to a guarantee fund, and a sum of not less than £400 was named. A circular was prepared and issued to those likely to take an interest in the proposal, but the responses have proved so insignificant that there is no prospect of carrying it out. No assistance has been rendered by any one interested in the project. Mr. WILSON deserves high praise for his exertions in the matter. That he does feel some disappointment there can be no doubt; but if the cultivators, exhibitors, and admirers of the Dahlia are slow to support, there is no help for it but to abandon the proposal. More's the pity, for the management of the proposed show would have been in hands trained by long experience to make such things conspicuous successes.

—— DR. TRIMEN.—From the *Indian Agriculturist* we learn that Dr. TRIMEN has had a very interesting botanical trip through portions of the North Central, Eastern and Central provinces of Ceylon, working more especially along the sides and within the triangle formed by the roads from Dambulla to Anaradhapura, thence to Trincomalee, and from Trincomalee back to Dambulla. Dr. Trimen visited Pollonaruwa and Mineriya lake, which he thought most interesting; and altogether this trip has more then ever impressed him with the great variety of country, scenery and resources possessed by the island, Scarcity of water at some of the stopping-places was the chief drawback to comfort encountered, and no one can form a true idea of the many ways in which water is indispensable to the convenience as well as comfort of living, until they find absolutely none to be got for miles around their habitation! What struck the travellers was the absence of "wells": where such existed the villages are comparatively independent; and as wells are much easier made than tanks, we may ask why are wells not found at every village, and indeed every possible stopping-place on the roads referred to? In India the authorities apparently pay a good deal more attention to well-digging than is the case in Ceylon, so far as we can judge.

—— DIFFICULTY OF BREATHING CAUSED BY PELARGONIUMS.—The *British Medical Journal* for November 28 contains a note on difficulty of breathing produced by Pelargonium grossularioides, by Mr. G. BIDIE, Deputy Surgeon-General, Madras. Mr. BIDIE says that the odour which the plant gives out after rain, &c., is agreeable to most people, but that in the case of a lady who came under his observation it immediately produced dyspnœa. As the plant was in flower it was thought the pollen grains caused the trouble, as in hay fever, but on experiment it was found to be due to the effluvia of the leaves. Whenever plants were brought near the lady she was affected by them; and when out driving or walking she would announce the presence of the enemy when the plant could not be seen by the eye, and whilst other people could notice no smell until their attention was directed to it. This is, therefore, a new example of an "idiosyncrasy of olfaction."

—— USEFUL WOODS IN AMERICA.—In a report on the trade and commerce of Astoria, North America, it is stated that the chief forest trees of the district are Hemlock, Spruce, Fir, and Cedar. The former has been used only to a very small extent for its bark for tanning purposes. Spruce is used where lightness is wanted, but it must be kept from the wet. Salmon cases are made from it. Fir is the most generally used of all the different kinds of wood; its strength, durability, and care with which it is manufactured, brings it into use for all the general purposes of house building, boat building, planking of roads and bridges, and piling for the support of bridges and buildings over water, ships' spars and deck planking, some thousands of feet of selected timber being sent to New York for trial for this purpose. Cedar wood is used in finishing where lightness and ease of working are wanted. It is a very durable wood, lasting for years as fence posts, house sills, window jambs, &c.; it is also much used as finishing in river steamer cabins, being light; it is, however, very brittle.

—— BOOKS AND PUBLICATIONS RECEIVED.—*Life on the Farm: Animal Life.* By Professor BROWN (BRADBURY, AGNEW & Co.).—*Indigenous Flowers of the Hawaiian Islands.* By Mrs. FRANCIS SINCLAIR, Jun. (SAMPSON, LOW & Co.).—*Report of the Smithsonian Institution* (Washington: U.S.A. Government Printing Office).—*Live-Stock Journal and Agricultural Gazette Almanac*, 1886 (VINTON & Co., 30, Hampstead Road, London).—*Grevillea* (WILLIAMS & NORGATE).—*La Belgique Horticole Annales de Botanique et d'Horticulture* (Agents: DULAU & Co., 87, Soho Square, London).—*Third Annual Report of the Board of Control of the New York Agricultural Experiment Station for* 1884 (Albany, New York: WEED, PARSONS & Co.).—*The Carnation and Picotee.* By Mr. E. S. DODWELL.

—— GARDENING APPOINTMENTS.—Mr. JAMES ARNOLD has been appointed Gardener to W. G. CRUM, Esq., Mere Old Hall, Knutsford, Cheshire.—Mr. EDWARD MENZIES, of Chatsworth Gardens, has been appointed to succeed Mr. LEANEY, as Head Gardener to THOMAS CHISTY, Esq., F.L.S., Malvern House, Sydenham.

## EUCHARIS MASTERSII.

THIS new species of Eucharis has been shown several times during the past season at the meetings of the Royal Horticultural Society at South Kensington, Mr. Bull showing it twice, October 13 and 14, and November 10—on the last occasion a beautiful mass of well grown plants in a large pan having been brought from the Chelsea Nursery. On the first occasion that Mr. Bull showed it a First-class Certificate was awarded, the plant appearing to be a valuable addition to the genus as a decorative subject.

We take the following from the *Botanical Magazine* for August, 1885, relating to this plant:—"This new Eucharis, which at the request of Messrs. F. Sander & Co., of St. Albans, has been named after Dr. Masters, F.R.S., is intermediate between the two finest species already known, E. grandiflora, Planchon et Lindley (plate 4971); E. amazonica, Hort.; and E. Sanderi, Baker (plate 6676). It has entirely the same habit and leaf, and the same large pure white perianth-limb, but is different from both of them in the staminal cup, of which the free portion of the present plant forms a narrow but united collar-like rim to the perianth-tube, with two deltoid teeth between the base of each filament. The bulb is globose, 1½ inch in diameter. Leaves distinctly petioled, oblong, acute, just like those of E. grandiflora and Sanderi in shape and texture, 8 or 10 inches long, 4 or 5 inches broad, bright green on the upper surface, pale green beneath, with fifteen or sixteen curved veins on each side between the midrib and the margin. Scape slender, glaucous, terete, under a foot long. Umbel two-flowered in the specimen drawn [but see our figure, p. 721]. Pedicels very short, valves of the spathe small, green, lanceolate. Ovary green, oblong, trigonous. Perianth-tube 2 or 2½ inches long, cylindrical in the lower two-thirds, infundibuliform in the upper third, with a throat 1½ inch in diameter. Limb pure white, 3 inches in diameter. Segments ovate, much imbricated. Staminal cup striped with green, adnate to the tube of the perianth, except a narrow collar-like rim which has a couple of deltoid teeth between each filament. Style reaching nearly to the tip of the perianth segments, thickened and obtusely three-lobed at the stigmatose apex."

This is the technical description drawn up by Mr. Baker, to which we may add, that for practical purposes its smaller flowers will render it specially useful for bouquet and other decorative work. The culture will probably prove to be the same as for the better known grandiflora. (See fig. 163, p. 721.)

## HOW NOT TO DO IT.

THE grand display of designs in immortelle work exhibited by Eugenie Weiss, at the flower exhibit at the Pennsylvania State Fair, is worthy of special mention. Nothing like it was ever seen in this or perhaps any other country. A *fac simile* of the design made by this enterprising young florist for the Grant obsequies, and presented by the Mead Post, of Philadelphia, occupied a prominent place in the display. In the contest for the best wedding canopy of natural flowers Hugh Graham was decidedly first. Selaginella densa was the ground-work, with the monogram "H. G." in the centre; a "true lover's knot" and a four-leaved Clover on either side were cleverly wrought, and the whole was bordered with double rows of maroon Dahlias and a chain of pink Balsams. The canopy proper was made of Smilax, and from the extreme edges were suspended seven bells (why did he not make an octave?) on which were the words "love, happiness, joy, health, wealth, long life, and peace," in purple immortelles. This, it must be confessed, detracted somewhat from the general effect, the purple immortelles giving it an unmistakably funereal appearance; pink or red lettering would have answered the purpose much better. The ropes were made of Hydrangea paniculata, and were draped in festoons and run through a loop at the back. For the best three funeral designs the contest was between Craig & Bro. and Hugh Graham & Co. The first premium was awarded to the latter firm, but it called forth some comment. Graham's were a trifle newer in conception, but were no more appropriate, nor so well executed as Craig's.

For the original funeral design there were several competitors. Among the best were an hour-glass, "the broken pitcher at the well," and the life-boat "safe in the haven." The latter was from Hugh Graham & Co., and was given first premium. The "well and the broken pitcher" came from Jos. Kift & Son, and it received second premium; it was beautifully worked out and attracted a great deal of attention, albeit the idea was somewhat farfetched as a funeral design; but there is no mistaking the fact that it was a neat piece of work. For second place in the competition for dinner-table decoration, Chas. Fox had a very pretty design. The centre was a miniature lake, in which were live fish, sporting in real water, and fussy ducklings moved to and fro on the surface; at each end of the table were two cornucopias made of Hermosa Roses, from which were emptied in bounteous profusion fine Perle Roses; every favour was different—a slipper, a fan, &c. Faust & Crawford came in third, with three large plateaus. The centre one was made after the style of two four-leaved Clovers, each leaflet being made in solid colours, rest-on beds of Adiantums and other choice Ferns. Hugh Graham & Co., fourth premium, one of the most elaborate designs ever seen at any exhibition, but it was rather too stiff and formal for the purpose for which it was intended. It occupied the whole length of the table in an unbroken line except a few inches of the edge—barely leaving sufficient room for plates. No space was left for candelabra, or other paraphernalia necessary to complete a dinner or luncheon table. Although it was faulty in some respects, it was acknowledged on all sides to be a very fine piece of work, and reflected great credit on its designers. Selaginella densa formed the basis of operations, through which was delicately traced the stem of a compound leaf, presumably a Rose leaf; the leaflets were made of white Carnations, with Carnation Crimson King to define the veins, at one end of the table, while Violets were used at the other end; all were veiled with the misty fronds of Adiantum gracillimum. The blossoms were composed of four petals, worked out in solid colours. In the centre was a square plateau of delicate Adiantums and fancy foliage plants. The whole was edged in ribbon border style with fine Rosebuds. Each of the other three designs contained Orchids, but this one had none, otherwise the flowers in general were good, and the Roses especially were very fine.

Adiantums and other good Ferns played a very important part in all the best work throughout the entire exhibition, and are certainly destined to become used more and more each year until they shall occupy that position to which they are entitled. There was a pendent design sent by Joseph Kift & Son, and a piano by W. A. Wyatt, which was nicely made. There were also windmills and other incongruities, made of a few flowers and a great deal of woodwork, but the least said about these the better. *The American Florist.* [Surely there is work cut out for our contemporary to improve the public taste. ED.]

## Notices of Books.

**Year-Book of the Scientific and Learned Societies of Great Britain and Ireland, 1885.** Charles Griffin & Co., 1885.

This Year-Book purports to give an account of scientific work done during the year 1884, a record of progress, and a convenient handbook of reference. It contains a list of the several scientific and literary societies, metropolitan and provincial, with their officers, and an indication of the papers and memoirs published during the year. The utility of such a publication is unquestionable, and every effort should be made to secure completeness and accuracy.

An index of authors and of subjects might advantageously be given. The primary object of the majority who use this book is not to ascertain what has been done at or in a particular society, but what has been published concerning a particular subject.

The Royal Horticultural Society is represented here only by the list of some of the principal officers, while the very numerous communications made to its Scientific Committee, and the records of trials and experiments made at Chiswick, are entirely omitted. This omission can hardly be charged to the Editors of the present volume, neither can it be attributed to the fact, that the Society's published records are of a sadly intermittent character, for the very next paragraph is devoted to the Bedford Park Natural History and Gardening Society, in which we find twelve entries of papers read, but no indication of any official publication.

**Fruit and Fruit Trees, &c.** By Leo H. Grindon. Manchester: Palmer & Howe.

"This volume claims to be no more than an amateur's contribution to the literature of the very large and varied subject of fruits and fruiting plants." This introductory statement is further limited by the restriction of the subject-matter to those fruits "which are either produced in Great Britain, or which are imported from foreign countries as established articles of commerce." Mr. Grindon treats his subject as an amateur, that is, not as a practical fruit grower, but, unlike some so-called amateurs, he takes pains to be accurate in his statements, and does not merely confine himself to the task of writing a pleasant book. The latest accessible information is pressed into the service, as an instance of which we may mention that the main results of the Apple Congress are duly noted, though, oddly enough, the official record drawn up by Mr. Barron, and which will form the text-book of Apple information for years to come, is not specifically mentioned. Of course, the corresponding results of the Pear Congress are too recent to have been inserted in this volume, but in any future edition the outcome of the Pear Congress must also be alluded to. Reference, moreover, should be made to the beautiful *Herefordshire Pomona*, so recently brought to a close, and which Mr. Grindon might have worked as a rich quarry of information on the subject on which he treats. Mr. Grindon lightens his pages with scraps of literary gossip and philological lore, and in doing so his literary skill is apparent, for while they serve his purpose they are strictly pertinent to the subject in hand, and are not dragged in to show the extent of the author's reading, or the capacity of his note-books.

The source of "Jordan" Almonds might naturally be inferred from the name applied to the nut, but erroneously so, for Mr. Grindon tells us the name is the result of a misunderstanding of the name given "in the *Promptorium Parvulum*, the celebrated old English-Latin Dictionary, compiled in 1440, by Geoffrey, the grammarian, viz., 'Jardyne almaunde, amigdalum jardinum,' literally a cultivated or garden Almond."

Under the heading of the Grapes we are reminded that England raises Grapes for export. "It is not generally known, but none the less one of the curiosities of modern commerce, that Copenhagen and St. Petersburgh are largely supplied with Grapes from Yorkshire, Grapes grown in the great vineries at Gorwick Hall, near Goole." This we suppose is an instance of trading acceptable to fair and free traders alike. Mr. Grindon's book is like ripe fruit, seasonable: and those who are deliberating as to the choice of a Christmas present to the intelligent schoolboy of the upper forms, may have their embarrassment satisfactorily ended by the purchase of this book.

## NOTES FROM NURSERIES.

MESSRS. H. CANNELL & SONS, SWANLEY.—Supposing it to be possible for one not knowing the season of the year to be dropped at the present time into the middle of Messrs. Cannell's Pelargonium and other houses he would assuredly think it the height of summer here, and not "drear November." There are some thirty-two houses devoted to the culture of Pelargoniums, singles, doubles, and Ivies, presenting a brilliant display of colour, ranging from pure white and through all shades to the deepest crimson; Begonias, Chrysanthemums, Cyclamens, Primulas, Bouvardias, Carnations, &c., the whole forming a floral display that must be seen to be realised. Before entering into brief details concerning these subjects it may be of interest to note a wrinkle or two in the heating of the houses adopted by Messrs. Cannell, who are nothing if not original and practical. The houses are heated with Cannell's "Circulator," an efficient boiler. The pipes are so arranged that what is usually in ordinary practice the "flow" is here made the "return" pipe, and *vice versâ*—quite an upsetting of the old notion, and probably a nut for the hot-water engineers to crack. That it answers, and admirably so, is seen in the splendid condition of the plants.

In some of the houses the usual 4-inch cast-iron pipes are supplemented by wrought-iron pipes 1 inch in diameter. These, viz., the wrought pipes, are fixed directly under the glass and near the lower end of the sash-bars, three pipes being on each side of the roof, the lower one being about 8 or 9 inches from the wall plate, and the others 9 and 18 inches above it. It is claimed—and apparently with justice—for this system of roof-heating that it gives a more equal distribution of heat and a drier atmosphere (important essentials in the cultivation of such plants as are here to be seen), than is secured by the common method of arranging the pipes.

Out of such a host of Pelargoniums, some 600 varieties being grown, it is necessarily only possible to enumerate a few of the best. Queen of the Belgians, a splendid variety, one of the purest whites, a fine single-flowered zonal; Le Cygne, double-flowered zonal of the same character as the preceding, and a valuable addition to the double-flowered whites. Swanley Gem, bright rosy-salmon, of a most distinct, pleasing, and attractive shade, large white centre; extra large, fine-shaped flowers of great substance, a fine bold truss, and a striking variety. Kentish Fire—in this we have a decided advance in the crimson-scarlet varieties, flowers of fine form and substance, good overlapping petals, thus possessing the good qualities of a first-class zonal Pelargonium. Scarlet Cloth—although we have many in this class of colour which are good, yet this variety will be found of a rich shade of scarlet, with enormous flowers and trusses. Mrs. W. E. Carden (double), soft rosy-cerise of pleasing tint, the flowers full and of good form, a fine variety for winter flowering; habit good, free, and effective. Emile Lemoine—double-flowered Ivy-leaved; in this we have a new edition to this increasingly popular section; colour quite distinct to anything yet seen in this class of Pelargoniums, of a rich orange-scarlet shade, the pips large and semi-double; an acquisition of much merit.

Some five houses, containing 8000 plants, were filled with Chrysanthemums of all kinds, including the newest varieties. The plants are sunk in the ground—viz., not placed on stages, so that the visitor has a better opportunity of observing them, as they may be looked down upon instead of their being above the line of sight, as is too often the case.

November is an unusual season in which to see Begonias in quantity in flower, but we saw here a house about 100 feet long of this showy flower in fine trim, that brought back visions of hot July (the month *par excellence* for the Begonia) to our mind.

Cyclamens, a grand batch, were just beginning to "peep," as if to give us a foretaste of what the plants would be at a later period. Primulas, as is well known, are made a specialty of at Swanley; of the

useful old albo-plena for cut flowers a large stock is grown. Swanley Blue Primula, having a distinct shade of blue in its symmetrical flowers, is a good thing, and is probably the best of the colour yet out. Of that sweet useful winter flower the Bouvardia an immense stock is grown, and comprising all the best varieties, specially noticeable being Humboldtii corymbiflora, of free growth, fine large flowers, and of pleasant aromatic scent, snow-white; this is a very fine variety. A good commercial plant is the now well known Carnation, Pride of Penshurst; some thousands of it are grown at Swanley.

One of the most desirable plants in cultivation is Salvia Pitcheri, a very beautiful herbaceous plant, with branching stems 2 to 3 feet in height; colour azure-blue, producing a quantity of flowers during the autumn months.

We have spoken thus far very inadequately of plants producing flowers, just one note of a house devoted to foliage plants. These are mainly foliaged Begonias, very beautiful, interspersed with variegated Aspidistras, small Palms, Dracænas, and elegant Ferns; the beautiful Panicum variegatum, relieved by green moss, gracefully draping the walls below the stage on each side of the house. Standing at the entrance to this house, and looking down its long vista, the effect is very striking. *B.*

## HEMLOCK SPRUCE BARK EXTRACT.

THIS substance, which is now much used for tanning, is obtained from the bark of the Hemlock Spruce (Tsuga canadensis, Carrière = Abies canadensis, Linnæus), a tree 70 to 80 feet high, found over a very extensive area in North America, extending from Nova Scotia, Hudson's Bay, and New Brunswick, through Canada and the United States, as far south as North Carolina. The tree yields Canada pitch, used for similar purposes as Burgundy pitch in Europe. Oil of Spruce, or oil of Hemlock, is also distilled from the leaves, and used in medicine. The bark contains nearly 14 per cent. of tannin. In the southern parts of the United States the stripping of the bark commences in the spring, and continues during April and May. In New York, Michigan, and Wisconsin, the bark is collected in June and July, and further north it is still later; that obtained furthest south is said to be of the best quality. In consequence of the demand for Hemlock bark, the forests are said to be fast disappearing. The extract, which has superseded the export of the crude bark, contains from 18 to 25 per cent. of a deep red tannin, which gives considerable weight and firmness to leather. The following is given as the mode of preparing the extract:—"The bark, in pieces ½ to 1 inch thick, and several inches long, is soaked for about 15 minutes in water at 93° Cent. (200° Fahr.); it is then fed into a hopper, which conducts it to a 3-roller machine, something like a sugar-cane mill, through which it passes. Coming out lacerated and compressed, it next falls into a vat of hot water, where it is agitated by a wheel, that the tannin from the crushed cells may be dissolved in the water; hence it is raised by a series of buckets on an endless chain somewhat in the manner of a grain elevator, to another hopper, whence it is fed to another 3-roller mill; here it receives its final compression, and comes out in flakes or sheets like coarse paper, and almost free from tannin. The buckets are made of coarse wire that the water may drip through during the elevation. In order to avoid the blackening action of iron whenever this metal is brought into contact with the solutions, it is thickly coated with zinc. The solution is evaporated to a solid consistency generally by vacuum-pans. About 2 tons of bark are represented by one bar (of less than 500 lb.) of extract." The total production of extract is probably over 10,000 tons annually, ranging in value between £17 and £23 per ton.

No returns are available as to the quantity and value of the extract imported into Britain, as it is included under barks and extracts used by dyers and tanners. Neither is there any record of the cost of extraction; the profits, however, must be sufficient to maintain a large plant and a considerable number of hands.

From the general use of the extract, it would seem that it is applicable to most, if not to all, kinds of leather. It also has a medicinal value, in consequence of its having similar properties and effects to extract of Rhatany (Krameria triandra), and consequently applicable as a medicine where that drug is applied. *John R. Jackson, Museum, Kew.*

## HOME CORRESPONDENCE.

**Daffodils: Leeds and Herbert.**—It will be a great pity if the Rev. Wolley Dod's informant does not give us his own account of his conversations with the late Mr. Leeds. I have myself seen a good many of Herbert's letters written during the comparative short period of his life when he really studied the Narcissi, and in these letters he frequently requests aid from his contemporaries, but very rarely offers any on his own part. I note that it was "species only" that Leeds is supposed to have received from him, so that the credit of Leeds' own labours is secure. That Leeds was fully alive to the value of Dean Herbert's literary labours and hybridising experiments is proved by his own reference to them in the *Gardeners' Magazine of Botany* at the time his own seedling Narcissi were being illustrated therein, in the year 1851. I hope Mr. W. Dod's informant will kindly and of his own generosity tell us all he remembers of the late Mr. Leeds and of his work. *F. W. Burbidge.*

**Cladotrichum passifloræ**, *n. sp.*—I venture to propose the above name for a very curious black mould which occurred, but very sparingly, on leaves of Passiflora quadrangularis here this spring, and which, by a slight expansion of Corda's genus, Cladotrichum, may be included in it. It consists of somewhat branched



septate mycelium of a darkish brown colour; from this arises a slender hypha or thread slightly swollen at the tip, 1—2 septate, which produce a single branch much swollen and very black, bearing at its extremity a simple hyaline spore. It would thus accord with Corda's genus in every respect, except in having simple and not septate spores. The form is a somewhat obscure one, and it is not easy to determine whether the dark bulbous swelling is the spore with a hyaline appendage, or whether the said appendage is the real spore; a portion is sometimes left adherent to the end, and on the other hand these bodies are often free. The very small amount of material obtained—a few specks on a single dead leaf—rendered all attempts at germination impracticable. The spores are about .0005 inch × .0003 inch; the swollen portion .0007 inch × .0004 inch. In fig. 164 A represents a group on the epidermis of the leaf, and B a single detached specimen; C, spores (?). *Greenwood Pim, M.A., F.L.S., Monkstown, Dublin.*

**Ten-week Stocks for Market.**—A market gardener in a large way in West Middlesex grows these largely for marketing in early summer, but he sows the seeds early in November instead of in early spring. The seeds are sown in pans and shallow boxes, in suitable soil, stood on raised sloping beds in cold frames, raised up near the glass, and where the sun can fall freely upon them. During the winter air is given on all favourable occasions, and when severe weather sets in they are kept covered up from frost. By the spring they have formed fine young plants, they are then pricked off into cold frames for a time, and finally planted out in good soil in the open ground, with good balls of earth attaching to the roots. This is done as soon as convenient, and it is found that they grow freely and robustly, and produce many spikes of flower that are bunched and sent to market. Three colours are grown—the purple, crimson, and white, the latter rather more largely, and the purple less than the other two. These come in well to follow the autumnal and Queen Stocks, and they in turn are followed by the Ten-week Stocks raised from seed in spring. *R. D.*

**Summer Hill, Pendleton**, the seat of W. Agnew, Esq., M.P., is just now a most interesting spot to visit. I have had the pleasure of calling here on several occasions, but I think I was never so pleased as when I had a look through the houses a few days ago. Mr. Agnew is a great lover of Orchids, as may be gathered from some of the prices paid for plants at the Manley Hall sale thirteen years ago, but it was not so much the Orchids that took me there as the ordinary winter blooming plants now making the houses gay and attractive. Mr. Bradley, the gardener, has ever to have at hand a good supply for cutting purposes, and so one part of his Chrysanthemums are permitted to bring three or more flowers on a stem; for vases and basket, &c., such medium flowers are very serviceable. A second lot of plants are disbudded to a single bloom, and at the present time this batch is very gay. The flowers are of large size and good form, the Japanese, of which there are many sorts, are especially fine. A third batch is also grown, which will carry on the blooming period till Christmas and the new year. In the house next this is a fine batch of Primulas, well grown and flowered, capital plants, with trusses well up above the leaves. The division adjoining this one is deserving of special mention, as the subjects, though well-known and usually well done, are not often blended together in the manner in which we saw them here. On the side stages (for a path runs through the centre of the house) are a large number of well-grown Poinsettias, with large and showy bracts and flowers. These have kept their leaves fresh and green, so that the bare naked appearance these often present is not here noticeable. Arranged amongst these all through the house are many plants of the different forms of Calanthe, viz., Veitchi, vestita rosea and lutea; the spikes of those latter just elevated and slightly curving over the Poinsettias produce a happy combination, and one that is very striking on a first inspection. A row of Poinsettias at the back of both stages will shortly be opening their bright orange-scarlet flowers, then the effect will be even more attractive. Good Cœlogynes, Dendrobes, Vandas, &c., with Phalænopsis Luddemanniana, a mass having eighteen plants growing together, with a nice lot of Odontoglossums, are a sample of the Orchids to be seen. The specimen Camellias, too, in a very short time will be covered with their useful flowers. Mr. Bradley finds his Calanthes succeed best grown in baskets and hung up in the stoves; certainly nothing could be much finer than the bulbs and spikes now produced, the result of a very careful and liberal supply of heat, air, and water. *W. Swan, Fallowfield.*

**Hardy Ferns at Kew.**—In the *Gardeners' Chronicle* for July 17, 1875, p. 78, I find a paragraph relating to a number of greenhouse Ferns that were planted out for trial among the hardy Fern collection at Kew. We should be glad to learn from the Kew authorities whether these have continued to stand out up to the present date. They are as follows:—Adiantum hispidulum, Cyrtomium falcatum var. caryotideum, Asplenium obtusatum, A. umbrosum, Lastrea decomposita, Doodia aspera, D. caudata, D. media, Lomaria procera, Onychium japonicum, Polypodium Billardieri, P. plebeium, Pteris cretica, Woodwardia orientalis, and W. radicans. Should these have done well in the open air we shall be induced to try several other cool-house species which we are inclined to think are quite as hardy as the above. *H. C.*

**Pears.**—I hope that the Pear Congress which has been held at Chiswick will be the means of drawing attention to the great number of worthless varieties of this useful fruit with which our gardens are encumbered. In the gardens of which I have charge there are scores of Pear trees, the fruit of which is absolutely worthless—small, hard, round ones, and some conical, that never will soften or ripen, no matter how long they are stored. A friend of mine, who made a con-

tribution of over three dozen samples of varieties grown in this district to the Congress, showed them to me before sending them off, and I can candidly affirm that there were about only eight sorts amongst them which I could honestly recommend to any one about to make a new orchard. Of all that I am acquainted with in this district the following sorts are those of which I approve, viz. :—Jargonelle, Williams' Bon Chrétien, Souvenir du Congrès, Autumn Bergamot, Baron de Mello, Beurré Clairgeau, Brown Beurré, Beurré Diel, Easter Beurré, Marie Louise, Glou Morçeau, Napoleon, Louis, Bonne, Passe Colmar, and Bishop's Thumb. The rest I should not give place in a garden, and would urge our nurserymen to propagate none of them, and only grow such as will be found to be good by a concurrence of opinion. *A. Macdonald, Cheadle, Manchester.*

**Grevillea robusta.**—This well known New Holland evergreen greenhouse shrub is much more grown as an ornamental rather than a flowering plant, because of its elegant Fern-like foliage. And what a useful plant it is, for it is one of the best things to use in rooms, as it will stand gas, drought, dirt, sun, &c., as well, if not better than any other subject. It is not, therefore, to be wondered at that it is largely in demand for indoor purposes. At Messrs. Sutton & Son's nursery at Reading in the summer just past could be seen a number of handsome young plants that had been raised from seeds. The seeds were sown early in January, and raised in a temperature of 70° to 80°. They germinate very irregularly; those that grow at once are raised in about six weeks. The pans are kept indoors for six months, and then they are placed out-of-doors to take the chance of any further plants putting in appearance. *R. D.*

**Tomato Roots Diseased.**—Can you tell me what is the malady affecting the two pieces of roots of some Tomato plants which I send you? I have made other inquiries before troubling you, but should be thankful for the benefit of your practical opinion through the medium of the *Gardeners' Chronicle*. The specimen sent you is one of the worst, but there are some others as bad. The attack of the present season has not been the first I have had, but it has been much worse than in former years, and the attack was visible at a much younger stage of the growth (both in Tomatos and Cucumbers) than formerly. *J. J. Rolfe.* [The answer is given in the "Notices to Correspondents" in this issue. Ed.]

**Diseased Orchids.**—The following letter was received by us from Mr. Hugh Low, Clapton, to whom it had been sent by a correspondent:—"Your traveller, Mr. Casey, called upon me lately and I showed him the leaves of my Odontoglossums made in 1884, also leaves on my Dendrobium thyrsiflorum, both diseased, and it came on them in April, and now again it is going worse. Casey told me if I sent you some leaves you would kindly send them to the *Gardeners' Chronicle*. The lot marked No. 2 are Odontoglots in various stages of decay. Lot 3 a single leaf, on which at the under side near the tip (the extreme tip I cut off to examine), with the aid of a pocket lens, you can see groups of small lumps or dots raised on the surface. These I want him to particularly notice. No. 1, Dendrobium leaves all spotted or blotched with what I believe to be fungi. If you can help me to what it is that causes this disease on my plants and the best way to quit it I shall esteem it a great favour. *R. P. Percival.*" [Mr. Worthington Smith's reply to the above will be found this week in "Answers to Correspondents." Ed.]

**Magnolia grandiflora.**—Here in Devonshire it is usual to meet with fine specimens of this lovely fragrant white-flowered evergreen, sometimes as a bush or tree, but more frequently growing against a wall. As an instance it would not be untrue to describe the lawn at Sea Grove, Dawlish (J. L. Lea, Esq., M.P.), as "a plantation of Magnolia trees." I have not yet had the pleasure of inspecting this remarkable collection when in full bloom, but judging from the description sent by the gardener, Mr. Coleman, the sight must be a fine one. Last September I was, however, fortunate in seeing in flower at Wimborne, Dorset, the best wall of Magnolias I have yet seen, and through the courtesy of Lord Wimborne's gardener, Mr. Williams, who took me over the highly ornamental park and gardens of Canford Manor. The wall in question is not far from, and (so far as I can remember) in a line with the front of the mansion, and is 25 feet in height and about 150 feet in length. All this is entirely covered from end to end in a very effective manner, with eight magnificent Magnolias, planted equidistant, seven being the free-flowering variety (Magnolia grandiflora exoniensis). *W. Napper.*

**Meconopsis nepalensis.**—I do not think Meconopsis nepalensis is enough grown in gardens for its foliage; at this season beautiful objects in gardens get scarce, the Meconopsis, which is grown in many places in our experimental garden, at Wisley, constantly pulls me up to admire it in passing. The soft grey-green blankety leaves, with rain or dewdrops on them, are really beautiful, and seem not to care for frost. The plant is very easy of cultivation, it likes good loamy soil, not too dry, and though only a biennial, sows itself about, and so keeps up the supply. *G. F. Wilson.*

**Lycaste cruenta.**—In the seed-vessel of this plant (fig. 165) we have a different form to most of those we have already figured. It is club-shaped, with its broadest diameter near the top, where may be seen remains of the thick fleshy column. The very stout prominent



Fig. 165.—Lycaste cruenta.

ribs are also noteworthy. The varied forms of these organs are clearly due to disproportionate rate and intensity of growth in some parts as compared with others, but it is not easy to assign any reason for the disproportion except hereditary tendency, and we are more in the dark as to why the progenitors of our Lycaste produced seed-vessels of this form (as they probably did), than to account for the like phenomenon in their descendants. *M. T. M.*

**Abies nobilis, var. robusta.**—I am glad this particular case has been further investigated, and a conclusion arrived at. When I first saw this plant at the Cranston Company's, I took it to be Abies magnifica; it had the remnants of a cone left on it, so I sent it to Mr. Syme, who described and figured it. I cannot find my remarks relating to the cones of the following year, viz., 1878; but by your illustration the bracts seem to have become elongated, but they were at that time decidedly inflexed, the cones were not so long as they are in A. nobilis, and were more obtuse at the apex. It will be interesting to note if it still further changes its characters, viz., if the cones become longer, and more pointed, and if the bracts, which are now at right angles to the cone, become reflexed; if so, I think it will be the most conclusive evidence that it is simply a variety or sport of A. nobilis. *Wm. Partridge, Fenham Nurseries, Newcastle-on-Tyne.* [There is no doubt that the plant we figured at p. 657 is a form of A. nobilis. The scales have now all turned down, as in ordinary nobilis. If it be really true that the cones with inflexed scales, sent by Mr. Syme, figured on the left-hand side of fig. 148, came from the same tree as that which produced the cones figured at p. 657, the interest is even greater, but we should like to be sure on this point. Ed.]

**Honours to Horticulture.**—I observe in the *Gardeners' Chronicle* of last week an account of the distinctions awarded to horticulturists in Belgium, supplemented with the remark "How strange it would seem in this country if Messrs. So-and-so and others, who contributed to the success of the late Inventions Exhibition were named members of the Order of Victoria." Why strange? Because there are no precedents for it? True. But wise men make precedents. These distinctions are admittedly given in recognition of services rendered to the State, and as a stimulus to further exertion. Who shall say that horticulturists have not a fair claim to recognition on these grounds? And if they had received it in the past they would have had a readier will and more power to inaugurate and push on the movement for an International Horticultural Exhibition now projected. Look at the importance of horticulture, which I regard as synonymous with cultivation in dealing with the raw material of food, clothing, and the many vegetable productions put to various economical uses, as well as the beautiful objects constantly brought forward to decorate our hearths and homes. Who will say that an art—or a science and art, for it is both—that has eight weekly journals as its chroniclers and exponents is of small interest or importance in the eyes of the community? The horticulturist is literally the man who makes two blades of grass grow where but one grew before his interposition. But I do not think this State recognition is due simply for services rendered at the late Inventions Exhibition, however great they may have been, but rather for a summing-up of services over a lengthened period in the past. But our quiet and plodding horticulturist has been so used to be treated by the great as a mere hewer of wood and drawer of water, probably because he is seldom a diplomatist, that the enterprise which is unquestionably in him has never been nurtured and developed. It would surely be a patriotic and popular movement if you, Mr. Editor, would place his claims to this recognition fully and fairly before the powers that be, to be dealt with according to their deserts. If found to be fairly recognisable, I venture to predict that it would give a great impetus to a most useful, ornamental, and order-promoting art. And it would be a gracious act on the part of Her Majesty's Commissioners of the Exhibition of 1851, who have succeeded to the garden at South Kensington which the Royal Horticultural Society made, but couldn't hold, if they were to lend a helping hand in the work. *F.R.H.S.* [We shall have something to say on this subject on another occasion. In the meantime we should be glad to hear of the opinions of others of our correspondents. Ed.]

**Primula floribunda.**—I think it is impossible to over-praise this beautiful and useful species, because of its simple elegance and its marvellous prolificacy of bloom. Seedling plants raised at the end of last summer and grown on into size are now flowering profusely, and have been blooming without intermission since June last. Having by the end of April filled some small 60-sized pots with roots, they were then shifted into 48's, well drained, leaf-mould, grit, and loam forming the compost, and some pieces of charcoal mingled with it. The plants were potted a little deeply, the soil being within an inch of the top of the rim, and on the surface some stones were laid, supporting the plant all round. This has operated to keep the surface of the soil cool and moist—a condition of things the plants appeared to like. All the summer the pots have occupied a shelf in the greenhouse, where but little sun falls upon them; and this position appears to be favourable to their wellbeing. They make an admirable fringe to other plants on a shelf, and the stems bearing their many whorls of blossoms gradually become pendent, and hang down over the sides of the pots. This species appears to grow much more freely in the cool autumn weather than during the hot days of summer: this is so in my case, but it may not always be so. I notice that all my plants—about a dozen—have flowers in which the pistil or pin is very prominent, but as I have reason to believe they all

came from one parent, this may be explained. But has any one noticed thrum-eyed flowers in this species? And is it capable of being improved—that is, in the size and form of the flowers? Also, is it reasonable to expect that other shades of colour might be forthcoming? Would P. obconica and P. floribunda cross with each other? They are both such persistent bloomers that could a cross be accomplished something interesting might result. I think P. obconica less hardy than P. floribunda; at any rate, I can manage the latter more successfully in a cold house. P. obconica appears to do better in a warmer and drier atmosphere, as it is to all appearance susceptible of damp, and appears to die when the soil about the roots is over-moist. It evidently requires to be well drained. But it is such a marvellous flowerer, blooming in a gentle heat nearly or quite all the year round, that it will always be a great favourite with those who can grow and flower it. Do seedlings from this show any variation in colour? *R. D.*

**Floral Pyramids.**—I can quite believe in the remarks of your correspondent "X." in reporting the beauties of the floral pyramids of Ivy-leaved Pelargoniums as grown at Coombe Warren by Mr. Profit. To my thinking, nothing adds to the grandeur of the flower garden, and more especially the formal terrace, where a certain amount of stonework or sculpture takes a prominent position. I am aware that some consider the stonework of the terrace bad taste and rather hard lines, and would only admit of the mansion being connected with the shrubbery or the forest with natural groups of beds or bushes, undulating lawns, bold curving walks, and natural-formed lakes, with beds of Dogwood and other shrubs blazing away in the distance. Such is the fancy of some modern landscape gardeners, and may be termed the cheap extreme. The flights of steps, balustrades, and expensive stonework is all artificial grandeur, which may be called the expensive extreme. But where such are found, nothing sets the artificial terrace off so much as pyramids of any sort, whether Orange trees in tubs or hardy shrubs planted out and cut pyramidal fashion. When tender things are taken indoors for protection, the hardy formal established shrubs take away the bareness of the terrace for the winter, and in addition to the ordinary flat beds of Pelargoniums, &c., nothing adds so much to the splendour of the scene as floral pyramids, even of the most common Pelargonium and Fuchsia. Fancy the old Riccartoni Fuchsi, in the West of Scotland, attaining the height of an ordinary haystacks, which our inland situation will not admit; and to make the best of our floral display, the storing of our fancy and tender plants for nearly seven months in the year is our greatest difficulty, more especially as some of them require, to get them up a decent height, several years' attention, and to be pinched, as it was last September, when in full flower. It is a question whether they are worth all the trouble, at all events unless comfortable quarters are provided for them after being lifted, any attempt to go into the pyramidal line will become a failure. Some years ago Mr. Hugh, of Fulham Palace, used to grow the old Kentish Scarlet Pelargonium, 12 feet high; Mr. Tillyard of Brocklesby, when at Bentley Priory, used to adorn the terrace with grand imposing pyramids, with such things as Pelargoniums, Heliotropes, and Calceolaria amplexicaulis. At the time of my visit, if my memory fail me not, some of them were upwards of 6 feet high. And now, when we have such vigorous and strong growing varieties of the Ivy-leaved Pelargonium, nothing could be more suitable for the purpose, particularly as they are so very floriferous, and they make large and handsome specimens in pots, while almost perpetual in flowering. Many of my friends will remember the fine effect the old pink Nosegay Pelargonium had in the shape of pyramids 9 feet in height and 5 feet at the bottom, not only as single specimens, but by the dozen, upon the terrace at Worksop Manor and Clumber. *John Miller, Ruxley Lodge, Esher.*

**Commons and Roadside Slips of Land.**—It may appear the height of audacity to question the words of such an eminent man as Lord Bramwell, but judges are not infallible—their judgments are frequently set aside. I think that his Lordship's opinion as to roadside slips of land in his letter in the *Times* of November 12 last is calculated to give a wrong impression. In what instance, I would ask his Lordship, do roadside slips of land not practically belong to the public, though in theory the soil of the highway may belong to the adjacent landowner? We have just issued a paper on the "Law relating to Footpaths and Encroachments." The following paragraph appears in it:—

"2. AS TO ENCROACHMENTS ON HIGHWAYS.

"It is now clearly established by decided cases that no one has any right to enclose any part of the original highway between the fences even although he may still leave the road 30 feet wide. Any land which has once formed part of a highway must remain open for ever for public use, and no lapse of time can give a good title to an encroachment. This is a most important fact, which has been lost sight of by many public bodies in England. The misapprehension of the law on this point no doubt arose from a misconstruction of the 69th section of the Highway Act, 1835, which merely provided a summary remedy in the case of encroachments within 15 feet of the centre of the highway, without in any way altering the existing law so far as other encroachments were concerned. (See cases of Regina *v.* Edwards, 11 J. P. 602; Regina *v.* U.K. Telegraph Co. L. J. 31, M.C. 106; and Turner *v.* Ringwood, L.R. 9 Eq. 418)."

This has passed through the hands of several lawyers, and has also been settled by Mr. William Cunningham Glen—I think one of the first authorities on the law relating to highways. *Henry Allnutt, Secretary to the National Footpath Preservation Society, 42, Essex Street, Strand, London, Nov. 30.*

# Reports of Societies.

## THE EDINBURGH APPLE AND PEAR CONGRESS.

(Concluded from p. 695.)

THIS great show, on which we have already reported, was brought to a close on Saturday, the 8th ult. As a show it has already been said to be a great success. The Managing Committee deserve unstinted praise for the thoroughly energetic manner in which they carried through the task of arranging and giving effect to every detail. They, unfortunately, have not the satisfaction of having accomplished a financial along with the practical accomplishment of their purpose in getting up the Congress. The election fever and the weather were both adverse to the general public being disposed to give their attention to Apples and Pears, and the consequence will be a heavy loss to the Royal Caledonian Horticultural Society, which, however, it is fortunately able to bear without being hampered thereby.

The jurors had not finished their work till near midday on Saturday, so much naming and comparing having to be done, and the difficulties of recognition in some cases among the Scotch productions being so great as to require extreme care on the part of the jurors to avoid error in their endeavours to eliminate it wherever it existed. Their votes and deliberations are now in the hands of the committee, and will doubtless appear in compact form in due time as a practical reference of high value to all interested in pomology.

The jurors were:—Messrs. Barron, Chiswick; Bunyard, Maidstone; Barnett, The Deepdene; Woodbridge, Sion House; Webster, Gordon Castle; Thomson, Drumlanrig; Thomson, Viewfield, Dalkeith; Crosby, Buchanan House; Smith, Mentmore; Fowler, Castle Kennedy; Coleman, Eastnor Castle; Dr. Robertson, Errol; Mr. Lunt, Ardgowan.

### ENGLAND.

As was to be anticipated, the various collections brought up from England were conspicuous for their perfection of colour, superior size, and every mark of high quality. The country was well represented from north to south, though some of the larger nurserymen of the West and the Midlands were conspicuous by their absence. Taking the collections as they were placed in alphabetical order by the counties—

*Buckingham* sent a grand collection of over 100 varieties from Mr. Smith, The Gardens, Mentmore. Conspicuous among the Apples were splendid samples of Galway Pippin, Lindula Pippin, a very pretty seedling of medium size and reputed good quality, raised in a cottage garden at Leighton Buzzard; Scarlet Nonpareil, Dumelow's Seedling, Bess Poole, Fearn's Pippin, Reinette du Canada, Nelson's Glory, and many others; and among Pears were some very fine samples of Glou Morçeau, Josephine de Malines, Crassanne, Prince Albert, Beurré Diel, and Bergamotte d'Esperen. Mr. Miles, The Gardens, Wycombe Abbey, also sent a collection of fifty varieties of Apples, notable for their good size and very fine colour.

*Cumberland and Westmoreland.*—These two counties were represented by a remarkable collection, brought together from various districts within the limits of the counties by Messrs. Little & Ballantyne, nurserymen, Carlisle. It was the largest in point of numbers of any single exhibit on the tables, comprising as it did about 600 dishes of Apples and Pears, many of which were quite equal in size to the average of English fruit of the same sorts, although deficient in colour to the collections from more southern counties. Altogether it was generally considered one of the most instructive collections set up, containing, as it did, the largest number of varieties of any. More conspicuous among the Apples were fine samples of Cat's-head, Hollandbury, Cellini, Lord Suffield, Emperor Alexander, Scotch Codlin, Warner's King, and Ecklinville; and among the Pears fine examples of Hacon's Incomparable, Beurré Diel, and Marie Louise.

*Derbyshire* sent but one collection, contributed by Mr. Hutton, Whittington Hill, Chesterfield. It comprised twenty varieties of Apples and the same number of Pears—all very good, and, considering the district, above average quality.

*Durham* was represented by one exhibitor only—Mr. Hunter, Lambton Castle Fence Houses, whose collection, being chiefly from orchard-house trees, were of very superior quality, and very clean.

*Hampshire* exhibited two collections—Mr. Wildsmith, of Heckfield, sending fifty varieties of Apples and Pears of more than average quality; and Mr. Bell, The Gardens, Strathfieldsaye, twenty-five varieties of Apples, also good.

*Herefordshire* was represented by one exhibitor only, but the exhibition in point of numbers and quality was regarded as quite a representative one. It was from Mr. Watkins, of the Pomona Farm, Hereford, and comprised over 200 varieties of Apples of very superior culinary and dessert kinds, and an interesting collection of cider Apples—the only exhibit of this kind set up. The rich colours of the cider Apples gave this collection a most attractive appearance, which was very highly appreciated by the general public.

*Kent.*—This county was worthily represented by Messrs. Bunyard & Co., Maidstone, who tabled 300 varieties of Apples and Pears of surpassing excellence. The whole collection was remarkable, not one unsatisfactory sample appearing in the whole series. The colour was superb, and the size, cleanness, and perfection of form all that could be desired. Conspicuous among the Apples were Blenheim Orange, only surpassed by one other sample in the show, that from Nova Scotia, which, though larger than that from Kent, lacked the colour and finish of the latter; Warner's King, Golden Noble, Gascoyne's Scarlet, very attractive in colour; Cox's Orange, Reinette du Canada, Peasgood's Nonsuch, Annie Elizabeth, Lord Derby, Gloria Mundi, King of the Pippins, Wellington, and New Hawthorden. Of Pears, the following were especially noteworthy:—King Edward, Conseiller de la Cour, Beurré Rance, Triomphe de Jodoigne, Doyenné du Comice, Calebasse Grosse, Beurré Diel, Emile d'Heyst, Beurré Bachelier. There were also two collections put up by private growers from Kent, viz., forty varieties of Apples from Mr. Young, Sittingbourne, all remarkably fine, with specially notable samples of Warner's King, King of the Pippins, Worcester Pearmain, and Blenheim Orange. The other private collection comprising forty sorts was from Mr. McLean, Vinters Park, and contained remarkable samples of Loddington Pearmain, Warner's King, and Blenheim Orange.

*Lincolnshire.*—From Mr. Ingram, The Gardens, Belvoir Castle, came a very excellent and correctly named collection, comprising fifty varieties of Apples and thirty varieties of Pears. The fruit were not so remarkable for size as for superior colouring and cleanness of form.

*Middlesex.*—From this county came two of the most remarkable collections in the whole exhibition, viz., that of the Royal Horticultural Society of London, and that of Messrs. James Veitch & Sons, Chelsea. The former comprised upwards of 250 varieties of Apples and Pears of the highest excellence, all correctly named, thus forming a valuable means of reference in cases of doubt, which arose in other collections. The more noteworthy varieties of Apples were Braddick's Nonpareil, Sweney Nonpareil, Court Pendu-plat, Cox's Orange Pippin, Cellini, Blenheim Orange, Blumin's Red Winter Reinette, Emperor Alexander, Lane's Prolific, Mrs. Barron, Lane's Prince Albert, and Swedish Reinette. Among the more remarkable Pears were Maréchal Vaillant, Passe Crassane, Doyenné du Comice, Maréchal de la Cour, Léon Gregoire, Durandeau. Along with this grand collection was also exhibited an interesting collection of fifty varieties of perry Pears, which were the only samples of the kind exhibited.

Messrs. Veitch's collection was superb, every sample was perfect, the nomenclature was correct, and the selection was comprehensive of all the best of each class. Among the Apples perhaps the most remarkable was Bismarck, an orchard-house sample of extraordinary size and handsome appearance. There were also splendid samples of Royal Russet, Sturmer Pippin, Alfriston, King of the Pippins, Lady Henniker, Wyken Pippin, Winter Hawthornden, Barker's Seedling, Gloria Mundi, Reinette du Canada, Dumelow's Seedling. Among the Pears were grand samples of Duchesse d'Angoulême, Beurré Diel, Beurré Bachelier, Huyshe's Prince Consort, Huyshe's Victoria, Easter Beurré, Beurré Clairgeau, Hacon's Incomparable, Beurré Baltet, and Vicar of Winkfield.

*Norfolk.*—From this county only one representative appeared, Mr. Stephen Castle, West Lynn, with a collection of thirty varieties of Apples and fifteen varieties of Pears of only ordinary merit.

*Northumberland.*—Mr. English, Howick Hall Gardens, sent a remarkably clean, well-grown collection of 110 varieties of Apples and twenty varieties of Pears, among the most noteworthy Apples being Gravenstein, Green Leaddington, Lord Derby, Northern Dumpling, and Lord Suffield; and among the Pears, Gansel's Bergamot, Louise Bonne of Jersey, Beurré Bosc, and Beurré Diel.

Mr Adam, of Haggerston Castle, sent fifty-six varieties of Apples and twelves of Pears of average merit.

Mr. Harris, Alnwick Castle, put up a nicely grown collection, comprising 108 varieties of Apples and twenty-eight varieties of Pears. Among the more notable Apples were Cellini, Cox's Orange Pippin, Warner's King, Kentish Fillbasket, and Ecklinville; and among the Pears, Beurré Diel, Marie Louise, Hacon's Incomparable, Souvenir du Congrès, and Duchesse d'Angoulême.

*Shropshire* was represented by two fairly good collections—one from Mr. Sherwood, Chetwynd Park, Newport, and the other from Mr. Leslie, Aqualate Hall, Newport, the former comprising sixty-five varieties of Apples, and the latter forty-nine varieties of Apples and sixteen varieties of Pears.

*Staffordshire.*—Mr. Bannerman, gr. to to Lord Bagot, Blithfield, put up a very nice collection of Apples and Pears, which were above average merit. The more notable among the Apples were Allriston, Pearsgood's Nonsuch, and Lord Suffield; and among the Pears Glou Morceau and Duchesse d'Angoulême were very superior.

*Surrey.*—Mr. Burnett, The Gardens, Deepdene, sent up fifty varieties of Apples of superior merit, and thirty-six varieties of Pears, also good.

*Worcestershire* was represented by Mr. Ritchie, Eardiston Gardens, who set up a very excellent collection comprising 100 varieties of Apples and fifty varieties of Pears. They were a very highly coloured and generally well grown lot, the samples of King of the Pippins Apple and Pitmaston Duchess Pear being the finest in show.

*Yorkshire* sent two private collections, one from Mr. Tindall, Sprotborough Hall Gardens, Doncaster, comprising sixty varieties of Apples and thirty varieties of Pears—a very fine collection, in which were some excellent samples of Emperor Alexander and Ten Shillings Apples; and Beurré Bachelier, Bergamotte d'Esperen, Beurré Diel, and Winter Nelis Pears—the last-named very fine. The other collection from this county was from Mr. McIndoe, Hutton Hall, Guisborough, comprising twenty-four varieties, among which were some excellent samples of Doyenné du Comice and Beurré Diel Pears, and Blenheim Orange, Warner's King, Stirling Castle, and Ecklinville Apples.

WALES.

Only one collection was sent up from Wales, but it was a very worthy one. It was put up by Mr. Lowden, The Quinta, Chirk, and a very superior collection it was, rivalling in size and cleanness of growth collections from more favoured quarters. It comprised a hundred varieties, amongst which were most notable Warner's King, Mère de Ménage, Gloria Mundi, Emperor Alexander, Lord Suffield, Peasgood's Nonsuch, and Adam's Pearmain Apples.

### The Chrysanthemum Show.

This show was held in the Waverley Market, Edinburgh, on November 25 and 26, in conjunction with the Apple and Pear Congress. The exhibits of cut flowers were a great advance on anything of the kind previously seen in Edinburgh, but the plants were behind what may be done with this indispensable winter flower. There was a very good display of Grapes, and a keen competition in Apples and Pears, and some grand vegetables. *From our Own Correspondent.*

## LIVERPOOL HORTICULTURAL CHRYSANTHEMUM ASSOCIATION:

### November 24 and 25.

THE annual autumn exhibition was held in St. George's Hall, which was completely filled with flowering and fine-foliage plants, cut blooms, and fruit, most of the exhibits being of a high order. In many instances the entries were far in excess of the number of prizes offered, so that when the collections came to be staged there were brought together one of the most complete exhibitions that has ever been held in Lancashire. The trained plants, both large varieties and pompons, were splendid, the cut blooms, for which this district is famous, were of the finest, whilst the fruits were meritorious.

The class that was most admired was doubtless that for thirty-six cut blooms, eighteen incurved and the same number of Japanese. The 1st prize, a ten guinea Silver Vase, given by J. Williams & Co., Liverpool, was awarded to F. H. Gossage, Esq., Woolton (gr., J. Jellicoe), whose blooms were of very fine size and colour, and were inclusive of the best of the old and newest kinds. W. D. Holt, Esq., West Derby (Mr. F. Roberts, gr.), also showed well, and was awarded 2d. Many of the sorts seen in the first collection were represented in this one. R. N. Dale, Esq. (Mr. T. Leadbetter, gr.), was 3d.

In the class for twenty-four incurved varieties two competitors entered the lists, the 1st falling to Mr. F. H. Gossage. Mr. R. N. Dale was awarded the 2d prize with a very good lot also.

The class for eighteen incurved was well contested, Mrs. W. G. Bateson, Allerton (Mr. J. Martin, gr.), securing the 1st place; W. H. Watts, Esq. (Mr. A. R. Cox, gr.), 2d; and W. H. Jones Esq. (Mr. E. Broadley, gr.), 3d.

Two classes for twelve blooms were provided, the exhibitors in one being unable to compete in the other, and as a consequence many good stands were put up, J. E. Reynolds, Esq., West Derby (Mr. J. Wilson, gr.), R. N. Dale, Esq., and W. H. Watts, Esq., securing honours in one class, and W. S. Taylor, Esq. (Mr. C. Osborne, gr.), W. D. Holt, Esq., and W. Brockbank, Esq. (Mr. C. Gittins, gr.), winning in the order in which their names appear in the other.

For six incurved blooms W. W. Sandbrook, Esq. (Mr. H. Riding, gr.), was 1st, and Mr. F. Tobin 2d.

The class for twenty-four Japanese was a splendid one, the blooms of special brightness and colour. W. H. Cox, Esq., was placed 1st; Mrs. W. G. Bateson came in 2d, and W. D. Holt, Esq., 3d.

J. E. Reynolds, Esq., secured the 1st position with eighteen Japanese; F. H. Gossage, Esq., 2d; and H. Cunningham, Esq. (Mr. W. Wilson, gr.), 3d.

Twelve Japanese were shown by W. S. Taylor, Esq., W. H. Jones, Esq., and E. Meacock, Esq., and stood in the prize list in the order in which their names appear.

H. Cunningham, Esq., was successful with six Anemones, and also with six reflexed; while for twelve pompons, cut blooms, W. B. Bowring, Esq. (Mr. J. Hurst, gr.), was 1st.

R. L. Greenshields, Esq. (Mr. S. Bell, gr.), was successful with six incurved and six Japanese; R. Cam, Esq., 2d; and H. J. Robinson, 3d. This class was specially for those who had not won a prize for cut blooms at the Society's exhibitions.

For six large flowered plants, H. McIver, Esq., Allerton (Mr. J. Hughes, gr.), was awarded 1st, having dwarf-trained plants, with from thirty to forty flowers a piece, of Jardin des Plantes, Empress of India, Mrs. G. Glenny, Mrs. Shipman, John Salter, and Lady Hardinge, Mr. C. Finnigan, Winter Garden, New Brighton, was 2d, with good plants of Empress of India, Mrs. G. Rundle, Prince Alfred, Guernsey Nugget; Mr. J. Lewis, Aigburth (Mr. Bustard, gr.), 3d.

With three plants, Mr. W. C. Clarke, Mr. G. Pilkington, and Mr. C. Finnigan were the successful competitors.

The pompons all through were good. Mr. C. Finnigan was 1st for six plants; Mr. H. McIver showed fine specimens also, but only obtained 2d; J. Lewis, Esq., 3d.

With three pompons Mr. C. Finnigan was again to the front; Major Pemberton (Mr. T. Blackmore, gr.) 2d, and Mr. H. McIver 3d.

J. Woolwright, Esq., Mossley Hill (Mr. E. Green, gr.), was 1st with one standard, also with one pyramid Chrysanthemum.

STOVE AND GREENHOUSE PLANTS.

The various groups of stove and greenhouse plants, Ferns, Palms, &c., were arranged along the outer side of the hall, and contained many plants of good culture. Mr. W. H. Watts was 1st in the former class, showing large plants of Croton Queen Victoria, Dicksonia, antarctica, Erica hyemalis, a plant 4 feet by 4, full of bloom; Latania borbonica, a well-bloomed Epacris, and an Ixora; Mr. F. Gossage was 2d, and had a large Latania, Croton Hawkeri, a fine piece of Rhododendron Princess Royal full of flower, and a good specimen of Calanthe Veitchii, with a dozen spikes, as his best plants; Mr. R. C. Coltart 3d.

With four stove and greenhouse plants, Mr. H. Watts came in 1st, having Ixora Duffiana, Cypripedium insigne, Croton Disraeli (in splendid condition), and a Calanthe: Mrs. A. Johnson (Mr. R. Cubbon, gr.) was 2d, and Mr. Hall 3d.

Mrs. A. Johnson was 1st with four Ferns, having good plants of Microlepia hirta cristata, 5 feet through; Dicksonia antarctica, Davallia Mooreana, and Adiantum trapeziforme; Mr. J. Cunningham was 2d.

For specimen Tree Fern, Mrs. A. Johnson and J. S. Parker, Esq. (Mr. J. Lowndes, gr.), were respectively 1st and 2d.

Three Palms were staged by Mrs. A. Johnson, who was 1st with large plants of Cycas revoluta, Areca lutescens, and Seaforthia elegans; Mr. R. C. Coltart and Mr. B. C. Finnigan were placed 2d and 3d.

ORCHIDS.

Some very nice Orchids were shown: the best three coming from E. Harvey, Esq. (Mr. T. Worth, gr.), including Cypripedium Spicerianum with twenty-four good blooms; Odontoglossum Rossi majus in a basket, and O. grande. W. Holland, Esq. (Mr. W. Moss, gr.), was 2d, with a fine form of Odontoglossum Andersonianum, Cymbidium Mastersii, and Burlingtonia venusta. Mr. J. Woolwright, who was 3d, had a splended form of Oncidium Forbesii, O. Rogersii, and Odontoglossum Alexandræ.

With one Orchid, E. Harvey, Esq., was again 1st, having a fine plant of Lælia elegans picta; Mr. W. Holland 2d, with Cypripedium Sedeni, having eight good spikes; and Mr. W. H. Watts 3d, with Oncidium Rogersii. Mr. W. Holland was 1st with one Cypripedium, showing insignis with thirty flowers. The same exhibitor was 1st with two Calanthes, having C. Veitchii with twenty spikes, and C. vestita lutea with the same number: also with one Calanthe, showing C. Veitchii, very well done.

MISCELLANEOUS.

Bouquets were not very numerous: 1st prize in both classes being taken by B. Hall, Esq. (gr., Mr. A. Crosbie); equal 2d falling to Mrs. G. Watts and Miss A. Corke.

With a vase for table decoration, Mr. J. Lewis and Mr. T. S. Rogerson were successful.

The Roman Hyacinths and Primulas were very good, and made a capital display. In the former class Mr. R. Singlehurst was placed 1st over eight competitors; Mr. T. S. Rogerson 2d, and Mr. H. Liversedge 3d.

Mr. J. Brancker's Primulas were full of foliage and flowers, and were placed 1st; Mrs. Watts (Mr. T. Agnew, gr.), 2d; and Mr. J. Woolwright 3d.

Many lots of table plants were shown, but several exhibitors put up plants much too heavy for dinner-table use. The 1st prize was awarded to a light half-dozen shown by Mrs. Watts, T. F. Harrison, Esq. (Mr. T. Fleetwood, gr.) being 2d.

Mr. J. Cunningham had six beautiful plants of zonal Pelargoniums, three being single and three double; he was awarded 1st prize.

Standard Mignonette, Poinsettias and Epiphyllums were shown in capital condition.

From Messrs. R. P. Kerr & Sons came about 100 Cyclamens in different shades, the pure whites for size, substance, and general excellence being among the best ever seen in the district. This collection was honoured with a First-class Certificate. The same distinction fell to the Liverpool Horticultural Company for a very beautiful group of small plants, including Callas, Crotons, Draccenas, Heaths, Palms, Primulas, and a capital lot of Duc Van Thol Tulip in flower, the whole nicely edged with Primulas and Ferns.

FRUIT.

Messrs. F. & A. Dickson & Sons showed a collection of Apples and Pears of good colour and size; Messrs. R. Smith & Co. of Worcester staged sixty dishes; Messrs. J. Dickson & Sons, of Chester, and Mr. C. Rylance, Aughton, also showed fine collections of these fruits. Each was awarded a Certificate of Merit. The fruit staged for competition was entirely of good quality. Such Grapes are rarely seen except at a first-class exhibition, and this show should now be considered one of the finest in the country.

With twelve dishes of fruit the Earl of Harrington (Mr. J. H. Goodacre, gr.) came in 1st, having fine bunches of Black Alicante, Gros Colmar, Muscats, and Mrs. Pearson: Queen Pine, Hero of Lockinge Melon, Pears and Apples; the Hon. C. H. Wynn (Mr. J. Bennett, gr.), was a good 2d; R. C. Naylor, Esq. (Mr. M. Hannagan, gr.), 3d. The Earl of Harrington was also 1st with six dishes, having capital Gros Colmar, Muscat, and Beurré Diel Pear; Mr. R. C. Naylor 2d, and Mr. W. B. Bowring, 3d. The Hon. C. H. Wynn was successful with two, and also with one Pine-apple.

In the classes for two bunches of black Grapes there was strong competition all through, and some truly wonderful bunches were placed before the judges. In one class fifteen stands were put up, and in all others there were but slight difference in the various exhibits.

With black Grapes, Muscat flavour, J. F. Campbell, Esq., Uttoxeter (Mr. J. Hollingsworth, gr.), secured the coveted position with Mrs. Pince's Black Muscat; Alderman Raynes (Mr. J. Barker, gr.) 2d, the Earl of Harrington 3d, W. H. Watts, Esq., 4th.

Two bunches black Grapes fell to L. Smith, Esq. (Mr. A. Collins, gr.), with grand examples of Gros Guillaume; Mr. J. T. Campbell 2d, with equally fine Barbarossa; the Earl of Harrington 3d, with Gros Colmar, grand in colour and berry; an extra prize was awarded to Mr. W. Watson, also Mr. W. H. Watts, so good were their respective exhibits.

The Earl of Harrington, Alderman Raynes, and Mr. F. H. Harrison were successful with Black Hamburgh, taking prizes in the order in which their names appear.

The white Grapes were also remarkably fine. Two bunches of Muscat was secured by R. Pilkington, Esq.; the 2d going to A. G. Jones, Esq.; and the 3d to A. R. Gladstone, Esq. (Mr. T. Elsworthy, gr.).

Two bunches of any other white variety was taken by Mr. J. F. Campbell, the Rev. W. Sneyd (Mr. J. Wallis, gr.) 2d, and the Earl of Harrington 3d.

Mr. J. F. Campbell was 1st, with four bunches, showing Black Alicante, Trebbiano, Golden Queen, and Mrs. Pince's Black Muscat; Mr. A. R. Gladstone showed Alicante, Muscats, Golden Queen, and Alnwick Seedling, and came 2d; the Earl of Harrington securing 3d. There were eight competitors in this class.

Pears and Apples in several classes were well contested, splendid Pitmaston Duchess and Beurré Diel appearing in many collections, the Rev. L. Garnet securing 1st honours with eight dishes of Pears.

Numerous stands of useful and ornamental articles were shown, including a nice lot of Orchid rafts, baskets, poles, &c., from Mr. R. Martins, Liverpool.

In spite of a steady downpour of rain on the first day and the stir and excitement of an election on the second, the exhibition was well supported, and at times the flowers could only be seen after a considerable amount of exertion and patience. *S.*

## SWANSEA CHRYSANTHEMUM SHOW.

THIS show opened at the Prince of Wales' Hall on Wednesday, the 25th ult., and was continued over the following day. The weather was most unpropitious, as the rain fell continuously all the first day, and being also in the midst of the local election fever interfered materially with the attendance of the general public. The committee, however, may be congratulated on having provided quite a treat for those who attended this their first Chrysanthemum show in Swansea.

The hall affords an excellent opportunity for effective arrangement, and this had been well taken advantage of by the committee. No less than seven prizes were offered in the class for a group of plants in which the selection of materials was left to the choice of the exhibitors, and they availed themselves of the opportunity of introducing many other plants, that greatly enhanced the effect of the display of Chrysanthemums, while using, at the same time, a large proportion of the latter. These in many of the groups were shown in good form, and with many fine blooms upon them, rivalling individual blooms grown expressly for exhibition.

The competition for twelve trained plants, and for the like number of standards, did not bring forward much competition; the 1st prize lots in each class were good examples of ordinary cultivation, but had not been sufficiently prepared for exhibition purposes; the varieties were good and well flowered, but lacking in training. Classes were also provided for six plants, and for a single specimen, with corresponding classes for amateurs and cottagers.

The smaller hall was devoted to the cut blooms,

bouquets, &c., and to the collections of fruit and vegetables.

In the cut blooms the competition was extremely close, and many fine stands were exhibited; the effect would have been even better if a uniform height and width of box had been stated in the rules. Most of the blooms were exhibited as grown, very few flowers having been at all dressed.

Some very good fruit and vegetables were shown, especially in the collections from Singleton, which obtained 1st in both classes.

In the open class for twelve specimen Chrysanthemums, Mr. Reynolds, Sketty, carried off the 1st prize; and a like position was taken for twelve standards by Mrs. Vivian, Singleton (gr., Mr. Harris).

For six plants and for a specimen ditto, the premier positions were obtained by Mr. Reynolds and Mr. Speck, Llanelly.

Classes for amateurs and cottagers were well filled, and the specimens exhibited were highly creditable.

In the open class for cut blooms, F. W. Aylwin, Esq., was 1st for twenty-four fine flowers, undressed, of the leading varieties of incurved and Japanese types; and Sir H. H. Vivian, Bart., M.P., Park Wern, Swansea, was 2d, with an almost equally good lot.

J. Llewellyn, Esq., Neath, obtained 1st place in the twelves with a nice even stand of fresh-looking flowers; 2d place going to Sir H. H. Vivian.

For a bouquet of Chrysanthemums and for a hand bouquet, the 1st prizes fell to Mrs. Vivian, Singleton.

Classes for cut bloom in the other sections of the exhibition were well contested.

For a collection of fruit Mrs. Vivian, Singleton (gr., Mr. Harris), was placed 1st, with good Salway Peaches, black and white Grapes, well finished Black Jamaica and Queen Pines, Melons, fine dishes of Pears, Apples, Medlars, &c.; T. T. Lewis, Esq., Bridgend (gr., Mr. W. Richardson), 2d.

For a collection of hardy fruits, Sir H. H. Vivian secured 1st honours; and for that of vegetables, Mrs. Vivian, Singleton, was in like position.

In this hall was exhibited an interesting collection of entomological subjects, lent by J. T. D. Llewellyn, Esq., Penllegare, who also lent some nice groups of well-bloomed greenhouse plants, amongst which we noted particularly good plants of Primula obconica.

The floor of the larger hall was devoted to groups of plants as above noted, and the arrangement and general effect were particularly good.

The 1st prize went to the group from Singleton, in which Chrysanthemums fitly predominated, crowned by a lofty Tree Fern, and interspersed with Adiantum farleyensis, Nephrolepis, &c., and bordered with Calanthes, Cypripediums, &c.; T. Cory, Esq., Sketty (gr., Mr. J. Lodge), 2d, with a more general arrangement of Palms, Cycads, Ferns, Crotons, Dracænas, Marantas, &c.; 3d, Richard Hughes, Esq., Ynistawe (gr., Mr. Williams), with a group nicely relieved by large Seville Oranges well laden with fruit. Seven prizes were offered in this class, and they were all competed for and obtained by fairly good groups, which were very effective for the embellishmed of the hall, but which contained no subjects requiring especial notice. It only remains to congratulate Captain Colquhoun, the Chairman of committee, and the Hon. Secs. Messrs. Manaton and Williams, on their indefatigable perseverance in securing so good an exhibition. *A Correspondent.*

## YORK ANCIENT SOCIETY of FLORISTS: CHRYSANTHEMUM EXHIBITION.

**November 25, 26, and 27.**

WELL done, York Florists! is the verdict that must be passed upon this exhibition. In the spacious exhibition building of Fine Arts which is near to the Minster, and affording ample space for the purpose, was this exhibition arranged by Mr. J. Lazenty, the secretary, and his assistants; and regard being had to the lateness of the season, in one of the most backward districts of England, it was an admirable show, thoroughly representative and characterised by high quality. The specimen plants, of which there were a large number, were arranged on the ground floor under the galleries, where there is abundance of light on a clear day, but a lack of it when it is a dull one. A line of tables running down the centre of the building accommodated the cut flowers, table plants, &c.; another line of tables running parallel with the platform was laden with fruits, and in the galleries on both sides were to be found the vegetables, collections of Pears, Apples, &c. The spacious lobby leading to the main building accommodated the groups of plants arranged for effect, and the specimen Palms, Ferns, &c.; while the groups of Chrysanthemums arranged for effect, were arranged in circles in the main building, between the line of tables and the specimen plants. Chrysanthemums always show up well by gaslight, and at night, there being a superabundance of colour, the effect was considerably heightened.

### CHRYSANTHEMUM PLANTS.

The best group of Chrysanthemums arranged for effect, competing for the Silver Cup given by the Lord Mayor of York, came from Dr. Baker, Friends' Retreat, York; Mr. Alderman Close, Dringhouses, was 2d; and Mrs. Gutch, Holgate House, York, was 3d. As these plants were arranged in circles, some difficulty was experienced in making them face well all round, and it would be better in the future, and more satisfactory to the exhibitors, if these groups were backed against a wall, as in the case of the miscellaneous groups of plants, also arranged for effect, in the corridor.

There were six collections of nine specimen Chrysanthemums, incurved and reflexed, Dr. Baker was 1st with well-flowered plants of Christine, George Glenny, Mrs. G. Rundle, Mrs. Dixon, Prince Alfred, Baron Beust, Guernsey Nugget, Miss M. Morgan, and King of Crimsons—an even, well-balanced lot; 2d, Mr. Alderman Close; 3d, Dr. Baker.

With six plants Dr. Baker was 1st with excellent specimens of John Salter, Mrs. Dixon, Mrs. Sharpe, Christine, Guernsey Nugget, and Mrs. Forsyth; 2d, Mrs. Gutch; 3d, Mr. J. T. Hingston, Clifton. Dr. Baker had the best three plants, staging King of Crimsons, Guernsey Nugget, and Julia Lagravere; Mr. C. B. Lamb was 2d; 3d, Miss Stewart. Dr. Baker had the best specimen, staging an excellent John Salter; Mrs. Gutch being 2d with George Glenny. Dr. Baker had the best nine plants of Japanese Chrysanthemums, staging well-grown and bloomed examples of Diamond, James Salter, Delicata, Peter the Great, Flambeau, Elaine, Etoile du Midi, Fo Kio, and Hiver Fleur. The 2d prize was withheld. Dr. Baker had the best six, having capital specimens of Elaine, James Salter, Peter the Great, Hiver Fleur, Dr. Macary, and Dr. Masters; 2d, Mr. J. T. Hingston; 3d, Miss Stewart. Dr. Baker also had the best three, staging James Salter, Elaine, and Dr. Masters; Mr. Alderman Close was 2d, and Miss Stewart 3d. Dr. Baker had the best specimen, and Mrs. Gutch was 2d.

Dr. Baker won the 1st prizes for the best nine, six, three, and single specimen pompons; indeed, his gardener, Mr. T. Dawe, was invincible on this occasion. His nine plants consisted of Mr. Astie, Mdlle. Marthe, White Cedo Nulli, Model of Perfection, Golden Circle, and Bijou d'Horticulture. His six plants consisted of Lilac Cedo Nulli, Golden ditto, White ditto, Lizzie Holmes, and Bijou d'Horticulture. His three, Golden Cedo Nulli, Lilac ditto, and Mdlle. Marthe. His single specimen, White Cedo Nulli. Mr. Hingston was 2d with nine plants, Miss Stewart with six, and also with three; and Mrs. Gutch 2d with the single specimen.

Dr. Baker was the only exhibitor of three plants of large Anemone-flowered Chrysanthemums, and he had the best specimen also, staging a good plant of Gluck; also the best specimen pompon Anemone, staging Mr. Astie.

### MISCELLANEOUS PLANTS.

Some charming groups, arranged for effect, were staged, and they consisted of coloured foliaged plants mainly, with a few flowering subjects dotted among them. The best came from Messrs. A. Simpson & Son, Haworth Nurseries, York, a collection grouped with great taste and skill; Mr. J. T. Hingston was 2d; and Mr. T. S. Brogden, Heworth Hall, 3d.

Mr. T. Hutchinson, Eggleston, had the best six plants of Chinese Primroses; Mr. E. Bell being 2d, and Mrs. Gutch, 3d. Mr. Bell was the only exhibitor of double varieties, getting 1st with six small, but good plants. Cyclamen Persicum were poorly shown.

Plants for dinner-table decoration were both numerous and good; Mr. R. Wyse, Auburn Hill, Malton, was 1st, Messrs. Simpson & Son being 2d, and Mr. T. S. Brogden 3d.

Mr. T. Brogden had the best six exotic Ferns, and Miss Stewart 2d; these formed effective groups in the entrance corridor.

Messrs. Simpson & Son had the best specimen Palm, and Mr. Hingston the best specimen Dracæna, D. Veitchi being the type mostly shown.

Some fairly good plants of Chrysanthemums were shown in the amateurs' division; Mr. R. Hudson, Acomb, having the best three and the best single specimen.

### CUT FLOWERS.

Owing, probably, to the dull weather, some exhibitors who had entered failed to show, but there was a good display of blooms. The best thirty-six, composed of eighteen incurved and reflexed and eighteen Japanese, came from Mr. R. F. Jameson, who had good examples of the best of either section; 2d, Mr. D. Wilson, Cottingham, who had also good blooms; 3d, Mrs. M. Firth, Oakbrook, Shelfield.

The best twelve incurved and reflexed, came from Mr. Alderman Richardson; 2d, Mr. R. F. Jameson; 3d, Miss M. Firth.

The best six came from Mr. Alderman Richardson, Miss Moore being 2d.

Japanese Chrysanthemums were highly effective: Mr. Alderman Richardson was 1st with twelve blooms; 2d, Mr. D. Wilson.

Mr. R. F. Jameson had the best six, staging admirable examples; 2d, Mr. Alderman Richardson.

Pompon Chrysanthemums in a cut state were scarcely shown, and these in indifferent form. Mr. D. Wilson had the best twelve large flowering Anemone type; 2d, Mr. Alderman Richardson.

The Silver Medal of the National Chrysanthemum Society was awarded to the premier plant in the show—a fine specimen of John Salter, shown by Mrs. Gutch. The premier bloom was Lord Wolseley, shown by Mr. D. Wilson.

### MISCELLANEOUS CUT FLOWERS.

Boxes of twelve bunches were finely shown. The best came from Mr. J. H. Smith, Leeds, who had grand examples of Calanthe Veitchi, Eucharis amazonica, Zygopetalum Mackayi, Cypripedium insigne, C. Rœzlii, white and red Lapagerias, Rondeletia speciosa major, Ixora Fraseri, Poinsettia pulcherrima, and two others; 2d, Mr. A. Pease, Darlington, with a very good lot indeed; 3d, Mr. R. Bell.

Camellias, hand bouquets, or Chrysanthemums, and also of other flowers, button-hole bouquets, and an epergne for the table were also shown.

A very fine lot of cut blooms of Chrysanthemums, not for competition, came from Mr. T. B. Morten, Mowden Bridge Nursery, Darlington, thoroughly representative and highly interesting. These were not for competition.

### FRUIT.

The best six bunches of Grapes, in three varieties, came from Mr. H. J. Clayton, The Gardens, Grimston Park, Tadcaster, who had well finished and very fine examples of Muscat of Alexandria, Alnwick Seedling, and Gros Colmar; 2d, Mr. Cochrane, Aldin Grange, Durham, with very fine Gros Colmar and Alicante, but weak Muscat of Alexandria; 3d, Mr. G. B. C. Yarborough, Campsmount, Doncaster, with Black Hamburgh, Gros Colmar, and Alicante.

Prizes offered by Messrs. Backhouse & Son, nurserymen, York, for collections of Apples grown north of the Tweed, brought nine lots averaging fifty to sixty varieties each. The best came from Mr. J. T. Hingston, Mr. A. Pease being 2d, and Mr. D. Wilson 3d.

Similar prizes were offered for the best assortment of Pears grown north of the Tweed, three collections being staged. Mr. A. Pease was 1st, Mr. T. M. Weddell 2d, and Mr. R. Bell 3d. The following were in good form, the season considered:—Brockworth Park, Knight's Monarch, Durandeau, Van Mons' Léon le Clerc, Nouveau Poiteau, Beurré Diel, B. Baltet, Passe Colmar, Soldat d'Esperen, Josephine de Malines, Marie Louise, Glou Morçeau, Louise Bonne of Jersey, Easter Beurré, Beurré d'Amanlis, and B. d'Aremberg.

Mr. Weddell had the best six culinary Apples, staging a large variety named Tim Shilling; Mr. A. Pease being 2d, with Peasgood's Nonsuch; and Mr. J. D. Hutchinson 3d, with Warner's King.

Mr. H. Stourton was 1st, with a dish of dessert Apples, staging good Cox's Orange Pippin; Mr. Oglesby, Micklegate, York, being 2d.

Mr. A. Pease had the best six dishes of Apples, having very good examples of Potts' Seedling, Lord Derby, Emperor Alexander, Peasgood's Nonsuch, Blenheim Orange, and Greenup's Pippin; Mr. R. Wyse was 2d.

Mr. T. M. Weddell had the best six dishes of Pears, staging capital fruit of Durandeau, Clapp's Favourite, Marie Louise, Beurré Diel, Brockworth Park, and Louise Bonne of Jersey; 2d, Mr. A. Pease, very fine.

Mr. Pease had the best single dish, staging excellent fruit of Marie Louise, and this variety was also 2d and 3d.

### VEGETABLES.

Vegetables were largely shown. We briefly refer to them first of all, to praise their high-class quality throughout; and second, to mention a few of the leading prize winners

Mr. A. Pease had the best eight dishes; Mr. S. Taylor being 2d.

Mr. R. Wyse was 1st with six dishes; Mr. J. Kirk being 2d.

The best six dishes of Potatos came from Mr. C. Hammond, who had handsome samples of Porter's Excelsior, Magnum Bonum, Lapstone, Schoolmaster, Alpha, and Woodstock Kidney; 2d, Mr. J. D. Hutchinson.

Messrs. Backhouse & Son exhibited, not for competition, a collection of ninety-two dishes of Apples, and the leading varieties may perhaps be taken as representing the best sorts for growth north of the Tweed. They were Ribston Pippin, Tower of Glamis, Pott's Seedling, Peasgood's Nonsuch, Nancy Jackson, Mère de Ménage, D. T. Fish, Fearn's Pippin, Golden Reinette, Chaplin's Pippin, Annie Elizabeth, Cellini, New Hawthornden, King of Pippins, Rymer, and Royal Russet.

Mr. Henry Deverill, of the Seed Stores, Banbury, had a wonderful display of Onions, staging several hundreds of extraordinary bulbs, among them Rousham Park, Anglo White Spanish, and the Wroxton were perfect models, averaging 1½ lb. each in weight. Several stems of the Wroxton strain of Brussels Sprouts were also shown, and it is difficult to imagine a better. This collection attracted a good deal of attention, and it was awarded a Special Prize and First-class Certificate.

## CLONMEL CHRYSANTHEMUM AND FRUIT SHOW.

On Thursday, November 26, was inaugurated in this town what we hope will in future be an annual event of no mean importance. With so many circumstances to divert attention, it required no ordinary courage for the gentlemen who formed the committee to start a Chrysanthemum and fruit show, and then, as if to throw a further "damper" on their exertions, the weather was most unpropitious. Despite these discouragements on all grounds, the show was pronounced an unqualified success, while the number of visitors, at least in the early afternoon, exceeded expectation. The arrangements in the ballroom of the courthouse were simply perfect—which can seldom be said for most shows—and reflected much credit on the managing committee.

On entering the large room the visitors at once had reason to admire not alone the admirable way in which the flowers and fruits were arranged, but also the tasteful way in which the room itself was decorated. The festooning of the windows, walls, &c., in crimson and white, had an exceedingly pleasing effect, and harmonised well with the dark green foliage and rich colouring of the mass of exotic and other plants which filled the central tables and different stands around the room. As to the exhibition, we may mention, before passing to a more detailed description, that it was one of which Clonmel and its vicinity may well feel proud. Indeed, one who has visited the Chrysanthemum shows at the Temple Gardens in London freely stated that our local show, though by no means equal in extent, was fully up to the merits of its great London contemporary in point of merit.

The schedule was much more modest than it need be, for some of the exhibitors could readily have staged forty-eight varieties instead of twelve; but competition was invited, and large and small growers had almost similar opportunities. Six classes were provided, and, short as the notice was, the number of competitors in each does credit to the floral resources of the surrounding district. Taking them *seriatim*:—

Six Chrysanthemums in pots.—1st prize went to Mr. F. Clibborn, Anner House (gr., Mr. P. Crowley); 2d, George Gough, Esq., Birdhill (gr., Mr. T. Bulfin). Other very creditable and floriferous groups were shown by Messrs. Boyd and Phelan, but none were either trained or grown as specimens, though suiting admirably for conservatory decoration. Many of the blooms were exhibition size. The next five classes comprised the cut bloom section, and formed the *piece de resistance* of the show.

Twelve incurved.—Mr. T. Phelan—already named (gr., Mr. P. Halpin), was a good 1st, with twelve distinct varieties. As this exhibit would stand a fair chance at any show in the kingdom, and as the varieties are typical, we give the names in the order "set up":—Empress of India, Golden Queen of England, Lord Wolseley, Mr. Bunn, Lady Hardinge, Jeanne d'Arc, Nil Desperandum, Princess of Wales, Bronze Jardin des Plantes, Golden Empress, and Alfred Salter. The 2d stand was very creditable, but in size a few "points" behind, the prize going to Mrs. Malcomson, Minella (gr., Mr. John Crehan). The blooms in both were, in many instances, similar varieties. Empress of India was particularly good, Mr. Phelan's being 16 inches in circumference, and 4½ inches deep. Besides the blooms already named Mr. Crehan had British Queen of England, White Venus, and the three members of the Rundle family—all well done and very finished. If size alone were the test, nothing could have taken a prize from Mr. F. Clibborn, but his immense blooms were too far gone. There were three other very creditable stands with many blooms of superior merit.

Twelve Japanese.—The 1st prize went easily to Mr. Phelan; the 2d prize went to H. S. Boyd, Esq. (gr., Mr. J. Keating), being hard pressed by Mr. Clibborn and Mrs. Malcomson, already named, winning by only a few points. As Mr. Boyd's were in most instances new varieties of last year's introduction, we mention the most notable:—Brise du Matin, Anna Delaux, Madame Sevin, Beauté des Jardins, and Mons. Léon Brunel.

Reflexed and Anemone-flowered. — Mr. Boyd here came 1st and Mr. Phelan 2d, both staging some capital blooms of Marginatum, Fleur de Marie, &c., the former stand having some of the fine varieties recently introduced.

Twelve pompons (in bunches).—For this there were three entries, and the prizes were as in last section. Mr. Boyd had three gems of the fimbriata class, "perfect little cushions of beauty," as one lady described them.

Twelve blooms, any variety.—We regard this as a most important class, intended for amateurs who have no gardeners, and which would have been well filled but for the short notice. Mrs. Jellicoe, Cahir, got 1st prize, with a creditable stand. We would suggest that next year this class be subdivided for those who grow under glass and in the open air.

Lastly, in this department came the disposition of the large Silver Medal so kindly placed at the disposal of the committee by Messrs. Saunders, the spirited proprietors of the Friars' Walk Nurseries, Cork, for the best collection of Chrysanthemums in the show. As Mr. Phelan had already got 1st prizes in the principal classes, incurved and Japanese, his right to this additional trophy was unquestioned.

Before passing from the floral to the fruit sections we must not omit noticing the extra exhibits, which would alone have made an independent flower show. In cut blooms of Chrysanthemums (not competing) Mr. Phelan had two stands of eighteen varieties, Japanese and incurved, many of them new varieties, which with those competing made a total of forty-eight distinct varieties, all of exhibition form, size, and substance, well illustrating the great resources of spring gardens.

In the same way from Anner House Mr. Clibborn contributed thirty-six distinct varieties, all splendidly finished, one of his stands of twelve having six new Japanese and six incurved, well deserving the notice they received. In new varieties, large as were the exhibits of the gentleman named, they were behind Mr. Boyd, who had many gems that even experts had seen for the first time. His contributions of plants to the general display, too, were admirable, especially a large central Palm. The largest bloom in the show came from Minella. Here must be specially noticed the contributions of George Gough, Esq., Birdhill, among the rest several rare Orchids, such as the Odontoglossum Alexandræ magnificum, Lælias, &c., Poinsettias, Crotons, Dracænas, two immense Adiantum (Farleyense), &c.; while a general collection of Adiantums, gold and other Ferns came from Anner House. Cordylines, Bamboos, and many brilliant foliage plants were interspersed with the best effect, while vacant spaces were filled with a collection of Cypripediums from Anner House.

### THE FRUIT COLLECTIONS.

The second section of the show was devoted to fruit collections. Remembering the time of the year, and that no previous preparation had been made for this exhibition, the display was a credit to our locality. No less than five collections were staged, and these filled one side of the ball-room completely. The 1st prize was well won by Mrs. Malcomson, Minella (gr., Mr. Crehan), who had Melons, two fine bunches of two varieties of Grapes, and a superb collection of Pears and Apples. Of the Pears may be named Doyenné Boussoch, Duchesse d'Angoulême, Beurré Diel, Hampden's Bergamot, Beurré Rance, &c., all splendid specimens. Mr. Crehan had also two dozen varieties of Apples of fine size and highly coloured—baking, or kitchen, and dessert. Of unusual size were Hawthornden, Mère de Ménage, and Alfriston, very beautiful Fearn's Pippin, Manx Codlin, and the now too seldom seen Jolly Beggar. The 2d prize, for the most select and varied collection, went to Captain Bagwell, D.L., Marlfield (gr., Mr. Wm. Cleary). It included several dishes of Pears, Nuts, Medlars, kitchen and dessert Apples in variety—a rich and most creditable display.

If there was a prize for Apples alone it would have been hard to beat Mr. Boyd's two dozen varieties, some of them of immense size and rich colour.

Equally creditable were Mr. Phelan's twenty dishes or more than a dozen distinct varieties.

Special mention must be made of the two large baskets, not for competition, sent from her beautiful garden at Coolgreany, by Mrs. Crean. Many varieties were of immense size and of the most brilliant colours. *Clonmel Chronicle, Tipperary and Waterford Chronicle.*



# The Rosery.

## THE ROSE GARDEN IN WINTER.

NEITHER pleasant to eyes or nose is the aspect of what was in the month of June a scene refreshing and gladdening to both, for the Rose requires such treatment in winter as militates sadly against the appearance of the garden, and this is one of the reasons why it is so desirable that instead of being mixed up with other flowers, it should have a place to itself.

In preparing the beds for winter, two things have to be guarded against—the rough action of high winds, and the destructive action of frost. With regard to the former, where long shoots have been made the wind is apt to get hold of them and so to keep loosening the plant that a hole is made by the crown and thus water gets in it and rots the roots, while the continued moving about by the wind loosens the roots and they do not do their work well. To remedy this it will be needful in the first place to shorten the shoots about 1 foot or 18 inches; this will give the wind less play and will not be sufficient to cause them to break out too early, which has been urged as an objection by some against the simple process; in fact, one excellent authority and large grower advocates the complete pruning of Roses before Christmas: this I cannot agree with, for if anything of a severe frost sets in the wood must be injured, and should it be a mild winter I think that the Roses would start much sooner into leaf and so expose themselves to the spring frosts of May which generally do so much injury. It will also be well to tie these long shoots to a stake and so to secure the plants; where plants are bushy this may be done also, and in exposed positions this autumn staking is quite a necessity.

But frost is, after all, the real enemy with which we have to contend. When standards were more grown than they are now, it was a much more serious matter; thus after the terribly severe winter of 1881 millions of standards were killed in the Rose growing districts of Brie Comte Robert, and indeed the locality has never yet recovered its rosy character; but now few Rose growers care for standards, and especially for the reason that they are so liable to be injured by frost, whereas if care is given to dwarfs, whether on the Manetti or Brier, the evil effects of frost may, to a certain and considerable extent, be warded off. I have found it to be a good plan first of all to draw some of the earth round the collar of the plant, and then carefully to mulch all the bed with manure. Where manure is scarce (as it is not with me) it may be sufficient to place it round each plant, but where plentiful the whole bed had better be covered. The manure best suited for this purpose is pig-dung. This is very strong, and the Rose is a very gourmand, a gross feeder, and the stronger it is the better it likes it. Moreover, it is not so liable to create fungus as horse-manure. I lay it evenly over the beds, and have continually to watch the blackbirds and thrushes who are very fond of scratching amongst it for grubs and worms, which, however, it does not contain in the same quantity as other kinds of manure. The autumn and winter rains will wash down into the soil the fertilising salts and other matter, and in the spring the long straw may be raked off, and the short manure which remains be gently forked into the beds. I found last year that the raking off my rosery made a very respectable heap, on which I planted Vegetable Marrows, which gave me a most bounteous supply. This process of mulching is at first a very unpleasant one to those whose olfactories are susceptible, and once I very nearly drove a relative away whose sense of smell was very acute by indulging in this proceeding when she was with us; but after a little while this goes off when rains have come, and you have the satisfaction of knowing that your favourites are benefiting by it. Where it is dangerous to plant Tea Roses in the autumn, or where, as is sometimes the case, they are considered to require more protection than hybrid perpetuals, it will be well to lay them in, so that they can be covered over completely in severe weather, and planted out in the spring. I have found that Tea Roses so heeled make very good growth if carefully attended to; and I have seen some splendid boxes of blooms shown by Mr. Prince, of Oxford, fine plants, which had only been planted in May.

When Teas and Noisettes are grown upon walls, and especially when they are used as climbing Roses, it will be necessary to be watchful, and to be ready to protect them in case of frost; it will not do to cover them up too soon, as they are thereby induced to start early, and to get cut with the spring frost—this is specially the case when the wall faces the east. I feel now that if I had so protected my finest plant of Rêve d'Or, I should not have had to have deplored the cutting of it down to the ground; it will not be needful to cover with thick material. There is nothing better for the purpose than what is known as scrim, or papering canvas, it is tougher than tiffany and not so easily torn, while it is quite sufficient to sift the frost and cold cutting winds, and will not encourage premature growth.

The weather has, up to this date (November 25), been so open, that where these precautions have not been already taken, they may be done now, and, like sailors before a gale, having battened down the hatches and made all preparation, they may have the satisfaction of looking forward with some degree of confidence, as they say "All taut." *Wild Rose.*"

## COLONIAL NOTES.

EXPERIMENTS AT TIPLING.—Mr. J. Aitken Middleton, of Tin-kong, reports as follows to the Agri-Horticultural Society of India:—

"*Vanilla.*—I think I told you that I had planted this in virgin jungle with only the undergrowth cut down. It came on splendidly, but I regret to say that the squirrels took a liking to it, and ate off the shoots as they came out. I have removed it to a more open space, and have planted artificial shade over it, and I am glad to say it is now doing very well. Of course this transplanting has checked growth considerably, and will, I fear, cause delay in blossoming and fruiting, but I have little fear for it now.

"*Ceara Rubber.*—The last lot has germinated fairly well; after it is germinated it seems to have only one enemy, namely, the mole-cricket. This fellow destroys them when they are 3 to 4 inches high. I had forty plants destroyed in one night. The only tree that came to any size here (Tin-kong) out of the very first lot of seed you sent me, has begun to flower. I regret to tell you, however, that during a thunderstorm some two nights ago the flowering branch was broken off. This branch I have cut in pieces and planted to see if they will grow. In March one of the trees planted at Tipling was blown down in a gale; I had it cut in pieces and planted at once, and am glad to say that all the cuttings are doing well. I should now be obliged by your giving me some information as to when, where, and how the trees ought to be tapped.

"*Divi-Divi.*—As I told you some time ago, the tree grows very freely here. Nearly every seed you sent me has germinated. The few trees I have here have not grown much in length lately, but have thicked about the roots, and have spread out on top. They seem to like the sun, as all are turned towards the south and south-west. Two are specially noticeable in that way, being spread out like trained Plum trees facing south-west, not a leaf on the other sides. There is no shade anywhere near them, so I cannot account for this way of growing.'

### JAMAICA: FORMATION OF A HORTICULTURAL SOCIETY.

*Kingston, Jamaica.*—For some five years annual flower shows have been held at Kingston, largely assisted and supported in the way of plants for ornamental purposes by the botanical establishment of the island. Recently a movement has been organised for the furtherance of horticultural matters of a permanent character under the title of the Kingston Horticultural Society. In this the promoters of the flower show movement have heartily joined, and a sum of £53 has been handed over to the new Society.

At the inaugural meeting held on October 6 rules were passed and officers appointed for the ensuing year as follows:—President, the Hon. H. J. Kemble Vice-President, D. Morris, M.A., F.L.S.; Treasurers, P. E. Auvray and W. Bailey; Hon. Secretary, J. J. Bowrey, F.I.C., F.C.S. The Society starts with 120 members, and meetings are to be held monthly for the reading of papers and discussions bearing on such practical aspects of horticulture as obtain at Kingston and the neighbourhood. Since the inauguration of the annual flower shows a marked improvement has been effected in the cultivation of flowers, fruits and vegetables, in the area affected by them. The new Horticultural Society, which is the natural outcome of this increased activity, has therefore a useful career before it. The next meeting of the Society is fixed for November 3, when Mr. D. Morris, the Director of the Botanical Department, will read a paper on "Tropical Gardening." At the close of each meeting members will bring specimens of flowers, fruits, and vegetables for exhibition and to be named; and in this manner the meetings will be rendered of great practical value, and at the same time be the means of diffusing useful and accurate information on horticultural matters amongst members and the community at large.

### DROUGHTS IN JAMAICA.

Mr. Morris, who seems never to leave a stone unturned in his desire to promote the welfare of the island in which he fulfils the office of Colonial Botanist, has published a lecture on the occurrence of droughts in Jamaica, their probable causes, and the means to be taken to remedy them. The highest annual rainfall (180.1 inches) is in the Government Cinchona plantations, at an elevation of 4850 feet, while the lowest is more than 8.9 inches, at the Palisados plantation, 6 feet above sea-level. Mr. Morris discusses the meteorological and physical conditions of the island, the influence of forests on rainfall as observed in various countries, the effects of improvident destruction of woods, principally by fire—to which he attributes much of the evils complained of in Jamaica; and concludes by making certain practical suggestions for the preservation of springs, rain-water, and humidity.

### THE POTATO ROT, &c.

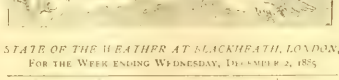
*Minnewing, Ontario.*—After an unprecedentedly wet season it need not be a matter of surprise that some Potatos in low situations should be affected with rot, but we regret to state that both in high and low situations on sand and clay, a large proportion of our Potatos is lost. Some fields have all been bad. Such a calamity has not befallen us before. Our fall Wheat crop has been a fair one; the spring Wheat poor, and in many cases a failure. Barley and Peas might be described as an average. Apples have been various, some remarkably abundant and others deficient. Common Plums were plentiful, but finer kinds scanty, and many trees killed by frost, and this to an extent previously unknown. *M. Morren.*

### BAMBOOS SEEDING.

Some Bamboos of the "Katang" variety (Bambusa arundinacea, Retz.) having flowered in Ghazipore, North-Western Provinces, Mr. Nichols, C.S., had the seed collected for distribution. Mr. Nichols advises sowing in shallow pans, or in seed-beds under shelter. Transplant to a nursery bed when the seedlings are about 2 inches high. Again transplant when about 7 inches high, and keep till finally located in a place where they can be frequently watered. The Katang likes a rather sandy alluvial soil, though it will do well on "Regur," or black cotton soil. At Jabbalpore, where planted mostly for ornament, the plan which seems to have succeeded best of all was to plant in a circle. So far as I can see, there will probably be no chance of getting more seed for some forty years. This variety is believed to have a life period of about fifty-five years. It often attains the height of 60 feet under favourable circumstances. In 1836 Captain Sleeman recorded in this Society's Journal (*Transactions*, vol. iii.) the flowering and death of all the Bamboos in Debra Doon, and states that it is a characteristic of the Bamboo that all the produce of the same seed will run to seed and die in the same season, without reference to the season in which they may have been transplanted from original stock. Dr. Brandis seems to confirm this in his *Forest Flora*, and says isolated clumps may be met occasionally, "but, as a rule, all clumps in one district come into flower simultaneously, a few clumps flowering in the previous and some in the succeeding years." So it is probable that there will be a widespread flowering next season. *Journal of the Agri-Horticultural Society.*

## Obituary.

MR. DANIEL HIGFORD DAVALL BURR, of Aldermaston Court, near Reading, died on Sunday last at his own residence in Eaton Place, London. The deceased gentleman was the eldest son of the late Lieutenant-General Daniel Burr, by his marriage with Mary, daughter and heiress of Mr. James Davis, of Chepstow, Monmouthshire, and was born in 1811. He was educated at Eton and at Christ Church, Oxford. He was for a time a member of the Council of the Royal Horticultural Society. About the year 1850 he purchased the estate of the Congreves, at Aldermaston, where he pulled down the old court and erected a magnificent new mansion in the antique style.




*STATE OF THE WEATHER AT BLACKHEATH, LONDON,*
FOR THE WEEK ENDING WEDNESDAY, DECEMBER 2, 1885

| Month and Day | Barometer: Mean Reading Reduced to 32° Fahr | Barometer: Departure from Average of 18 years | Temperature of the Air: Highest | Temperature of the Air: Lowest | Temperature of the Air: Range | Temperature of the Air: Mean for Day | Temperature of the Air: Departure from Average of 50 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Degree of Humidity. Sat. = 100 | Wind: Average Direction | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov | In. | In | ° | ° | ° | ° | ° | ° | | | In |
| 26 | 29.49 | −0.50 | 50 | 54 | 10 | 52 | +5 | 46 | 95 | E | 0.48 |
| 27 | 29.49 | −0.31 | 51 | 46 | 10 | 48 | +6 | 42 | 83 | S.W. | 0.18 |
| 28 | 29.15 | −0.56 | 57 | 24 | 75 | 36 | +11 | 04 | 90 | S.W. | 0.13 |
| 29 | 29.45 | −0.26 | 56 | 33 | 75 | 48 | +6 | 47 | 96 | S.W. to S.S.W. | 0.21 |
| 30 | 29.62 | −0.11 | 57 | 54 | 18 | 48 | +6 | 47 | 96 | S.W. | 0.29 |
| Dec 1 | 30.04 | +0.31 | 48 | 37 | 11 | 42 | +6 | 38 | 87 | S.W. | 0.01 |
| 2 | 30.07 | +0.33 | 44 | 7 | 37 | 23 | +5 | 39 | 92 | S.W. | 0.00 |
| Mean | 29.56 | −0.16 | 52 | 1.41 | 11.0 | 47 | 0 | +5.3 | 44 | 2 | 90 | S.W. | 1.30 |

Nov. 26. Rain from early morning.
" 27. Rain in early morning; fine day.
" 28.—Very dull day; fine clear night.
" 29.—Very dull throughout.
" 30.—Rain falling nearly all day.
Dec. 1.—Very fine day.
" 2. Very fine day.

LONDON: *Atmospheric Pressure.*—During the week ending November 28, the reading of the barometer at the level of the sea decreased from 29.50 inches at the beginning of the week to 29.45 inches by 5 P.M. on the 22d, increased from 29.63 inches by 9 A.M. on the 23d, decreased to 29.48 inches by 1 P.M. on the same day, increased to 29.70 inches by 9 A.M. on the 24th, decreased to 29.35 inches by 1 P.M. on the 25th, increased to 29.45 inches by 9 A.M. on the 27th, decreased to 29.27 inches by 5 P.M. on the 26th, increased to 29.66 inches by 5 P.M. on the 27th, decreased to 29.29 inches by 9 A.M. on the 28th, and was 29.40 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.46 inches, being 0.57 inch lower than last week, and 0.41 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 57°.2, on the 28th; on the 24th the highest temperature was 39.5. The mean of the seven high day temperatures was 48°.

The lowest temperature was 34°.8, on the 22d, on the 28th the lowest temperature was 47°.5. The mean of the seven low night temperatures was 40°.8.

The greatest range of temperature in one day was 12°.2, on the 22d; the smallest on the 24th was 3°.5. The mean of the seven daily ranges was 7°.2.

The mean temperatures were, on the 22d, 41°.4; on the 23d, 40°.3; on the 24th, 38°.2; on the 25th, 44°.1; on the 26th, 47°.2; on the 27th, 48°.4; and on the 28th, 52°.6; of these the first three were below their averages by 0°.1, 1°.4, and 3°.4 respectively, and the last four were above by 2°.5, 5°.6, 6°.8, and 11° respectively.

The mean temperature of the week was 44°.6, being 7°.8 higher than last week, and 3° below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 77°.5, on the 27th. The mean of the seven readings was 55°.5.

The lowest reading of a minimum thermometer placed on grass was 30° on the 23rd. The mean of the seven readings was 37°.

*Rain.*—Rain fell on five days to the amount of 1.37 inch.

ENGLAND: *Temperature.*—During the week ending November 28, the highest temperatures were 59° at Cambridge, 57°.2 at Blackheath, 57° at Truro; the highest at Sunderland 49°, at Bolton, Preston, and Newcastle 52°. The general mean was 54°.3.

The lowest temperatures were 33°.1 at Bolton, 34° at Wolverhampton and Preston; the lowest at Plymouth was 43°, at Truro 40°, at Brighton 39°.5. The general mean was 36°.9.

The greatest ranges were 23°.5 at Cambridge, 22°.4 at Backheath, 21° at Hull; the least ranges were 12°.8 at Plymouth, 13° at Sunderland and Newcastle. The general mean was 17°.4.

The mean of the seven high day temperatures was highest at Truro, 55°.3, at Plymouth 53°.3, at Brighton 49°.9, and was low at Wolverhampton, 44°.5, at Bradford 44°.6, at Preston 45°.3. The general mean was 47°.8.

The mean of the seven low night temperatures was highest at Truro, 46°.4, at Plymouth 45°.3, at Brighton 42°.7; and was lowest at Wolverhampton, 37°, at Bolton 37°.2, at Bradford 38°.9. The general mean was 40°.6.

The mean daily range was greatest at Truro, 8°.9, at Hull 8°.4, at Bolton 8°.3; and was least at Nottingham 5°.4, at Bradford 5°.7, at Leeds 6°.1. The general mean was 7°.2.

The mean temperature was highest at Truro, 50°.7, at Plymouth 49°.1, at Brighton 46°.1; and was lowest at Wolverhampton, 40°.4, at Bolton 41°.1, at Bradford 41°.6. The general mean was 44°.

*Rain.*—The largest falls were 27.3 inches at Truro, 2.68 inches at Plymouth, 2.49 inches at Brighton; the smallest falls were 1.16 inch at Cambridge, 1.20 inch at Prestory, 1.26 inch at Newcastle. The general mean fall was 1.71 inch.

SCOTLAND: *Temperature.*—During the week ending November 28, the highest temperature was 50°, at Glasgow; at Paisley the highest temperature was 47°.2. The general mean was 48°.7.

The lowest temperature in the week was 32°, at Perth; at Paisley the lowest temperature was 36°.9. The general mean was 35°.

The mean temperature was highest at Leith, 41°.8; and lowest at Dundee, 40°.1. The general mean was 41°.

*Rain.*—The largest fall was 1.87 inch, at Greenock; the smallest fall was 0.78 inch, at Leith. The general mean fall was 1.23 inch.

JAMES GLAISHER, F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE IN THE United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, November 30, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* has been dull, with

frequent and heavy rain in England and the S. of Ireland, but somewhat finer in Scotland and the N. of Ireland.

The *temperature* has been about equal to the mean in "Scotland, N.," but above it elsewhere; in eastern, central, southern, and south-western England the excess has been as much as 6° or 7°. The maxima, which were generally registered on the 29th, ranged from 49° to 53° in Scotland, from 56° to 59° in Ireland, and from 54° to 59° over England. The minima, which were recorded on different days in the various districts, ranged from 30° in "England, N.W.," to 36° in "England, S." and "Scotland, W.," and to 45° in the "Channel Islands."

*Rainfall* has been less than the mean in "Scotland, N.," but more in all other parts of the kingdom. In most of the English districts, in the S. of Ireland, and over the English Channel, the excess has been very large.

*Bright sunshine* has been very deficient in nearly all places, the percentages of the possible duration varying between 3 and 12 in most districts to 19 in "Ireland, N." and 29 in "Scotland, N."

*Depressions Observed.*—Three depressions appeared within our area during this period. The first was shown off the south of Ireland on the 24th, but it remained almost stationary until the night of the 25th —26th, when, having grown deeper, it travelled northwards outside our western coasts. The second moved quickly in a north-easterly direction over our islands on the 28th, disappearing over the south of Scandinavia on the following day. The third moved with rather unusual rapidity north-north-easterly outside our western and north-western coasts on the 29th, and disappeared to the northward of Norway. Very strong gales from between east and south-east were experienced on our northern coasts on the 26th and 27th, and strong winds or gales, at first from east, and afterwards from the south-westward, in most other parts of the kingdom. During the remainder of the period the wind was generally south-westerly to westerly, and at times increased to a strong breeze or gale.

## Answers to Correspondents.

*** OUR ALMANAC FOR 1886.—*Secretaries of Provincial and Metropolitan Horticultural Societies are particularly invited to send us, as soon as possible, the Dates of their Meetings and Exhibitions during the ensuing year, so as to ensure their insertion.*

APPLE SEEDLING GRAFTED: *R. Ross.* The seedlings are grafted to get them to bear fruit earlier than they would on their own roots, and are grafted on the Paradise Apple stock because it has the property of causing early fruitfulness. Without so grafting seedlings, the raisers might have to wait many years before fruits were produced.

BOOKS: *G. A., Natal. Harvey's Life.* Messrs. G. Bell & Son inform us that they have still the work on sale.—*A Beginner.* The letterpress will no doubt tell you, if you read it. We cannot say what the scale is without seeing it. But we suppose the decimal system of metres and centimetres is used throughout.

ERRATUM: EDINBURGH APPLE AND PEAR CONGRESS.—In the report of exhibits from Renfrewshire the two Pears, Beurré Bosc and Marie Louise, are wrongly stated as from Mr. Lindsay, they having been sent by Mr. Henry Maxwell, Ralston Gardens, Paisley

EUCHARIS: *J. Lynn.* Swarming with mites.

HEMLOCK SPRUCE BARK EXTRACT: *T. Kirk, Wellington, New Zealand.* Our correspondent is referred to a paragraph on this subject at p. 724 of our present issue.

INSECTS ON ORCHIDS: *Camjee.* You have bought more than you bargained for. The plants are covered with scale-coccus. They are so badly infested that we recommend you to burn them.

NAMES OF FRUITS.—*J. F. Pear:* not recognised.—*Arthur Lee. Apples:* 2, Dumelow's Seedling; 3, Beauty of Kent; *Pears:* 4, Maréchal de la Cour; 5, Triomphe de Jodoigne; 6, Beurré Diel.—*N. G.* 1, Fearn's Pippin; 2, Wareham Russet; 3, Colonel Vaughan; 4, not known; 5, Cox's Pomona.—*J. F.* A, not recognised; B, Bedfordshire Foundling; C, Lord Derby; D, Hanwell Souring.

NAMES OF PLANTS: *H. V.* Hedychium Gardnerianum. Greenhouse treatment will suit the plant during winter, when it must be kept dry in the manner of Cactuses. In April the roots may be wholly or partly shaken out, and be repotted in a compost of three-quarters loam and one-quarter peat, with a little manure and sand added. After repotting, stove treatment must be adopted for two months, after which the plants may be placed in the greenhouse. When they are sufficiently hardened off they may be stood in warm, partially shaded spots, out-of-doors. When in sufficient numbers, the pots may be sunk to the rims in beds or borders, where the fine foliage and deliciously-scented flowers are very effective. The plants, when the pots have become filled with roots, require plenty of water, and occasionally applications of weak manure-water are of benefit. Before frosts occur, such plants must be removed indoors, and gradually forced to rest by withholding water; and when the growth is partly decayed, it may be cut to within 4 inches of the soil.—*S. Ray.* The wretched scrap was withered beyond recognition. We guess it may have been a fragment of the common Jasmine, the other is one of the hybrid shrubby Veronicas.—*W. S.* Var. of Lycaste macrophylla.—*M. S. Cooke.* Var. of Lycaste macrophylla.—*S. C.* As near as we can tell, your Ivies are — 1, Helix canariensis grandiflora variegata; 2, H. algeriensis; 3, H. conglomerata; 4, H. caenwoodiana; 5, H. aurea variegata; 6, H. marginata grandis.—*A. C.* Epidendrum ciliare.—*S. J. Ross.* Two pretty and distinct forms of Calanthe vestita oculata lutea, one white and the other pale sulphur.

INSECTS: *T. W.* The caterpillars which have injured the roots of so many of your different kinds of plants are those of the common small brown Swift moth (Hepialus fuscus). They are now nearly full grown. They are proving especially injurious at the present time by gnawing off the heads of the young underground shoots of my Chrysanthemums. *J. O. W.*—*C. A. G.* The soil in which your Violets were grown is infested with mites, woodlice, myrapod centipedes, nemotoid worms, and other abominations. Turn it all out and get some fresh soil.

ORCHID LEAVES DISEASED: *R. P. P.* 1, Dendrobium leaves. This is the black spot of gardeners, caused, it is supposed, by a fungus named Protomyces concomitans. 2, Odontoglossum. This is a remarkable case. The underneath side of each leaf is dotted all over with minute dark projecting spots or pustules, the membrane of the leaf being burst over each spot. Each spot looks like a familiar Puccinia or Uredopustule, as caused by fungi. On removing one or more for examination with the microscope each pustule is found to be closely packed with Nematoid worms and their eggs. We have recorded these Nematodes before in decaying pseudobulbs of Orchids. For an account of "Diseases of Orchids" see *Gardeners' Chronicle*, May 30, 1885. Remove and burn affected leaves, and look to the source of infection from the soil or water. *W. G. S.*

PELARGONIUM: *T. J.* Parti-coloured flowers, such as you send, are not uncommon. Your flower would not find favour with the florists.

RED BERRIES: *A. C.* They appear to be those of Hippophae rhamnoides.

SEEDLING EUCHARIS: *W. Stevens.* The bloom is handsome, and formed with much regularity of outline. It seems to be midway in size between E. amazonica and E. Sanderii. If it should prove of a free flowering habit it will be worth keeping.

THE ELECTRIC TREE OF NEW GUINEA: *B.* The so-called Elsassia electrica belongs to the Bosh or Fudge family. It has many synonyms, such as Feleetes apatelos, Mendacium impudens, Fallacia fugosa, not to mention vernacular names.

TOMATO ROOTS DISEASED: *J. J. R.* The Tomato roots sent present an extraordinary appearance. They look like small, rough, brown Cauliflowers full of nodosities, the latter varying from the size of a Pea to that of a Hazel-nut. The roots swarm in every part with nematoid or microscopic thread-worms and their eggs. These are not to be distinguished after a cursory examination from the similar objects so well known in Cucumbers. These worms attack the plants from the soil—they are often in the water supplied. There is no doubt the Nematodes could easily be destroyed without injuring the plants, but opportunities for experiments have not been forthcoming. The decaying parts of the plants are full of eggs. The best plan is to destroy all the diseased plants by burning. I always fancy I can detect Nematodes by an odour like that of ants; the odour may, of course, belong to the plants affected. *W. G. S.*

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

## CATALOGUES RECEIVED.

CHARLES LOWE, Broad Street Corner, Birmingham—Books, &c.

HOGG & WOOD, Coldstream—General Nursery Stock.

LITTLE & BALLANTYNE, Carlisle — Trees, Shrubs, Roses, &c.

V. DOPPLEB, Erfurt, Prussia — Novelties in Asters, Abutilons, Gladiolus, &c

PUTZ & ROES, Erfurt—Annual Trade Seed List.

FREDERICK ROEMER, Quedlinburg, Germany—Choice Flower Seeds, Special List.

W. DRUMMOND & SONS, 58, Dawson Street, Dublin, and at Stirling—Trees and Shrubs, &c.

COMMUNICATIONS RECEIVED.—B. P.—W. T. T. D.—Mad. Lavalle—G. B. W.—Dr. Drude, Dresden.—J. S.—J. W. (specimen sent to our entomological referee)—E. R. C.—C. A. G—G. H—G. B. & SONS.—G. T. M—T. Barraclough—H. T. Wood.—W. G. S.—J. H.—W. F.—G. H. R.—W. C.—W. S.—J. B.—T. W.

DIED, on Monday last, aged seventy-five, Mr. GEORGE LANE, senior partner in the firm of Messrs. G. & J. Lane, of the Cockmanning Nursery, St. Mary Cray, Kent. Mr. Lane was visited by a paralytic fit about six months ago, and a more severe attack entirely prostrated him in October last; since then he had been gradually sinking. He had been connected with the firm all his life, and was known as a successful Apple grower.

# Markets.

*COVENT GARDEN, December 3.*

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

TRADE dull in most of our goods, Pines and Grapes especially suffering. Heavy consignments of Canadian and Nova Scotia Apples still reaching us, as also St. Michael Pines. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Apples, per ½-sieve | 1 0– 3 0 | Pine apples, Eng., lb. | 1 6– 2 0 |
| — Canadian, barrl. | 10–20 0 | — St. Michael, each | 2 6– 5 0 |
| Grapes, per lb. | 0 6– 2 6 | Pears, per dozen | 0 9– 1 3 |
| Kent Cobs, 100 lbs. | 22 0–25 0 | — per ½-sieve | 1 6– 3 0 |
| Lemons, per case | 15 0–30 0 | | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Artichokes, per doz. | 1 0– .. | Mushrooms, punnet | 1 0– 1 6 |
| Beans, Kidney, lb. | 1 0– .. | Mustard and Cress, do. | 0 4– .. |
| Beet, red, per dozen | 1 0– 2 0 | Onions, per bushel | 4 0– .. |
| Broccoli, bundle | 0 9– 1 0 | Parsley, dozen bunch | 2 0– 3 0 |
| Cabbages, per dozen | 1 0– .. | Parsnips, per dozen | 1 0– .. |
| Capsicums, per box | 1 0– 2 0 | Potatos, per cwt. | 4 0– 5 0 |
| Carrots, per bunch | 0 6– .. | ,, kidney, per cwt. | 4 0– 5 0 |
| Cauliflowers, per doz. | 2 0– 3 0 | Salsafy, per bundle | 1 0– .. |
| Celeriac, per root | 0 3– .. | Scorzonera, p. bundle | 1 0– .. |
| Celery, per bundle | 1 0– 2 0 | Seakale, punnet | 2 6– .. |
| Coleworts, per bunch | 2 0– 4 0 | Shallots, per pound | 0 3– 0 9 |
| Cucumbers, each | 0 0– 1 0 | Spinach, per bushel | 2 0– 4 0 |
| Endive, per dozen | 1 0– 2 0 | Sprouts, per pound | 0 3– .. |
| Herbs, per bunch | 0 2– .. | Sprue, bundle | 1 0– .. |
| Leeks, per bunch | 0 3– 0 4 | Tomatos, per lb. | 0 6– 1 0 |
| Lettuce, per dozen | 1 0– 1 0 | Turnips, bunch | 0 6– .. |

POTATOS. Magnum Bonums, bad trade, 50s. to 80s; Regents, 60s. to 80s. per ton; German Reds, 2s. to 2s. 6d. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0–15 0 | Ficus elastica, each | 1 6– 7 0 |
| Arbo. vitæ (golden), per dozen | 6 0–18 0 | Ferns, in variety, per dozen | 4 0–18 0 |
| — (common), dozen | 6 0–12 0 | Foliage Plants, various, each | 0 –10 0 |
| Arum Lilies, dozen | 12 0–18 0 | Hyacinths, Roman, per pot | 1 0– 1 3 |
| Begonias, per dozen | 6 0–12 0 | Marguerite Daisy, per dozen | 8 0–12 0 |
| Bouvardia, doz. | 12 0–18 0 | Myrtles, per dozen | 6 0–12 0 |
| Cineraria, per doz. | 10 0–12 0 | Palms in var., each | 2 6–21 0 |
| Chrysanth., per doz. | 6 0–18 0 | Pelargoniums, scarlet, per dozen | 6 0– 9 0 |
| Cyclamen, 12 pots | 12 0–18 0 | Poinsettia, per dozen | 12 0–18 0 |
| Cyperus, per dozen | 4 0–12 0 | Primulas, single, 12 pots | 4 0– 6 0 |
| Dracæna terminalis, per dozen | 30 0–60 0 | Tulips, 12 pots | 8 0–12 0 |
| — viridis, per doz. | 12 0–24 0 | | |
| Erica, various, doz. | 12 0–21 0 | | |
| Euonymus, in var., per dozen | 6 0–18 0 | | |
| Evergreens, in var., per dozen | 6 0–24 0 | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | Lilium longiflorum, 12 blooms | 6 0– 8 0 |
| Acacia (Mimosa), Fr., per bunch | 0 6– 1 0 | Marguerites, 12 bun. | 2 0– 4 0 |
| Arum Lilies, 12 blms. | 6 0– 8 0 | Mignonette, 12 bun. | 1 6– 3 0 |
| Azalea, 12 sprays | 1 0– 1 6 | Pelargoniums, per 12 trusses | 1 0– 1 6 |
| Bouvardias, per bun. | 0 6– 1 0 | — scarlet, 12 trusses | 0 9– 1 0 |
| Camellias, 12 blms. | 3 0– 6 0 | Poinsettia, 12 blms. | 4 0– 8 0 |
| Carnations, 12 blms. | 1 0– 3 0 | Roses (indoor), per dozen | 1 0– 3 0 |
| Chrysanth., 12 blms. | 0 6– 4 0 | — Tea, French, doz. | 1 0– 1 6 |
| — 12 bunches | 4 0–12 0 | — red, French, doz. | 1 6– 2 0 |
| Cyclamen, doz. blms. | 0 6– 0 8 | Stephanotis, 12 spr. | 6 0– 8 0 |
| Epiphyllum, dozen blooms | 0 6– 1 0 | Tropæolum, 12 bun. | 2 0– 3 0 |
| Eucharis, per dozen | 4 0– 6 0 | Tuberoses, 12 blms. | 1 0– 1 6 |
| Gardenias, 12 blooms | 4 0– 6 0 | Tulips, doz. blooms | 1 0– 1 3 |
| Hyacinths, Rom., 12 sprays | 1 0– 2 0 | Violets, 12 bunches | 1 0– 1 6 |
| Lapageria, white, 12 blooms | 2 0– 3 0 | — Czar, Fr., bunch | 1 0– 1 6 |
| - red, 12 blooms | 1 0– 2 0 | — Parme, Fr., bun. | 4 0– 5 0 |

## SEEDS.

LONDON: *Dec.* 2.—Owing to the Elections, and also to the near approach of Christmas, there were but very few transactions passing to-day in field seeds. Some further shipments of red Clover seed have been made to America. New Trefoil, under the influence of a speculative inquiry, has advanced 1s. per cwt. More attention is also given to white Clover seed. Canary seed keeps exceedingly firm. Hemp seed is still extremely cheap. In Rape seed the tendency is upward. There is no change in blue Peas or Haricot Beans. White Runners are selling at very moderate prices. Feeding Linseed is dull. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

MARK LANE: *Nov.* 30.—There was very little inquiry in any department. English Wheat sold at 6*d.* to 1*s.* lower from want of condition. Foreign Wheats, whilst dull, were not as a rule quotably altered. Flour, though hanging on hand, was not quotably altered in value. With liberal arrivals Peas declined 1*s.* per qr. Oats from the same cause met but few buyers at previous rates. Maize was steady in value, and in Barley there was hardly sufficient doing to test quotations.

*Dec.* 2.—There was no appreciable change in the Wheat or flour trades, both remaining very quiet at nearly nominal rates. Oats were firmer, but without sufficient doing to establish better prices.

*Average prices* of corn for the week ending Nov. 28: —Wheat, 30*s.* 9*d.*; Barley, 29*s.* 5*d.*; Oats, 18*s.* 7*d.* For the corresponding period last year:—Wheat, 30*s.* 5*d.*; Barley, 31*s.* 3*d.*; Oats, 19*s.* 4*d.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Dec.* 2.—Average supplies of fruit, vegetables, and Potatos, with a fair demand. Quotations:—Apples, 2*s.* 6*d.* to 6*s.* and Pears, 2*s.* to 6*s.* per bushel; Cabbages, 2*s.* 6*d.* to 4*s.* per tally; Savoys, 3*s.* 6*d.* to 8*s.* do.; bunch greens, 3*s.* to 4*s.* per dozen bunches; Carrots, 2*s.* to 2*s.* 6*d.* do.; Turnips, 3*s.* to 3*s.* 6*d.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Celery, 6*s.* to 10*s.* per dozen bundles; Beetroots, 3*s.* to 3*s.* 6*d.* per dozen; Cauliflowers, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Brussels Sprouts, 2*s.* to 2*s.* 6*d.* per half sieve; Onions, 4*s.* to 5*s.* per cwt.; Carrots, in sacks, 30*s.* to 50*s.* per ton; white Turnips, 40*s.* to 60*s.* do.; Swede do., 27*s.* to 32*s.* do.

STRATFORD: *Dec.* 1.—During the past week the market has been well supplied with all kinds of produce, and with a good attendance of buyers, trade was transacted at the following prices:—Cabbages, 2*s.* 6*d.* to 8*s.* per tally; Savoys, 3*s.* to 7*s* 6*d.* do; greens, 3*s.* to 3*s.* 6*d.* per dozen; Sprouts, 3*s.* to 3*s.* 6*d.* per sieve; Mangels, 17*s.* to 21*s.* per ton; Swedes, 20*s.* to 30*s.* do.; Turnips, 40*s.* to 70*s.* do.; Carrots, cattle feeding, 38*s.* to 40*s.* do.; do., household, 40*s.* to 50*s.* do.; Onions, 70*s.* to 100*s.* do.; do. pickling, 70*s.* do.; Parsnips, 10*d.* to 1*s.* per score; Apples, 1*s.* 9*d.* to 5*s.* 6*d.* per bushel; Celery, 9*s.* to 12*s.* per dozen rolls; Horse Radish, 10*d.* to 1*s.* per bundle; Spinach, 2*s.* per sieve.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 1.—Supplies were moderate, and best samples firm. Quotations:—Regents, 90*s.* to 105*s.*; Magnum Bonums, 70*s.* to 90*s.*; Early Roses, 70*s.* to 90*s.*: German, 60*s.* to 70*s.* per ton.

COLUMBIA (East London): *Dec.* 2.—Magnums, 50*s.* to 75*s.*; Regents, 60*s.* to 70*s.*; Victorias, 55*s.* to 65*s.*; Champions, 50*s.* to 60*s.*; Reading Heros, 60*s.* to 70*s.*; and Beauty of Hebron, 70*s.* to 80*s.* per ton.

STRATFORD: *Dec.* 1.—Magnums, 50*s.* to 95*s.*; Champions, 50*s.* to 60*s.*; Regents, 60*s.* to 80*s.* per ton.

*Imports.*—The imports into London last week consisted of 6821 bags from Hamburg, 2871 from Ghent, 575 from Harlingen, 5847 from Stettin, 28 from Rotterdam.

## CATTLE.

METROPOLITAN: *Nov.* 30.—Supplies were in some cases larger, but not the proportion of really prime qualities, which were short. About 2*d.* per 8 lb. reduction was rather general on both beasts and sheep, excepting for quite top quality. English calves were unaltered; Irish most unsaleable. No improvement in the pig trade. Quotations:—Beasts, 3*s.* 8*d.* to 4*s.* 6*d.*, and 4*s.* 8*d.* to 5*s.* 4*d.*; calves, 2*s.* to 3*s.* 8*d.*, sheep, 4*s.* to 4*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; pigs, 3*s.* 6*d.* to 4*s.*

*Dec.* 3.—A moderate supply was on sale. There was rather more doing, but no improvement in prices.

STRATFORD: *Dec.* 1.—Hay, 60*s.* to 90*s.*; Clover 75*s.* to 110*s.*; and straw, 28*s.* to 30*s.* per load.

## COALS.

The following are the prices current at market for the past week:—Ravensworth West Hartley, 14*s.* 6*d.*; Walls End—Harton, 15*s.* 6*d.* and 14*s.* 6*d.*; Tyne (unscreened), 11*s.* 3*d.*; Easington, 15*s.* 6*d.*; Hetton, 17*s.* 6*d.* and 16*s.* 6*d.*; Hetton Lyons, 15*s.* 6*d.*; Tunstall, 15*s.* 6*d.*; East Hartlepool, 16*s.*; South Hartlepool, 15*s.* 6*d.*; Tees, 16*s.* 6*d.*; Lambton, 16*s.*; Wear, 14*s.* 6*d.*

**Government Stock.**—Consols closed on Monday at 100⅜ to 100⅝ for both delivery and the account. Tuesday's figures were 99½ to 99⅝ xd. for delivery, and 99⅝ to 99¾ xd. for the account. The closing quotations on Wednesday were, as on the previous day, for delivery, and 99⅛ to 99⅜ xd. for the account.—Thursday's final figures were 99⅛ to 99⅛ xd. for delivery, and 99⅞ to 99⅞ xd. for the account.


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THE GLOUCESTER WAGON CO.
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Have attached to their extensive works a large Joinery Department with the latest and most improved Machinery, for the Manufacture of

**Covered Sheds or Yards for Cattle, Conservatories, Greenhouses, Garden Seats, &c,**

*at extremely moderate prices.*

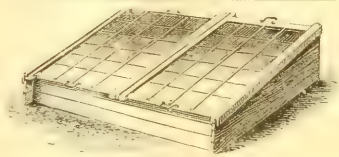
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R. HOLLIDAY,
HORTICULTURAL IRON AND WIRE WORKS,
The Pheasantry, Beaufort Street, Chelsea, S.W.



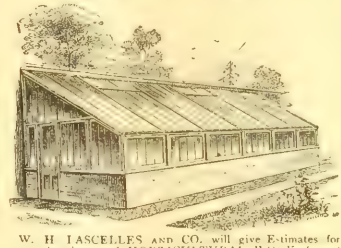
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R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

| Prices, delivered to any station in England:— | | £ s. d. |
|---|---|---|
| 2 light frame, 8 feet by 6 feet | Packing | 3 10 0 |
| 3-light frame, 12 feet by 6 feet | Cases free | 5 5 0 |
| 6-light frame, 24 feet by 6 feet | | 10 0 0 |

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.
R. HALLIDAY AND CO., Hothouse Builders and Engineers, Royal Horticultural Works, Middleton, Manchester.

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Illustrated Lists of Wooden Buildings, Greenhouses, and Conservatories, and Concrete Slabs for Walls, Paths, and Stages, sent post-free on application.

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GREENHOUSES, GARDEN FRAMES.



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Rhubarb and Seakale Forcing.
STRONG WELL-MADE POTS for the above.

Hyacinths in Pots.
POTS made expressly for HYACINTHS can be supplied by
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PRICE LIST free.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





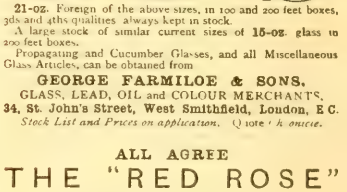
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WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.
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SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
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N.B.—Orders promptly executed by Rail or to Wharves.
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| 14×12 | 20×15 |
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| 18×12 | 22×16 |
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A large stock of similar current sizes of 15-oz. glass in 200 feet boxes.
Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from
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THE "RED ROSE"
Is the most economical and powerful heating Boiler yet introduced.
Awards:—
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*The following Gentlemen, Nurserymen, and Hot-water Engineers have already kindly honoured with their appreciation and confidence by ordering the "Red Rose," several of which have also sent us very favourable testimonials:—*

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J. JONAH SMITH, Esq., Ash Lodge, Watford Herts.
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" A. DICKSON AND SONS, Newtownards, Ireland.
" F. D. POUSTIE, Bridge of Allan, N.B.
" G. FAIRBAIRN, Botcherby, Carlisle.
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# GARDENERS' CHRONICLE

FOR

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**(18 inches by 13 inches),**

FROM AN ORIGINAL DESIGN.

**PRICE FIVEPENCE; POST-FREE, FIVEPENCE-HALFPENNY;**

OR WITH

ALMANAC MOUNTED ON OAK ROLLERS,

READY TO BE HUNG UP, AND ENCLOSED IN CASE,

**SEVENPENCE; POST-FREE, EIGHTPENCE-HALFPENNY.**

Purchasers are specially recommended to order the Almanac in a Case,

TO PREVENT INJURY FROM FOLDING.

*The Publisher cannot be responsible for injury to the Almanac unless it is so protected.*

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| 7 | ,, ... | 0 | 4 | 6 | 18 | ,, ... | 0 | 10 | 0 |
| 8 | ,, ... | 0 | 5 | 0 | 19 | ,, ... | 0 | 10 | 6 |
| 9 | ,, ... | 0 | 5 | 6 | 20 | ,, ... | 0 | 11 | 0 |
| 10 | ,, ... | 0 | 6 | 0 | 21 | ,, ... | 0 | 11 | 6 |
| 11 | ,, ... | 0 | 6 | 6 | 22 | ,, ... | 0 | 12 | 0 |
| 12 | ,, ... | 0 | 7 | 0 | 23 | ,, ... | 0 | 12 | 6 |
| 13 | ,, ... | 0 | 7 | 6 | 24 | ,, ... | 0 | 13 | 0 |
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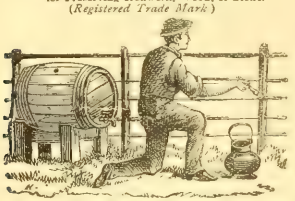
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HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone. (*Registered Trade Mark*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requiring no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.

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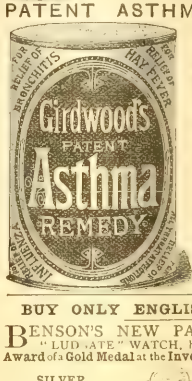
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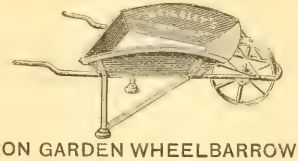
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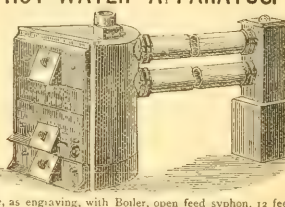
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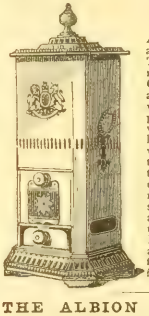
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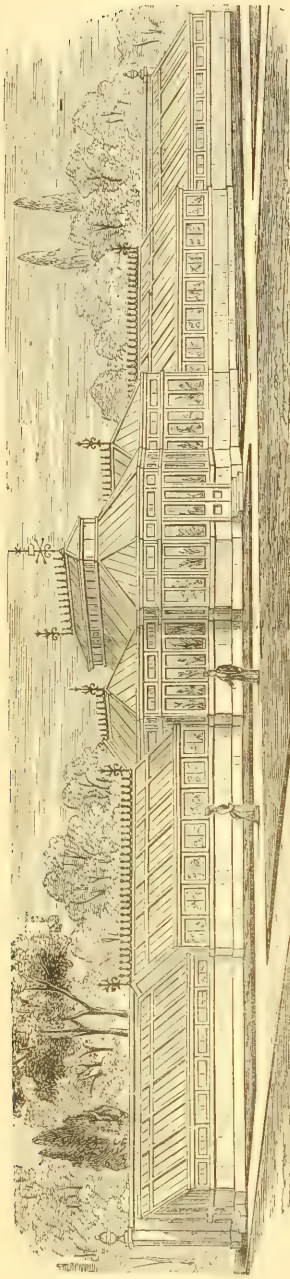
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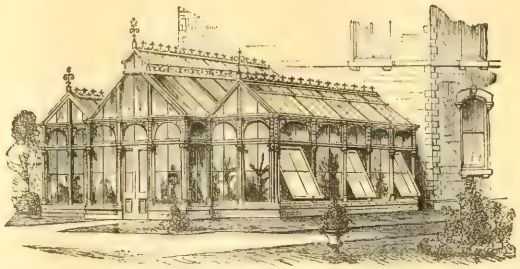
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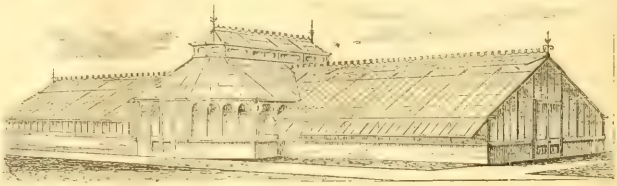
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THE

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*** OUR ALMANAC FOR 1886.—*Secretaries of Provincial and Metropolitan Horticultural Societies are invited to send us, as soon as possible, the Dates of their Meetings and Exhibitions during the ensuing year, so as to ensure their insertion.*

## GARDENERS' CHRONICLE OFFICE TELEGRAMS.

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F. POWER, Hon. Sec.

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## SALES BY AUCTION.

**Wednesday Next.**—(Sale No. 7043.)
HARDY BULBS AND PLANTS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 16, at half-past 12 o'Clock precisely, several hundred lots of first-class double and single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SNOWDROPS, LILIUMS, GLADIOLI, ANEMONES, and other BULBS, a quantity of HARDY PLANTS, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No 7044.)
SPECIAL SALE OF ORCHIDS IN FLOWER.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 17, at half-past 12 o'Clock precisely, a COLLECTION of ORCHIDS in Flower, including a quantity of fine Plants of Odontoglossum Alexandræ and vars., O. Edwardi, Angræcum sesquipedale, Phalænopsis amabilis, Dendrobes, Oncidiums, Calanthes, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7044.)
5000 LILIUM AURATUM, from Japan, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 17, at half-past 12 o'Clock precisely, an importation of 5000 splendid Bulbs of LILIUM AURATUM, just received from Japan in the finest possible condition; several thousand TIGRIDIA GRANDIFOLIA, T. CONCHIFLORA, and fine mixed GLADIOLI from New Jersey; a fine lot of Home-grown LILIES, including many choice varieties; Tuberous-rooted BEGONIAS, Dwarf ROSES from France, SOUTH AFRICAN BULBS, LILY of the VALLEY clumps, and several hundred lots of first-class DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

**Monday, Thursday, and Saturday Next, and Monday,** DECEMBER 21.
DUTCH BULBS.—Four FINAL SALES for the Season.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, THURSDAY, and SATURDAY NEXT (December 14, 17, and 19), and also on MONDAY, December 21, at 12 o'Clock precisely, thousands of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, in Lots to suit large and small buyers.

On view mornings of Sale, and Catalogues had.

**Wednesday Next.**
3000 LILIUM AURATUM from Japan, unusually fine bulbs; 30,000 KENTIA SEEDS, CAMELLIAS, AZALEAS, and FICUS from Belgium; FERNS of all the FARMS in variety; 600 Standard and Dwarf ROSES from an English nursery; LILY of the VALLEY; a choice assortment of Hardy English-grown LILIES and BULBS, SPIRÆAS, Christmas ROSES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, December 16, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

**Wednesday Next.**
3,000 LILIUM AURATUM.
30,000 KENTIA SEEDS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on WEDNESDAY NEXT, December 16, 3000 unusually fine LILIUM AURATUM, just received from Japan; and 30,000 Seeds of KENTIA BELMOREANA and FOSTERIANA, collected in Lord Howe's Island.

On view morning of Sale, and Catalogues had.

**Friday Next.**
WHITE LÆLIA ANCEPS.
LÆLIA ANCEPS SCHRODERIANA, STELLA, and SANDERIANA, in splendid masses.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 18, at half-past 12 o'Clock precisely, a very fine importation of the above WHITE LÆLIAS, in splendid condition. All were separately packed in cases and sent home from the West Coast of Africa, *viâ* San Francisco and New York, by passenger train, the intention being to bring them into the market in bloom but the spikes have faded. The Bulbs are plump and in fine order, and the masses very large, some having two and three hundred bulbs each. Also a wonderful importation of ONCIDIUM MARSHALLIANUM.

On view morning of Sale, and Catalogues had.

**Flowering Orchids—Special Sale.**

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS in FLOWER will take place on TUESDAY, December 22 (just before the Christmas holidays), for which they will be glad to receive notice of entries as early as possible.

**Eastbourne.**

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PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract:—

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COTONEASTER SIMONSI, 5000, 2-yr.
YEWS, English, 1 to 2 feet, 2000.
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NUT and FILBERT Layers, 500.
CHERRY PLUM (Prunus myrobalana), for fencing, 50,000.
100 WALNUTS, Standards.
The whole of the above is offered at very low Trade prices
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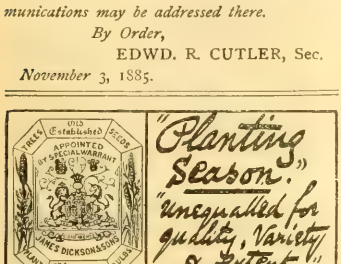
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*November 3, 1885.*




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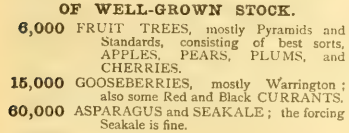
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In consequence of the Lease of 9 acres of our Nursery Ground being near an end, we beg to offer the following NURSERY STOCK at exceptionally low prices:—
LARCH, true native, 1-yr. 1-yr. transplanted, 9 to 12 inches, 12 to 18 inches, 18 to 24 inches, 2 to 3 feet, 3 to 4 feet.
FIR, Scotch, true native, 1-yr. seedlings, 2-yr. seedlings, 1-yr. 1-yr. transplanted, 2-yr. 1-yr. transplanted, 3-year-old twice transplanted, 2-yr. 2-yr. transplanted, 9 to 12 inches, 12 to 18 inches, 18 to 24 inches.
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ASH, 1-yr. seedlings, 1-yr. 1-yr. transplanted.
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BIRCH, 1-yr. seedlings, and 12 to 18 inches.
BRIER, Dog, 1-yr. seedlings.
CHESTNUT, Spanish, 1-yr.
HAZEL, 1-yr. seedlings.
ELM, Scotch, 12 to 18 inches, 18 to 24 inches, 2 to 3 feet.
OAKS, 1-yr. seedlings.
PINUS AUSTRIACA, 1-yr. seedlings, 6 to 9 inches, 9 to 12 inches, transplanted.
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POPLARS, of sorts, 1½ to 8 feet, transplanted.
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ASH, Mountain, 18 to 24 inches, 2 to 3 feet, 4 to 5 feet.
LIMES, from Layers, 2 to 3 feet, 3 to 4 feet, and upwards
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ROSES, Dwarfs, per 100 or 1000.
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*The above stock is in fine condition, and samples and prices, with specially low quotations for large quantities, may be had on application to*

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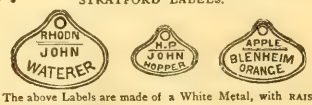
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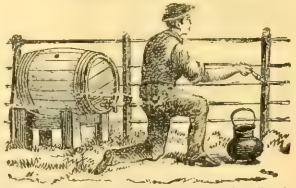
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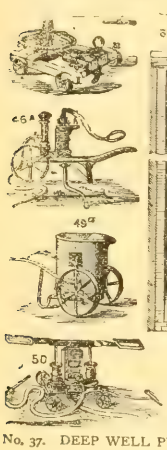
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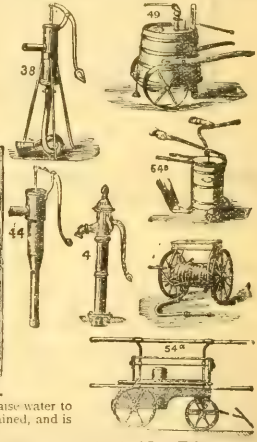



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*SATURDAY, DECEMBER* 12, 1885.

## LONGLEAT.

THIS beautiful place, the seat of the Marquis of Bath, is situated on the confines of Wiltshire and Somerset; a considerable portion of the grounds are within the latter county, whilst the house stands in Wiltshire. The principal entrance lays southwards, from which direction the road leads through the pretty village of Horningsham, after leaving which it enters the park, where there is a lodge about a mile distant from the mansion, to which, from this point the drive is in a straight line through an avenue of majestic old Elms, part of which in different places a long time ago were unhappily removed; more recently these gaps have been filled up with young trees that are thriving satisfactorily, but, needless to say, the requisite uniformity of growth and size so essential in the trees composing an avenue is wanting. Avenues sometimes exist where their absence would have been preferable, either through their being out of keeping with the surroundings, or by mistakes in the planting; but here the avenue is not only quite in character with the place, but the judgment has been correct in allowing enough greensward between the road and the trees proportionate to the extent and importance of the place. It would be interesting to know when, and by whom the Longleat avenue was originally planted. Be this as it may, this old avenue forms a fitting approach to the palatial mansion to which it leads. A sight of the building as it is approached conveys the idea that whoever chose the site had an eye to the comfort a sheltered position affords, to which none appear to have been more alive than the religious communities of old, who seldom made any mistake in the positions which they selected for their habitations. Seen from the different roads by which it is reached the house has the appearance of standing in a land-locked valley, yet the space immediately surrounding it is sufficient in extent, before the ascent in each direction begins, to prevent a feeling of too much confinement. A priory of Augustinians, founded about 1270, occupied the spot where the mansion now stands; after an existence of some 250 years it was dissolved, and in 1540 was bought by Sir John Thynne.

From an interesting account of Longleat by the Rev. J. E. Jackson, rector of Leigh Delamere, it appears that the present building was begun by Sir John Thynne in 1568; operations were continued for about ten years; he died in 1580, at which time it would seem most of the external work was completed, but only part of the interior, which was finished by his successors. It is a noble structure, partaking mostly of the Italian style, as will be seen by the accompanying illustration, and is in excellent preservation, having well withstood the long wear of the 300 years that have elapsed since its substantial walls were raised. The dimensions are 220 feet long by 180 deep—a large building, but by no means too large to accommodate the numbers that on several occasions have been gathered under its roof. Soon after it was built Queen Elizabeth visited the place;

Charles II. was there—each, no doubt, following the fashion of the times, would have a host of retainers. George III., accompanied by several of his family, came to Longleat in 1789, at which time it is said that 125 people slept there; on the two days of his stay an extraordinary amount of feasting went on. In 1881 the Prince and Princess of Wales and suite spent the greater part of a week here, during which a ball was given in the great hall, at which 600 guests assembled. In 1883 there were three weeks' rejoicings at Longleat to commemorate the coming of age of Viscount Weymouth, eldest son of the Marquis of Bath. These were brought to a close by a day of amusements in the park, with a luncheon of which over 1100 friends of the family and tenants on the estate partook. In the evening huge bonfires on the hills in the surrounding neighbourhood and fireworks in the grounds brought to a conclusion a series of festivities on a scale such as is seldom carried out.

The grounds are in keeping with the style and extent of the mansion. The whole extent enclosed is some 16 miles round; this includes about 5000 acres of woods, which mostly occupy the high surrounding land, more especially on the eastern side. Within the grounds there are 16 miles of private roads. The great extent of surface occupied by the woods might lead any one who has not seen the place to suppose that there was a deficiency of open space, but this is far from being so—long, broad, irregular expanses of grass meet the eye at every turn, the groves and groups of fine old trees that have reached maturity, and also those of less age, have been well placed with a view to effect. As might be expected in an old place of this character, Elm, Oak, Ash, Beech, Lime, and Sweet Chestnut, predominate in the positions of most importance, and from the proportions they attain evidently like the soil; but most of the hardy deciduous, as well as evergreen trees, do well.

One of the features of the place are the extensive sheets of water, five in number, succeeding each other in irregular line; these have been formed by damming at intervals the stream which follows the course of the valley from south to north on the eastern side at some distance from the mansion; the largest of these—that which is opposite the building—is some half mile in length. On this side the lawn, which occupies the intervening space between the house and the water, descends considerably; there is here a large flower garden very effectively planted with the usual kinds of summer bedding plants; in addition to this there are a number of large beds dispersed over this part of the grounds similarly filled, which, combined with the flower garden, have a gay appearance. By the side of a long walk running northwards from the east front of the house there is a border bright with blooming plants.

On the north front there is a space of grass, interspersed with shrubs, and beyond this a large garden arranged in the old Dutch fashion, filled with evergreens in rows, consisting principally of Yew, Box, Berberis Darwinii, Holly, Cotoneaster, and the like, with narrow gravel paths between and grass verges. The shrubs are kept closely clipped to about a foot in height, and the whole is as angular and formal as this terribly unnatural style of gardening demands. At all events it serves as a living illustration of the fashion prevalent 200 years ago, about which time this garden seems to have been made. Northwards from this stands the Orangery, now principally filled with Camellias. Near here is a lawn-tennis ground; the spot for this is well chosen, as here there is an absence of the dissight that a dead level space in a conspicuous position on a lawn often produces. Further in this direction a walk follows the side of the water, wherein is an island occupied by tall trees, in which a colony of herons build. Retraversing this walk, one cannot fail to notice the beauty of the rising slope on the opposite side of the water, stretching for a long distance past the mansion, with its broad expanse of grass relieved here and there by groups of trees, and backed by the dense woods that clothe the summit of the ridge, giving shelter from the eastern blast—an essential that it behoves the planter not to lose sight of.

To the right of the entrance front of the building, at a short distance away, a walk commences that leads through the pleasure-grounds, which run in a southern direction; here, associated with deciduous kinds of trees, are numbers of the best Conifers, that have attained a goodly size. Amongst these may be named Cupressus macrocarpa, nearly 50 feet high; Taxodium sempervirens, 60 feet; T. distichum, over 60 feet; Abies Menziesii, 60 feet; Salisburia adiantifolia, 65 feet; Dacrydium Franklini, 30 feet. In the high woods adjoining, westwards, there are numbers of Silver Firs that run from 115 to 125 feet high, magnificent trees with massive trunks and still in a thriving condition. In many parts of the grounds there are trees of unusual size, noticeable amongst which are Liriodendron tulipiferum (the Tulip tree), the largest of which are nearly 100 feet in height; Oak, girthing 24 feet at 4 feet from the ground; Elm, 120 feet high, girth 26 feet at 4 feet from the ground; and many others only a little less than those named are in a healthy thriving state, and to all appearance are likely to keep on growing for an indefinite time.

The natural formation of the land, with its undulating surface, has done no little in making the work of the planter so successful here; this is not alone perceptible in the grounds in immediate proximity to the dwelling, but also in the more outlying parts, which are equally deserving of notice. Especially is this so in the eastward direction, which is reached by the road that leads from the entrance lodge already mentioned, through the village of Horningsham, which, by the way, demands a few words. It is somewhat extensive, the houses being picturesquely scattered on each side of the road for about a mile. Some of the roofs are thatched. The whole present a neat appearance, such as is rarely met with. This in no little degree is owing to the way that they are covered with climbing plants, consisting of Ivy, Escallonia macrantha, Cotoneasters, Roses, Clematis, Honeysuckle, and the like, which clothe the walls so as scarcely to leave a bit visible. The uniformly beautiful condition these present is in no little owing to the interest which the Marquis takes in their appearance, and who provides the labour to keep the plants in order.

After passing the village the road bears to the left northwards, traversing the wooded ridge in the direction of Warminster; the trees are not, as usually seen, in an unbroken line flanking the road, but in many places are sufficiently far away to leave room for flowering plants such as Cotoneaster Simonsii, Deutzia crenata, Spiræas of sorts, and similar things planted in masses, each kind separately, with masses of red Dogwood and Pampas-grass introduced amongst them. At some distance in this direction there is one of the many divergent roads that leads to the various points of interest within the grounds: that to the west from this point leads to Heaven's Gate, where the finest view of the place, as well as the country westwards, presents itself. Here, from an open space in the wood, high up as from the vantage point of an amphitheatre, the panorama of Longleat at once breaks on the eye, whilst in the far distance may be seen the tower on the Mendip Hill and Amerdown Park the seat of Lord Hylton.

Returning to the Warminster Road, the drive is flanked right and left by dense masses of Rhododendrons and other flowering shrubs, with quantities of the best kinds of Conifers, young trees, growing freely. Again, reaching the main road, there is another that leads from it at right angles to Sherwater. Here the descent is rapid, through immense breadths of old woods on each side, principally Oak and Beech

Further on, entering the valley, which here runs eastwards, the character of the planting is quite different; broad stretches of Silver Firs and old Scotch Firs occupy the higher portions of the slopes, whilst quantities of the newer kinds of Conifers are on the lower ground. These consist of Cedrus Deodara, Cryptomeria japonica, Thuiopsis borealis, Wellingtonias, &c. These are growing like Willows in the bottom of the valley, where soil and shelter alike suit them. Still further in this direction is Sherewater, a piece of water some 40 acres in extent, which has been formed by constructing a dam across the valley through which runs a stream, the water of which is thus held. It is a favourite place with tourists, who, by permission, are allowed the use of the boats kept on this miniature lake. Near at hand is the village of Crockerton, passing through which and turning to the left the way leads back westwards through an extensive tract of woodland, until it again joins the Warminster Road, where, some distance further northwards there is another entrance to the park at about 2½ miles from the house. Entering at this point the road in places has a steep descent. Here again the views that keep on continually presenting themselves are alike beautiful and varied; wide open glades stretch out in different directions, with fine trees grouped in masses, such as their respective positions happen to require: the road thus continues until it reaches the mansion. Another road from Frome, which is some half dozen miles distant, enters the park on the western side, and continues until it joins the others near the house.

### THE FRUIT HOUSES.

Few places can boast of such Grapes as are now grown at Longleat. The principal range of vineries is span-roofed, in three divisions; the first of these, commencing at the northern end, is between 50 and 60 feet long, by 30 feet wide; it is filled with Black Hamburghs carried this season an immense crop of fruit, beautifully finished, the bunches collectively very much larger than usually borne by Vines of their age. (They, like those in the two other compartments, have been planted sixteen years.) Many of the bunches would run from 6 to 7 lb. The central portion, nearly 90 feet long, contains four Muscats, each Vine here as in the rest of the range, occupying much more space than is generally given, were also bearing a magnificent crop fast coming to maturity, and promising to colour well; the bunches were very large, not a few would reach half-a-dozen pounds each. The remaining division was filled with five Vines, two Black Alicante, two Lady Downe's, and one Mrs. Pince; the crop they were carrying was similar to that in the first and second divisions, and quite equal to them for the size and beautiful finish of the fruit. The bunches of Lady Downe's were larger than one often meets with, and so even as to show that there had been an absence of scalding to which this favourite late variety is so liable. The Alicantes were as large and handsome in the bunch as this handsome Grape is when well managed; whilst the crop of Mrs. Pince was unusually well finished, the berries large, black, and even. Mr. Pratt may be complimented on having in this range a crop of Grapes such as is not often seen.

In a range of old-fashioned hip-roofed houses, in several divisions, the first is filled with Peaches, the earliest forced. Next to this is

the earliest vinery, the crop of which had been cleared some time. The adjoining house was filled with Melons; this, like the rest of the range, is about 40 feet long, yet three plants occupied the house. Mr. Pratt gives all his Melons much more room than many growers think necessary; each plant is in a brick pit, from 3 to 4 feet square; in this way they keep on bearing all through the season. When I saw them about the middle of August they were carrying a beautiful lot of fruit. The sort principally grown is one of Mr. Pratt's raising, and bears the name of Longleat Perfection; it is a cross between Eastnor Castle and Meredith's Hybrid Cashmere, and is a fine kind in every way, a free bearer, the fruit good-looking, and highly flavoured. After these comes the second Peach-house. Another house is devoted to Figs.

Several houses are filled with flowering and fine-leaved plants, the latter consisting of large quantities of Caladium argyrites, Dracænas, Crotons, Pandanus, Palms, Ferns, and the like, mostly small stock, best suited for hall and table decoration. One house, 60 feet long, is occupied by Gardenias, planted out, and Eucharis amazonica, of which there is a fine stock of strong, vigorous plants.

The useful Dendrobium nobile is grown in quantity, and so are the red and the yellow-eyed varieties of Calanthe vestita and C. Veitchii. These Calanthes with the Dendrobiums to follow, give through the late autumn and winter a succession of flowers, than which there are few more beautiful or generally useful, their endurance in a cut state being not the least merit they possess.

The walls are extensive and covered with the usual kinds of fruit trees, Pears especially were carrying good crops. In the principal division of the kitchen garden there is a very useful contrivance for preserving bush fruits from the birds. A border against a north wall, some 80 yards long, and 4 wide, is planted with Currants and Gooseberries; the former are standards, there are three rows of them, and three of Gooseberries, mostly Red Warrington; on the wall are Morello Cherries. The whole is enclosed with a wooden framework consisting of light rafters resting on posts about 4 feet high in front, and on the wall at back: over this strong galvanised iron wire netting, about ½-inch mesh, is permanently fixed, with doors and ends of the same material. In this way a very large quantity of fruit is secured without the trouble entailed by the use of the ordinary twine nets, which, to cover a space such as this, would give a considerable amount of labour annually, and which, in addition to the wear and tear of nets, would no doubt in the end be more expensive than a durable wire enclosure.

The kitchen-garden is about 9 acres in extent. Hardy fruit and vegetables, like the several other departments of gardening, are well managed, collectively giving evidence of the skill and attention brought to bear on their cultivation. *T. B.*

[For an illustration of the mansion at Longleat, see separate Supplement.]

## STYRAX JAPONICUM.

This is a hardy deciduous shrub, whose appearance should be a passport to public favour, and yet it is very little known even in nurseries. We have spoken of it as hardy in ordinary winters, how it would be affected by such phenomenal winters as ushered in the present decade we have no information. The bell-shaped white flowers, loosely arranged in panicles, give the shrub a very elegant appearance, more so than in the case of the European species, S. officinale, also almost banished from our gardens. The nearly allied Halesias fare no better. It is the exception rather than the rule, to meet with them in spite of their hardihood and their beauty. Styrax officinale formerly supplied a fragrant resin used in perfumery, but this is now replaced by a similar substance procured from Liquidambar orientale, and called by the same name. For the specimen from which our figure (fig. 166) was taken we are indebted to Messrs. Veitch.



Fig. 166.—Styrax japonicum: hardy shrub; flowers white.

## A PROLIFEROUS NARCISSUS.

In that curious old book, *Horti Farnesiani*, by Tobias Aldinus, published at Rome, 1625, and which contains engravings and descriptions of certain of the rarer plants which were growing in the Farnese Gardens at Rome, is an excellent engraving (p. 98) of Narcissus chalcedonicus proliferus. It is very similar to pl. xxxiv. in Burbidge's *Narcissus*, a double Tazetta or Polyanthus Narcissus, with the very curious peculiarity of each flower having a satellite flower projecting from its calyx, as in the Hen and Chickens Daisy (only that each hen has but one chicken). This is a form of double double flowering

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which I have never met with in my experience, and so far as I can learn it has not been noted by any writer of recent years. It will be interesting to learn if some of the large Dutch Narcissus growers have ever noticed it.

The Latin description, freely translated, states:—"We know of certain plants producing proliferous flowers, such as Bellis proliferum, Chaltam (?), Ranunculus, Anemone, &c. My present intention is to give a plate of Narcissus calcedonicus, proliferous to the extent of one flower only. I could also have shown proliferous flowers of the scented purple-black Scabious, which flowered with us three years ago, but as we did not have them drawn, it must suffice to note it. But a flower of Narcissus calcedonicus, a picture of which we give, does not vary from the others, except that it produces another little flower from the inside of the leaves (sepals). The leaves and the bulbs are of the same kind as the others, amongst which, by chance, we found it, and as the flower is rare, we wished to give the drawing to the curious." *Wm. Brockbank, Brockhurst, Didsbury.*

# New Garden Plants.

SACCOLABIUM GIGANTEUM (*Lindl.*) PETOTIANUM.

The large, very rigid flowers are of the poorest white. I have never seen anything like it. It comes from Cochin China, and is now in flower with Mons. Godefroy-Lebeuf, of Argenteuil. It is inscribed to Mons. Petot, one of the most enthusiastic French Orchidists of our day. *H. G. Rchb. f.*

## NEPENTHES.

HIGHLY specialised plants, or those with peculiar adaptations, fitting them for unusual conditions of life, command the attention of naturalists of all ages, and people in general, in proportion to the amount of their singularity, and the extent to which their life histories are known as well as their special physiology. We are so accustomed to seeing adaptations in the animal world, that it ceases to arrest our attention, and we are apt to attribute such phenomena to animals alone. As science progresses and knowledge gets disseminated, so are we able to obtain correct views of Nature.

The genus Nepenthes, containing over thirty well marked species, offers a specially interesting case, and is pre-eminently adapted for observation, for various reasons. In addition to the curiosity attaching to them must be added their showiness and suitability for garden decorative purposes as well as their amenability to cultivation. Their value as subjects for cultivation depends principally upon the pitchers; for although the flowers are more or less showy, the size necessary to attain a flowering condition militates against their being grown to such dimensions, except by the curious or those with plenty of space at command, or who are desirous of obtaining seed. Therefore it will be evident, that variety must be sought in the habit of the plant as a whole, but more especially in the form and colour of the pitchers. Amongst distinct species in cultivation, there is no lack of diversity of form, but an examination of a considerable number of garden or hybrid varieties reveals a paucity of innovation, inasmuch as the progeny in most cases is traceable to a few original species, such as N. Rafflesiana, N. distillatoria, and N. phyllamphora. The first-named, and undoubtedly the most popular, is extremely variable in a state of Nature, and together with its well marked variety N. Hookeri, has given rise by hybridisation to Chelsoni, Dominii, intermedia, Outramiana, Lawrenciana, Williamsii, robusta, and several others, the parentage of which is traceable by the general outline assumed by the sorts in question.

In all the above-mentioned hybrids, excepting N. robusta×, the form most assuredly resembles N. Rafflesiana figured in the *Botanical Magazine*, t. 4285, and the *Gardeners' Chronicle*, vol. ix., n. s., p. 177. This form it will be observed in all the pitchers of the lower part of the plant, is pouch-shaped, and tapers gradually from a wide bottom to the orifice without any contraction in the middle above a bulging base, observable in N. distillatoria, N. Khasiana, and N. phyllamphora, frequently employed by hybridists. The shape of both types specified will be found on examination to bear a definite relation to the space occupied by the secreting glands in the interior of the pitcher. In N. Rafflesiana, and all those above described as conforming to it in shape, these glands occupy the whole of the interior with the exception of the space immediately beneath the "peristome," or rim, and that part behind the pitcher which is more or less elongated supporting the operculum or lid. The sudden contraction observable about the middle, or below that in the N. distillatoria group, is present here at the termination of the glandular surface, and close to the orifice as already indicated. This part interiorly is glassy smooth and glaucous, and known as the conducting surface. N. Veitchi, N. ampullaria, N. bicalcarata, and N. Rajah are species agreeing with this type, and although they differ considerably in their proportionate lengths, they all agree in the extent of surface occupied by the glands in the conducting surface being reduced to a minimum, and in the contraction at the termination of the glands occurring close to the peristome. The other type, much used by the hybridist, and represented by N. distillatoria, has pitchers more or less ampliated or swollen in the lower part, and then suddenly contracted somewhere near the middle. The termination of the glandular surface corresponds exactly to this contraction, so abruptly differentiated is it from the non-glandular conducting surface which is also denoted by a different colour. Besides those already given, N. sanguinea, N. Mastersiana×, N. gracilis, N. Reinwardtiana, N. Edwardsiana, N. Kennedii, Hookeræ×, N. Morganæ×, N. superba, and numerous others, both species and hybrid sorts agree in the distribution of the glands. For garden purposes this distinction is obvious, and serves to give variety as much as colour does.

In connection with both these types, two forms of pitchers are often produced on the same plant. Near the base, broad-bottomed pitchers are developed, and these would, in a state of Nature, rest on the ground, but as the plants climb up, and the pitchers are swung in mid-air, a long, curved base is developed, giving them a trumpet appearance. This may be seen in the figures already referred to, and also in the case of N. Northiana, figured in the *Gardeners' Chronicle*, December 3, 1881. It is evidently designed to strengthen the connection between the pitcher and its slender stalk, which would otherwise be liable to be broken away by the weight of liquid contained in the pitchers, by animals drowned in it, and by others seeking the spoil. Owing to the custom of keeping the plants low by pruning this trumpet form of pitcher is less frequent than the other in gardens. It seems to be a constant character, however, in N. phyllamphora and some others to have a greatly curved tapering base. The distribution of the secreting glands is not affected by it. In N. ampullaria, where the stalk supporting the pitcher is very short, it is less material whether this tapered elongation of the base occurs or not. Judging from dried specimens of N. Pervillei, a species from the Seychelles apparently not yet in cultivation, the pitchers are remarkably funnel-shaped, dilating gradually from a narrow base to a wide open mouth, and 3 to 7 inches long, with a width of 1½ to 2½ inches at the orifice in a dried state.

The wings serve as another important feature in giving character to various forms of pitchers. They are, however, variable in different species and at different ages of the plant in the same species. When plants are allowed to run up, the wings of pitchers borne on the upper part have a tendency to become much reduced in width or altogether obsolete. This is the case in several already mentioned, together with that fine, but rare species, N. sanguinea, figured as early as 1849 in the *Gardeners' Chronicle*, p. 580, and again in vol. ii., n.s., p. 13, besides other works. By reference to the figure of N. Northiana, there seems to be no reduction of the wing in the trumpet-shaped pitchers with tapering hooked bases.

In seeking to secure variety the cultivator should attend to all these leading characteristic features, but more especially the hybridist who desires to infuse fresh attractions or striking novelty into his seedlings. The degree of hairiness is sometimes of importance, as exhibited by N. Veitchi, N. villosa, and N. Rafflesiana var. nivea. The latter would seem a desirable variety to introduce, on account of its being felted with white hairs. Under the microscope the hairs of ordinary sorts present some remarkable and curious forms. They are usually much branched, and resemble brown star-fishes in some cases, and miniature plants in others, having a central axis furnished with gracefully arching or spreading leaves.

The rim is sometimes elaborately developed, and becomes a feature of prime importance as far as conspicuousness and variety of form is concerned. It adds materially to the distinctness and value for garden purposes of N. Veitchi, and the same, no doubt, will apply to N. Northiana, and in a measures to N. Rajah, when good-sized pitchers are obtained in a state of cultivation. The latter is figured in the *Gardeners' Chronicle* for October 15, 1881, from a native specimen, and also from a seedling raised in this country. Two species not yet introduced to cultivation would furnish a novel feature amongst their numerous curious congeners already inhabiting our stoves. The pitchers of N. Edwardsiana often exceed a foot in length, and the orifice is surrounded by a complicated spiral-looking rim resembling a large screw. The pitchers of N. echinostoma are 8—10 inches long, while the peristome is developed into a dense array linear acute processes about half an inch long.

The two spurs of N. bicalcarata already in cultivation are developments of the rim, and the same thing may be observed in other species, though in a more incipient degree. *J. F.*

## BOMAREAS AT KEW.

OVER fifty species of Bomarea are known to science, of which a few only are in cultivation—a neglect they by no means deserve considering the showy character of the flowers of many species, their long-lasting properties and the little difficulty attending their cultivation. They closely resemble their near allies, the Alstrœmerias, but are readily distinguishable by their generally taller, climbing, or more properly twining habit, regular flowers, and tuber-bearing roots, although it is yet undetermined whether or not this last character is prevalent throughout the genus. A few species have been described under the name of Collania, but they do not differ from the type except in the shorter, more erect stems.

A greenhouse temperature is sufficient to grow and flower them to perfection. Many of them will also fruit under these conditions, and some are not only conspicuous and interesting in that state, but are highly ornamental. A good friable loam with an admixture of peat, or, what is better, well decayed leaf-mould, with sufficient sand to keep the whole porous and open, is all that these noble Amaryllids require in the shape of soil. They may be grown in pots while young or insufficiently rooted, but will give most satisfaction if planted out in a well-drained bed or border.

A number of species are so planted at Kew on a raised and brick-built border that also does duty for side-staging in the succulent-house. Prominent amongst these is B. Carderi, seldom seen without either fruit or flowers, and frequently bearing both. This is one of the more robust species, and has a very telling effect when the huge branching umbels hang down from the roof, displaying its large waxy tubular or funnel-shaped flowers. The outer segments are rose-coloured, while the inner are slightly longer and paler, but more profusely spotted with purplish brown. The fruit is hexagonal, attaining a large size, and assuming a yellow colour as it approaches maturity. An inflorescence is figured in the *Gardeners' Chronicle*, 1876, vol. v., p. 793, and fruit in 1879, vol. xii., p. 617.

B. Caldasiana occupies a similar position to the last, trained up the end of the house close to the glass. The stems attain a considerable length, bearing at their apex a simple umbel of highly coloured flowers. The outer segments are orange-scarlet, while the inner are much longer and bright yellow, attractively spotted with small red dots. It is not, however, so persistent a bloomer as B. Carderi. There is a figure of this species in the *Botanical Magazine*, t. 5442.

The inflorescence of B. patococensis is also simple with numerous flowers of a nearly uniform rich crimson. Variety is secured in the colour, but this is of secondary importance when the periods of flowering in different species do not coincide. The most serious objection to this species, as well as B. Caldasiana and some others, is the length of stem, carrying the flowers so far above the eye of visitors. This evil might be remedied or modified to some extent by a timely arrangement of the upper end of the shoots previous to flowering; for these, like all the rest, flower at the apex only. There is a figure of B. patococensis in the *Gardeners' Chronicle*, xvii., p. 187, under the name of B. conferta.

The comparatively short slender stems of B. oligantha, coupled with its free flowering habit, as exhibited in the Kew plants, render this species a desirable one where space is limited. The name signifies few-flowered, and some descriptions say the umbels are one or two flowered, but from eight to twelve are most commonly produced. The outer segments are spatulate and orange-scarlet; and the inner ones somewhat longer, much broader, and bright yellow, spotted internally with small blood-red spots.

Bomarea Shuttleworthii has a bold branching inflorescence of orange-scarlet or vermilion flowers. The outer segments are somewhat spotted, and nearly

equal to the inner segments, which are red and yellow, spotted near the tips with a dark colour. This handsome species would contrast well with B. Carderi. The Kew plant is not sufficiently strong to flower, but a figure may be seen in the *Gardeners' Chronicle*, 1882, January 21, figs. 11 and 14, p. 77.

B. edulis was described by Herbert, and was amongst the earliest introductions of the genus. It is also known as Alstræmeria oculata. The flowers are more or less crimson tipped with green; and the plant is further recommended to the notice of cultivators by the showy character of the seed. When the capsule is mature it splits open along the truncate apical end, exposing the numerous round seeds, the testa of which becomes pulpy and bright scarlet. The fruits are in this condition at the present time, and render the plant noticeable in the dull winter season. The plant was originally introduced in 1806, and is figured in the *Botanical Magazine*, tab. 1613.

A small plant of B. Williamsæ has been flowering more or less for months. The flowers are about 2 inches long, and produced in a branching umbel, which is said to attain large dimensions in full-sized specimens. The perianth segments are rose-coloured, more or less spotted. The stem and leaves betoken a robust habit of growth, and the small plant its free flowering character.

B. frondea and the following species have tall leafy stems, and although not so free flowering as several of the above mentioned species, are distinct and more or less showy in their way. B. frondea has funnel-shaped flowers with deep yellow outer segments, while the pale yellow inner ones project half an inch beyond them, and are beautifully spotted. It is figured in the *Gardeners' Chronicle*, May 20, 1882, p. 669, fig. 102.

B. acutifolia is another old introduction, and seems to vary considerably in the colour of the flowers in a wild state. The outer segments vary with deep orange and some shade of yellow, while the inner ones are paler and more or less spotted. Several varieties have been figured from time to time in the *Botanical Magazine*. *J. F.*

## THE GIANT BROMELIADS OF CHILI.

In a hasty notice (*ante*, p. 296) of the paintings of Chilian flowers and vegetation recently added to the Marianne North Gallery at Kew, I ventured to suggest that the gigantic yellow and blue-flowered Puyas might be merely varieties of the same species. I thought this might be so, partly because both Molina and Gay mention only one species, and partly because I failed to find any differential characters that seemed to be of specific value in the meagre herbarium specimens and the reduced figures in their *Journal*, the *Botanical Magazine*, and elsewhere; but I was in error. I had overlooked a life-size painting, placed in the porch of the gallery, of the inflorescence of one species; and Miss North subsequently pointed out to me easily recognised differences in the foliage by which the blue and yellow-flowered Puyas may be distinguished from each other. On consulting the literature of the subject, I see that there is great confusion in the synonymy of these two large Chilian species of Puya, in consequence of Molina's original name having been sometimes applied to one and sometimes to the other, and sometimes apparently to a combination of the two. By beginning with the earliest author, and comparing his description with later descriptions and figures, and Miss North's paintings, I am able to give what I believe to be the correct history and synonymy of the two species which exhibit the following distinctions:—Leaves straight, green on both sides; flowers yellow. P. chilensis, leaves recurved, glaucous beneath; flowers blue. P. Whytei, Molina (*The Geographical, Natural, and Civil History of Chili*, English edition, p. 130), gives a popular description of a plant bearing the vernacular name of Puya, which name he proposed to retain as the botanical appellation of the genus he there formally founded for the plant in question. On p. 288 of the same work, there is a very brief Latin description of the genus Puya, with which is coupled the specific name of chilensis. Although the description is meagre and imperfect, it is not difficult to understand that it applies to one of the noble Bromeliads with which later botanists have associated the name; and as he states that the flowers of his species were yellow, there can be no doubt which of the two now known should bear the name chilensis. Then, as now, the trunk was used as cork throughout Chili, and Molina mentions that the inflorescence attained a height of 9 feet. Although Molina was the first to give the plant a botanical name according to the binominal method, he was not the first to publish an account of it, for Feuillée described and adequately figured it in 1725 as Renealmia ramosa lutea foliis spinosis. In the second Spanish edition of his work Molina changed the specific name to suberosa. In 1798 Ruiz and Pavon (*Systema Vegetabilium Floræ Peruvianæ et Chilensis*, p. 81) reduced it to their genus Pourettia, with the specific name coarctata, whilst Gay (*Flora Chilena*, vi., p. 11) restores Molina's generic name, but retains Ruiz and Pavon's specific appellation of coarctata. All this synonomy, with the additional name of Pitcairnia coarctata, Persoon, is correctly given in the *Botanical Magazine*, plate 4715, which was drawn from a plant that flowered in a cool stove at Kew in 1853. Philippi (*Linnæa*, xxxiii., p. 246), describes a species of Puya with a stem 10 to 15 feet high, and having straight leaves, green on both sides, and yellow flowers, to which he gives the name gigantea. I have no doubt that this is the true P. chilensis, and also that Philippi's "emended description" of P. coarctata in the same place refers to P. Whytei, for he says, "foliis recurvis subtus argenteis, petalis pallide viridi-cœruleis."

The first publication of the species having blue flowers and recurved leaves, glaucous beneath, is, as far as I can discover, in the *Botanical Magazine*, plate 5732 (P. Whytei, Hooker), which was drawn from a plant imported from Chili by Messrs. Veitch through Mr. Mark Whyte. It is there suggested that the Puya cœrulea, Miers (*Botanical Register*, 1840, plate 11), may be the same, but that, from specimens preserved in the Kew Herbarium, appears to be a Pitcairnia, which differs in habit as well as in the seed-vessel from Puya, which should be restricted to plants of the type of P. chilensis and P. Whyte.* See also *Gardeners' Chronicle*, October 1, 1881, xvi., p. 437, fig. 82.

The synonymy of these two species may follow here:—

1. Puya chilensis, Molina, syn. P. suberosa, Mol.; P. coarctata, Gay; P. gigantea, Philippi; Pourrettia coarctata, Ruiz and Pavon.
2. Puya Whytei, Hooker, syn. P. coarctata, Philippi, not of Gay.

The Marianne North paintings include life-size representations of the inflorescence of both species, as well as the reduced plants in several landscapes, from which it is evident that they have never yet attained their full development under cultivation in this country.

Besides the foregoing there is one other Chilian Bromeliacea in the collection, which I think may be the Puya rubricaulis, mentioned in the *Botanical Register* in the text referring to Puya cœrulea, and of which there is a dried specimen in the Kew Herbarium, though no description of the plant under that name has been published that I can find. It must also be near Puya paniculata Philippi (*Linnæa*, xxxiii., p. 247), but that is described as having bracts much shorter than the pedicels. *W. B. Hemsley.*

## ORNAMENTAL BERRY-BEARING PLANTS.

(*Continued from p. 718*)

Having in previous numbers directed attention to the larger growing trees and shrubs with ornamental fruits we will now conclude the subject by bringing under notice some of the dwarfer growing kinds that at the present season are almost invaluable for rock-work and border decoration.

### Pernettyas.

Amongst these the various Pernettyas are undoubtedly the most popular, and deservedly so, for whether in the embellishment of rockwork or for planting in the front lines of shrubberies, or narrow, sunny beds, they certainly stand pre-eminent. The diversity of colour in the fruit is simply astonishing, ranging as they do from white to deep blackish-maroon, the intermediate tints of pink and deep crimson being especially effective. In all the varieties the berries are the size of large Peas, hang in massive clusters all along the erect branches, and if left unmolested remain in good form for a considerable time, even until the plants are producing their new buds in spring. Some of the most distinct varieties are as follows:—Alba, with white berries; nigra major, a distinct form with black berries; purpurea macrocarpa, purple, large-sized fruit; rosea macrocarpa, bright rose berries; lilacina, light lilac, effective and pretty; with hosts of others that space will not permit our mentioning. Whilst advocating the extensive use of these varieties we must not forget a word in favour of the normal form, P. mucronata, which as a neat evergreen bush that during the winter and spring months is literally smothered with purplish-red berries, has few equals amongst ornamental shrubs. Good sandy, well-drained loam, with or without the addition of peat, will meet the requirements of these plants well.

### Gaultheria procumbens.

A low-growing, almost prostrate plant when seen at its best, with the bright scarlet berries peeping from amongst the pleasing crisp foliage, which seem to concentrate nearly every conceivable tint between green and red, is indeed a desirable border or rock-work shrub that, unfortunately, one sees but far too seldom. Peaty soil suits it well, but in this respect it is certainly far from particular, the finest bed we have ever seen being in the grounds of the North Wales University College at Bangor, where the soil is loam of a very ordinary quality lying at no great depth on shaly rock. G. nummulariæfolia can scarcely be overpraised, for whether in flower or fruit, both of which are borne profusely even on young plants, it is a distinct and ornamental acquisition to any peaty bed or border.

### Skimmia japonica,

not less valuable for its bright scarlet berries in autumn than for its terminal panicles of fragrant whitish flowers in spring, is a low growing evergreen with Laurel-like leaves and a good habit. Just now, when the stout short branches are literally covered with berries, the plant is very effective, and never fails to attract the attention of even the most unobservant. Loamy soil and a sheltered northern aspect are its chief requirements, at least these are the conditions under which it succeeds in our home nursery here, where, at present, a narrow border is quite a glow of red from the large production of fruit. Birds are particularly fond of the berries, indeed, more so than those of almost any other shrub, which is year after year found out on the weather becoming the least severe, when, in a few days, the bushes are quite stripped of their beauty.

### The Mezereon (Daphne Mezereum),

with its beautiful coral-red berries, is perhaps never more effective than when grown in cool moist soil alongside a running stream, having then a very different appearance to what it presents, as usually seen in hot, dry borders, and in company with other shrubs. A clump or bed planted of this alone in some cool partially shaded position, is sure to form a most attractive feature, either from the sweet-scented blossoms, which are produced in quantity when but few other shrubs are in flower, or the beautiful bright red berries that usually are produced in such rich profusion towards the end of the year. There is a white-flowered variety which is even prettier, certainly choicer, than the ordinary purple, and its berries are of a soft amber colour, thus offering a marked contrast to the coral-red of the normal plant. Well do I remember some years ago when seeing a veritable specimen of this yellow-berried form—4 feet in height by about the same in diameter—literally covered with fruit, of feeling the inclination to rank it as the most perfect, and certainly not the least beautiful berried shrub I ever had the good fortune to behold.

### Margyricarpus setosus,

the bristly Pearl-fruit shrub, a trailing habited Rosaceous plant with bright evergreen foliage and snow-white, pearl-like fruits, cannot but be a favourite with all who have seen it. For rockwork it is particularly well adapted, being of a compact, neat habit, with small shining leaves, nearly white stems, and an abundance of fruit, which are carried nearly throughout the year. It is a rare plant, being as yet only found in a few collections, but when better known, and the reputed tender nature of the shrub dislodged from our minds, it will no doubt be more extensively used.

* What the Puya gigas, André (*Revue Horticole*, 1881, p. 324, fig. 74), is, is very uncertain, the flowers being unknown. It has the foliage of an Agave, with a flower shaft from 20 to upwards of 30 feet high.

A light, rich, vegetable soil suits it well, and when placed on the rockwork, where the trailing stems and bright berries rest on a dark-coloured boulder, this singular plant will be found as ornamental as it is uncommon. A native of Peru, and introduced in the year 1829. *A. D. Webster, Penrhyn Castle.*

## THE GENUS ODONTOGLOSSUM.

(*Continued from p. 180.*)

O. RUCKERIANUM is a very variable kind, running from the original form, figured at p. 204 of this volume, which first flowered with the late Sigismund Rucker, up to much showier things, many of which are cherished in collections with distinguishing names (see fig. 167). The flowers are white or cream-coloured, often tinged with pink, and always more or less marked with brownish-red markings. F. A. Philbrick, Esq., of Oldfield, Bickley, received a First-class Certificate for a very fine form of it at the Royal Horticultural Society, April 26, 1881.

O. ODORATUM.—This is so variable that the circumstance has given rise to a multiplicity of names for what can only be regarded as one species, all having freely branched spikes of Hawthorn-scented flowers. The originally figured form is of the smaller flowered Venezuelan kind, which comes, too, from the forests of the Sierra Nevada of Merida 5000—7000 feet altitude. The O. nævium majus of *Folia Orchidacea*, described as coming from New Granada at a height of 8000 feet, is certainly a form of O. odoratum, with perhaps the whitest ground to the flowers of any. Various other forms have been imported from different localities, some of the finest figuring as O. gloriosum. The most beautiful variety of all perhaps is that robust flowerer which Messrs. F. Sander & Co. imported from Santa Martha last year. The flowers of most of the varieties of O. odoratum are light yellow marked with reddish-brown.

The following, also, in form and odour, or in some other peculiarity, have, in different degrees, traces of O. odoratum either directly or by affinity to some of the other varieties here enumerated :—

O. SANDERIANUM.—This lovely Odontoglot has not yet been estimated at its full value. Later on, when it is well grown and producing its large branched spikes of over a hundred flowers, as seen on the dried specimens, it will be much prized. Its sepals and petals are of the form of a fine O. odoratum, yellow, marked with red disc, brown lip, showy, approaching that of O. nevadense ; white, with bright crimson blotches. It is delightfully fragrant. It comes from the Sierra Nevada, altitude 7000 feet.

O. SCHILLERIANUM.—This, one of the most beautiful of the odoratum section, was described many years ago in the famed Schiller collection, since that it seems to have been lost, but has been reintroduced by Messrs. F. Sander & Co. It has stately branched spikes of numerous showy flowers, yellow, prettily marked with chestnut-red, and very fragrant

O. CINNAMOMEUM.—A very rare plant, certificated to Sir Trevor Lawrence at the Royal Horticultural Society in April, 1884. Flowers showy, closely set on upright spike ; light yellow, marked with reddish-brown, the lip having a peculiar velvety patch in the centre. A very striking and distinct variety.

O. LEEANUM.—This in general appearance resembles the last-named ; its flowers are, however, much yellower, and have a quaint likeness to those of O. pardinum. The lip generally bears a bright brownish-crimson blotch. It was one of Messrs. Veitch's introductions, and they were awarded a First-class Certificate for it at the Royal Horticultural Society, March 28, 1882.

O. CROCIDIPTERUM.—A neat variety, resembling a smaller and slender form of O. odoratum ; flowers creamy-yellow, prettily dotted and striped in small lines with brown.

O. DORMANIANUM.—This is a very charming and rare variety, a few plants of which were imported by Messrs. F. Sander & Co. last year from Ocaña, altitude 7000 feet. It bears a profusely branched spike of pretty flowers, which may be described as intermediate between O. crocidipterum and O. blandum. Flowers nearly white, spotted and lined with bright crimson, base of the lip yellow.

O. BLEPHARICANTHUM.—A very curious little variety, blending the features of O. odoratum with a trace of O. blandum.

O. BLANDUM.—A pretty and distinct kind, with slender sprays of white flowers marked with dark crimson. The lip is showy for the size of the flower, white, dotted at the base with purple.

O. CONSTRICTUM.—This is one of the smallest flowers of the section, but that is made amends for by the profuse manner in which they are produced, so that a good specimen of it, with four or five of its slender arching spikes, is by no means an insignificant thing. Sepals and petals yellow marked with brown, lip white.

O. CRISTATUM bears distinct features of column and crest, but to a florist's eye it has something of the appearance of O. constrictum, and has flowers of similar size. Sepals and petals dull yellow, marked with brown, lip whitish. Flower-spikes slender and aching. Native of Peru.

O. WALLISII.—This is a very elegant kind, with slender drooping spikes of unbranched or sparsely branched flowers, in appearance something like those of O. Lindleyanum, but thinner in substance. The sepals and petals are bright yellow, with a few brownish lines, column prominent and white, lip white, with violet spots.



FIG. 167.—ODONTOGLOSSUM RUCKERIANUM INSIGNE.

O. W. PURUM is a bright light-coloured variety of the previously named, having a white lip tinged with lemon-yellow. The varieties of O. Wallisii are really pretty and well worth growing. The plant is by no means common, as no regular importation of it has been got over. *James O'Brien.*

## A GRINDING MACHINE.

THIS machine is the result of a series of experiments made in order to obtain a light but strong portable machine, of simple construction, easily worked, and capable of grinding quickly, in the field, the sections of the sickles and knives of reaping and mowing machines, with great ease, in a thoroughly efficient manner. (See fig. 169.)

Every user of reaping and mowing machines knows from experience how very much better and more easily all sickles and knives cut when kept thoroughly sharp, when the cutting bevels of all the sections are uniform, and the heels well ground ; also how much more and better work is done in a given time when the sickles and knives are kept constantly in first-class condition. The machines weigh 23 lb. each, and are specially adapted for use in the field.

The grinding stones or rollers of the machines are of the very best quality of corundum, the hardest material known to science except the diamond. These corundum rollers are made of special form and bevelled off to suit the angle which experience has shown to be the best adapted for cutting. They grind equally well wet or dry, are marvellously lasting, and give the greatest safest satisfaction to all users. Should they become dirty in process of time, through grease or gummy matter, they are easily cleansed by the use of water, or soap and water. The maker is Mr. T. Barraclough, 8, King Street, Manchester.

## GARDEN PALMS.

(*Continued from p. 587.*)

HOWEA, *Beccari.*—This genus is composed of two species (according to Hooker one) of Australian Kentias, so-called, viz., K. Fosteriana and K. Belmoreana. In gardens it is usual to distinguish these two Palms from each other by the colour of the petioles, the former being said to have dark green, the latter red-tinged leaf-stalks or "stems ;" or again, the plants with broad leaf-segments are called K. Fosteriana, and those with narrow ones K. Belmoreana. But, however convenient these divisions may be in a garden sense, they do not run parallel with the characters by which botanists distinguish two species, for we have had all four of the above characters among seedlings raised from one batch of seeds imported as K. Fosteriana. A third name for these Palms is K. australis, and which has been given to the form called K. Fosteriana. With reference to the species above named the following note is taken from Bentham's *Flora Australiensis* :—"F. Mueller distinguishes two species, the K. Belmoreana, or 'Curly Palm,' with the segments of the leaves converging upwards, and K. Fosteriana, or 'Thatch Palm,' with the segments hanging. The specimens, as far as they go, show no difference, and the distinctness of the two, whether as varieties or species, remains to be ascertained." Wendland considers that "Kentia australis is perhaps a good species, but Fosteriana and Belmoreana are doubtfully distinct."

Full grown plants have a stem 35 feet high, smooth, annulated, and bearing a crown of shining green leaves which are 8 feet long, pinnate, the segments numerous and acuminate and gracefully arching, as also is the whole leaf. The fruit is oblong or ellipsoid, 1—1½ inch long, the pericarp, when dry, like the husk of a Cocoa-nut, enclosing a seed the size of a Damson. Seedling leaves bipartite, usually the third leaf becoming pinnate.

The beauty and usefulness of these Palms is abundantly recognised by their being keenly sought after by nurserymen and plant decorators. They form pretty little table plants in about two years from seeds, and when grown on they assume a most elegant character, which, whether in the stove or exhibition tent, is rarely equalled by any other Palm. They require the treatment of tropical stove plants.

ments, which are broad on small plants, dark green and shining. As an ornamental plant this is frequently cultivated in gardens. It requires a moist tropical stove, where, with liberal treatment as regards water and soil, it soon developes into a majestic Palm.

*H. Wendlandiana*, Wendl. and Dr. (Kentia Wendlandiana, F. M.).—Tropical Australia.



FIG. 168.—CHAMÆCLADON METALLICUM. (SEE P. 750.)

*H. Fosteriana*, Beccari.—"Flat or Thatch-leas Palm" (Kentia Fosteriana, F. Mueller; K. australis, Hort.; Grisebachia Fosteriana, W. and D.).—Lord Howe's Island.

?*H. Belmoreana*, Beccari.—"Curly Palm" (Kentia Belmoreana, F. M.; Grisebachia Belmoreana, W. and D.).—Lord Howe's Island.

HYDRIASTELE, *Wendland and Drude.*

Under this name is placed the beautiful garden

HYOSPATHE, *Martius.*

There are three species included under this, all natives of Brazil. They are not yet introduced into gardens, the plant known to botanists and cultivated in some gardens as H. pubigera being now placed under Prestœa.

HYOPHORBE, *Gærtner.*

The three species included here belong to the most useful of cultivated Palms, as they are clean, free

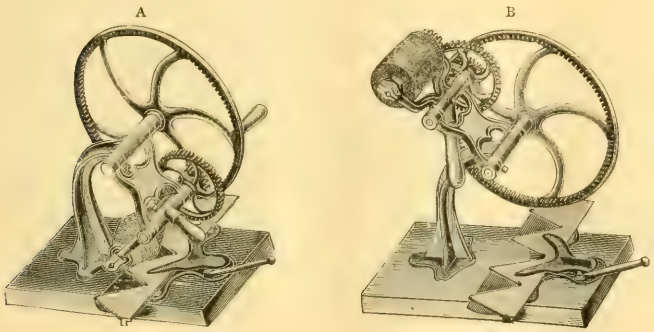



FIG. 169.—GRINDING MACHINE: A, IN USE GRINDING REAPER-KNIFE; B, IN USE ON ORDINARY WORK. (SEE P. 748.)

Palm known as Kentia Wendlandiana, and described under that name in Bentham's *Flora Australiensis* as follows:—"A tall Palm, leaves many feet long, the segments numerous, unequal, the longest 1½ foot long, the upper ones confluent at the base, all or mostly jagged or toothed at the apex. Fruit ovoid or globular, when dry about 4 lines in diameter, and longitudinally striate, with prominent ribs, succulent when fresh, with a thin endocarp." Young plants have the appearance of some of the Ptychospermas, both in habit and in the jagged apex to the leaf segments, very graceful when young, and form handsome specimens when large. Being natives of Mauritius and Rodriguez they require to be grown in a stove, though they may be frequently used for decorative purposes in houses without doing them much harm. There is in gardens some confusion with H. indica and the plant known as Areca lutescens, referred by Wendland to Chrysalidocarpus. The former has a single stem, which when full grown is 40 feet or more high, tapering, and about 6 inches in diameter; the leaves long, pinnate, the segments prominently veined, and bearing near the base whitish hair-like scales; the whole plant being uniformly dark green. The latter plant has numerous tufted Bamboo-like stems, smooth, shining, arching, rather short leaves, the petioles of which are yellowish, hence the name lutescens.

*H. amaricaulis* is a very robust Palm even when young, and is easily recognised by its brown-tinted leaf-stalks and dark green segments. Fully developed plants have stems 60 feet high, bottle shaped, 2 feet in diameter at the base, and strong leaf-stalks bearing a pinnate blade 3 feet wide by 8 feet in length.

*H. Verschaffeltii* has apparently a trigonous stem when young (really the sheathing bases of the petioles, the true stem being round), and a petiole marked with a yellow band extending along its whole length; the segments of the leaves are a dark shining green, with a prominent central nerve. When full grown it has a stem 25 feet high, with a curious bulge at the base, where it is about a foot wide. The seeds are small, from ½—1 inch long, narrow, rounded, and marked with a few irregular lines. Seedling leaves bipartite.

*H. amaricaulis*, Martius (Arecaspeciosa and Hyospathe amaricaulis, Hort.), *Illust. Hort.*, xiii., 462.—Mauritius.

*H. indica*, Gaertn. (H. Commersoniana, Martius; Areca lutescens, Bory., not of gardens).—Mauritius.

*H. Verschaffeltii*, Wendland (Areca Verschaffeltii, Hort.), *Illust. Hort.*, xiii., 462.—Rodriguez.

HYPHÆNE, *Gærtner.*

Although the plants of this genus are interesting botanically, owing to their stems being frequently branched or dichotomous, a character very rare among Palms, and economically from the ginger-bread-like rind of the fruit, which is eaten by the natives of those parts of Africa where the species are found wild, yet none of the species appear to have ever become established in European collections, notwithstanding their having been frequently raised from seeds, both at Kew and elsewhere, during the last thirty or forty years. Young plants of the "Doum Palm," H. thebaica, are in the Kew collection at the present time, but these show a very stubborn disposition as regards growth, though they are now healthy enough. According to Dr. Kirk, some of the species are common to the maritime region, as is the Cocoa-nut, whilst others are found only inland along river banks. H. thebaica, according to Sir Joseph Hooker, is a native of a wide area along the eastern coast of the African continent.

As far as can be made out this species grows in sandy regions, though probably where its long tap-roots are within reach of a constant supply of water. At Kew, recent experience with young plants of H. thebaica show that an unusual amount of root-room is required as soon as they germinate, any attempt to cramp the roots in small pots proving fatal. A plant placed with the lower part of the soil in water, kept at a temperature of about 80° is healthier and more promising than others not so treated. A Palm which grows only to a height of 30 feet, the stem many times divided at the top, and bearing large fan-shaped leaves, is botanically, at all events, deserving of a great deal of attention, with a view to getting it established in this country. The form of the stem varies with the species, some being ventricose, others cylindrical, others dichotomous. There are no spines either on the stem or the leaf-stalks. The fruit is Pear-shaped, oblong, or curiously bulged at the base, and the seed is egg-shaped, and about 2 inches long. A fine series of the fruits of this genus may be seen in one of the museums at Kew. Seedling leaves long, strap-shaped, acuminate, curling somewhat, and growing along the ground.

*H. thebaica*, Martius ("Doum Palm"). — Upper Egypt, Nubia, Abyssinia.

IRIARTEA, *Ruiz and Pavon.*

This genus is now reduced to five species, one only of which is known to be in cultivation with us. They are handsome and very distinct Palms, both when large and when in a small state, suitable for ordinary plant-houses. The leaves are pinnate, and gracefully arched even on young plants; the pinnæ are broad and short, premorsely cut, and are similar to those of the Caryotas and Arengas, but shorter, and often rounded like a fan. Young plants with half-a-dozen leaves are very ornamental. The species are found in the moist woods of Tropical America, where they attain a height sometimes of a hundred feet, the stems annulated and unarmed, crowned with a head of long narrow leaves, and elevated

upon a large cone-shaped cluster of thick roots which are developed from the base of the stem at an early stage, the lower part of the stem dying away, so that the stem has the appearance of having been forced up some feet from the ground by the pressure of the roots against the earth. The bark of these "aërial" roots is roughened like a grater, for which it is used as a substitute by the natives. The species are all reported to grow in wet places, so that under cultivation they require an abundant supply of water; they thrive only in a tropical temperature. The seeds are globose, about an inch long, the endocarp very thin, usually gelatinous (Spruce), forming a slightly oblong covering, and becoming almost black when old. Seedling leaves not seen.

*I. deltoidea*, R. and P. (I. robusta, Hort.).—Peru.

Several garden Palms known as Iriarteas are now referred to other genera, viz., I. exorhiza and I. gigantea to Socratea, I. andicola and I. nivea to Ceroxylon. *W.*

## CHAMÆCLADON METALLICUM.

THIS is a handsome stove foliage plant of the Aroid family, introduced from Borneo by the Compagnie Continentale d'Horticulture, and figured in the *Illustration Horticole*, t. 89. It is a tufted plant, the leaf-stalks 2—3 inches long, purplish, and sheathing, the leaf-blades 3—5 inches long, 2—3 inches broad, elliptic-acute, bronzy olive green above, reddish beneath. The inflorescence is inconspicuous. For the use of the illustration (fig. 168) we are indebted to the Company.

# The Apiary.

### ON BEE LITERATURE.

THE winter evenings are now very long, and afford the very best time to purchase and read bee books. I am going to mention the names of the best English and American books, but before commencing allow me to say that every book mentioned in this article now lies before me, and as I have more than dipped into them your readers may rely on my statements.

One of the very best published in England, if not the best, is *The Apiary*, by Mr. Alfred Neighbour. This book has been through several editions, and the last edition has been almost entirely rewritten, and is thoroughly reliable and accurate. The *British Bee-Keeper's Guide Book*, by Thomas William Cowan, Esq., is a very good little book indeed, and is written by one of our most successful bee-keepers. Other very good books are *Bee-keeping Plain and Practical* by Alfred Rusbridge, and the *Bee keeper's Manual*, by the late Henry Taylor, and revised by Mr. Alfred Watts. Then we have the *British Bee Journal*, at present published fortnightly, but to be published weekly, commencing with January, 1886.

I have been greatly instructed by a splendid lot of books, published in the United States of America. It must not be forgotten that the Americans were first in the field with some of our most useful appliances, and the apiaries in America must be very extensive, and make one long to see them.

*The Hive and Honey Bee*, by the Rev. L. L. Langstroth is a very fine work on bees, and is indeed a classic. The only fault to find is that as it has not been revised since 1858 it is not quite up to the times, but Mr. Langstroth tells me he is bringing out another. He is very advanced in years. May he live to do it is our wish. *The Bee-keeper's Guide*, by Professor A. J. Cook, of Michigan State Agricultural College, is written by a scholar of the first order, and as the book sells so quickly fresh editions are constantly called for, and so the book contains everything required. A book that has highly pleased me is the *A. B. C. of Bee Culture*, by A. J. Root, Medina, Ohio. Mr. Root keeps the type always standing, and when he finds out anything fresh immediately puts it in type. *Bees and Honey*, by T. G. Newman, of Chicago, is an excellent book. It is rather smaller than the books before mentioned, but none the worse for that. Mr. Newman publishes the *American Bee Journal*, a weekly paper full of excellence. Quinby's *New Bee keeping* is an excellent work. It has been revised by his son-in-law, L. C. Root. *The Bee keeper's Text-Book*, by the Messrs. King, is a very nice little book, and sells well. The copyright has been purchased by King, Aspinwall & Co., of New York; 55,000 copies have been sold. *Blessed Bees*, by John Allen, is a book well worth reading, and will make you open your eyes. My name was written in my copy by "John Allen" himself, who, by-the-bye, is not John Allen, but a respected American clergyman. *The Bee keeper's Handybook*, by Henry Alley, is chiefly devoted to queen rearing, in which Mr. Alley has been very successful. In conclusion, the reader must not think the American books are arranged in the order of their merit. That would be very difficult to do. All these books can be purchased at Messrs. Neighbour's, in Regent Street and High Holborn. *Agnes.*

## ORCHIDS FOR AMATEURS.

(*Continued from p.* 430.)

### EPIDENDRUM.—4. THE BARKERIA SECTION (*continued*).

*E.* (*Barkeria*) *spectabilis.*—Stems, for they can scarcely be called pseudobulbs, quill-like, about 6 inches long, with two or three dark green leaves, alternating with each other. Peduncle surrounded at its base by a long sheathing scale-like bract. Flowers eight or ten in number, nearly 2 inches in diameter. Sepals spreading, all three directed upwards, lateral petals somewhat broader than the sepals directed downwards. Labellum broad and pointed. The whole flower is of a delicate lilac colour, with dark rose-purple spots on the labellum. It is a native of Guatemala, and flowers in summer.

*E.* (*Barkeria*) *elegans.*—Stems or pseudobulbs quill-like, 8 or 10 inches long, with four alternate sheathing leaves. Peduncle twice as long as the bulbs, green, blotched with purple, and sheathed with several scale-like bracts arising at intervals. Inflorescence a lax raceme of four or five flowers. Petals and sepals almost white within, and lilac-purple without, lip large, nearly square, with a long point. The disc of the lip has an oblong callus raised into three ridges. The limb of the labellum is nearly white, with a large purple blotch in its centre. The column is very broad, white, dotted with deep purple spots. Both the column and the base of the lip are stained with yellow. This plant is a native of Mexico, and it flowers in winter after the fall of its leaves.

*E.* (*Barkeria*) *melanocaulon* closely resembles E. elegans in its habit, but the stems are of a deep purple colour. The flower is rose-coloured to the callus at the base of the labellum, this and the column are pale green—the latter striated with deep purple. It is a native of Costa Rica, and flowers from June to September.

*E.* (*Barkeria*) *cyclotella* is intermediate between the two last-named species. The flowers resemble those of E. elegans, and the stems those of E. melanocaulon.

*E.* (*Barkeria*) *Lindleyanum.*—The whole plant resembles E. elegans, but the flowering stems are more slender. The flowers are of a delicate lilac colour, but the disc on the labellum is white and raised into a double keel. The column is clavate and narrowly winged, its apex is 3-lobed. It is a native of Costa Rica and Panama, and it flowers in September and October. A variety of this plant,

*E. Lindleyanum Centere*, from Panama, has the anterior half of the lip of a deep purple colour. It was named after Mrs. Center, the wife of the Superintendent of the Panama Railway (*Gardeners' Chronicle*, November 29, 1873, p. 1597).

*E.* (*Barkeria*) *Skinneri.*—A very floriferous species, the racemes often consisting of from twenty to thirty flowers. These are of a deep rose-colour. It is a native of Guatemala, and flowers in winter. A variety,

*E. Skinneri superba*, is described with larger and more brilliantly coloured flowers, in which the lip has a deeper colour, and yellow striæ at its base.

### 5. RADICANS SECTION.

The remainder of the Epidendrums have a very distinct habit, the stems are cane-like, and never assume the form of pseudobulbs. These are the most brilliant plants in the genus. They will do best with pot culture, and the greater number require a high temperature. In some the stems are semi-scandent, in others they are erect, and grow 3 or 4 feet high. In some a spathe surrounds the base of the flower-stem, the subgenus "Spathium" of Lindley, in others the spathe is absent. These form the subgenera Amphiglottum and Euepidendrum of the same author. As the characters of these subgenera are somewhat recondite, and the characters seem to merge into each other, I have not attempted to separate them.

*Epidendrum radicans* (E. rhizophorum of Bateman, in *Botanical Register*, 1838).—This plant has long, climbing, jointed stems, rooting at intervals, with long white roots. The stems are leafless below, sheathed with scales, but bear numerous broad, subcordate, fleshy, sheathing leaves above. The inflorescence is terminal, and compressed into a globular head. The flowers are as much as 1½ inch across, and bright scarlet. Each head of flowers is from 3 to 4 inches in diameter, and as the plant flowers freely, it is one of the most magnificent in the genus. The lip has a yellow throat and it encloses the column, its limb is three-lobed, the lateral lobes sharply toothed, the middle lobe deeply notched (emarginate), and toothed.

This plant is a native of Guatemala, where it grows in the grass, it needs pot culture, and is most effective when trained over a wire-basket. The temperature of the East Indian-house is recommended, but it could hardly fail in the Cattleya-house.

*E. Schomburgkii* is closely allied to the last in habit and form of inflorescence. Its long reed-like stems are clothed with a double row of obtuse fleshy oblong leaves, often bordered with crimson. It emits no roots from the stems. The flowers are of a rich scarlet when they first open, but they ultimately become crimson. The sepals and petals are narrow and spreading, the lip is three-lobed, strongly keeled at its base and more or less laciniate in its limb. The form of the lip varies much, and it is often so deeply divided that it assumes the form of a circular disc surrounded by a deep fringe. It is a native of Demerara.

*E. cinnabarinum* is a third closely allied species, from Bahia. It only differs from the last in the wedge-shaped undivided central lobe of the labellum.

*E. Wallisii* resembles the three last in habit, but its tall stems, which are often 3 or 4 feet long, are clothed with leaves to the base. The stems are reed-like, and the leaves are thick and fleshy. The inflorescence is a compressed raceme, and heads of flowers are not only produced at the extremities of the stems, but at intervals from the axils of the leaves. The flowers are 1½ inch in diameter, the sepals and lateral petals are of a deep golden-yellow, dotted with small distant crimson spots. The lip is fan-shaped, deeply cut into four divisions, white, and pencilled with feathery radiating lines of crimson. Mr. Williams recommends the Cattleya-house as the most suitable for this magnificent plant. It needs an abundant supply of water when growing, and, like the three last, may be most effectively displayed by training it over a wire basket. It is a native of New Granada, and the flowers are fragrant with a musky perfume.

*E. ellipticum*, also called *E. crassifolium.*—Stems long and reed-like, with scales below, and a double row of thick, fleshy, concave, oval leaves above. The flower-stem is terminal and covered with close sheathing bracts, and it bears a profusion of pale rose-coloured flowers in summer. This is by no means so handsome a plant as the majority in cultivation. It is from the Organ Mountains. A closely allied species, with narrower leaves and darker flowers,

*E. elongatum*, is a native of the West Indies. It is also sometimes cultivated.

*E. syringothyrsus.*—This plant has reed-like stems, 3 or 4 feet high, with bright green distichous leaves, and a dense terminal panicle of deep purple flowers. The labellum is white. There are often as many as a hundred flowers on each stem. It is a native of Peru, and is found in damp places on the mountains at an elevation of from 7000 to 8000 feet. It, therefore, requires cool treatment, and should be grown in the Odontoglossum-house. *B. T. L.*

(*To be continued.*)

# The Flower Garden.

### HERBACEOUS BORDERS.

PLANTS may be divided and rearranged if required, and as most herbaceous plants flourish best in a deep and rich soil it should have some well decayed manure dug in between them, and if leaf-mould is put round the plants they will be protected from the frost.

### SHRUBS AND PROPAGATING.

Now is a good time to put in cuttings of Aucuba japonica, Euonymus japonica and its varieties; also Laurustinus, Ivies—green and variegated kinds,

Lonicera aurea reticulata, Retinosporas and Thuia Lobbii, T. lutea, T. Hookeriana, Thuiopsis borealis, T. aurea variegata, and T. dolabrata. I propagate the abovementioned plants in three different ways, first by layers, which make plants far quicker than by cuttings. In doing so clear round the bottom of each shrub, then place some light sandy mould on the surface round the plants to be operated upon, then take shoots a foot long and cut a notch or tongue, pegging them down firmly and cover with the light mould. In twelve months they will have made nice plants, and should be cut off from the stock plant and be planted in the beds. Cuttings root freely if put into frames, or under handlights placed under a north wall. Place at the bottom of the frame 3 inches of drainage, and on the top of that place 6 inches of light sandy mould, and 1 inch of sand on the top; all should be made quite firm. The cuttings, 6—7 inches long, should be of well ripened wood, avoiding strong pieces and that which is unripened.

After taking two or three leaves from the bottom of the stem, the end should be cut with a sharp knife, and the cuttings dibbled into the frame to the depth of 2 or 3 inches, about 3 inches apart, and all made quite firm, and should then be sprinkled overhead with a fine rose waterpot and afterwards when they require it; air on fine days. As soon as they are rooted the frame can be removed. I have succeeded well in striking the above-mentioned plants by dibbling out under a northern aspect without the protection of frame or handlight, or by simply putting the cuttings into slight trenches about 3 inches deep, filling the trench with sand, and treading them firm at the finish. I find most of them grow under this treatment, and make nice little stuff fit for filling the flower-beds in winter, and when the plants get too large for that position they come in most useful for planting out into the pleasure grounds, &c. *Wm. Smythe, The Gardens, Basing Park, Alton.*

# Plants and their Culture.

## WATERING PLANTS.

THIS is a point in plant culture (in pots) that is frequently much neglected. I do not mean by this that an insufficient supply is given on the whole, nor that the other extreme is practised, but with an inexperienced man in charge, injury from the last-named source is far more likely to occur. With all beginners a proper knowledge of the requirements of cultivated plants should receive close attention, as much in regard to watering as in choosing the potting soil, and other necessaries of plant life in pots. A study of the roots, their character, and mode of growth, their durability and relative numbers in proportion to the foliage of the plant, will all need to be considered; the character of the plant itself also requires to be looked into—rapid growth in any given genus as a rule denotes a proportionate supply of water to sustain its root-action, slower growth points to a more moderate supply, whilst in the case of plants of hard wiry growth (such as many of the New Holland plants of our greenhouses) the most careful attention is essential to maintain them in a healthy state, and with such, extremes must be avoided. One point in regard to the latter class of plants requires much attention, that is, any plant that has become pot-bound, if, it has been well grown and good soil has been used, the ball will have become a compact mass of roots and soil, and most likely the roots will have taken firm hold of the surface soil. Now in such a case if there is not too much room left for the reception of water by reason of the plant being low in the pot, once or even twice filling the pot with water will not be sufficient to penetrate the entire ball; the result in such cases of omission to give water being a loss of those roots that have congregated around the drainage and lower portion of the ball of the plant. If this occurs with Ericas, or Azaleas for a few times, the issue bye-and-bye will be apparent in the development of puny diminutive flowers in the place of those of good size and strength. The slopping system of watering is bad with all plants, a little now and a little another time should not be tolerated in any case, and particularly so when dealing with plants of woody growth. Watering, too, is oftentimes hurried over in order to get on with other work. Now when this occurs, the consequences will defeat the real object in view, viz., "ill-round" success. It is a bad plan to give a superficial attention at the watering, equally as much as it is to go to the other extreme and water plants against their needing any the next day. After a close observation of the requirements of each genus, the art of watering is simplified. The health of each individual plant will need to be studied, and its state at the root as to whether it has been potted lately or become pot-bound, must also be thought of. Plants that are usually grown in peat or in a compost in which this material is the chief component, will not as a rule bear to become so dry at the root during any season of the year as those that are grown chiefly in loam or manured soil. We have been induced to make these brief remarks now, knowing that all plants require a greater amount of attention in respect to watering (*i. e.*, in a careful manner) at this season of the year, than at almost any other time. *J. Hudson, Gunnersbury House Gardens.*

# Fruits Under Glass.

## EARLY VINES.

THE time at which early Vines should be started into growth for the ensuing season will very much depend on the nature of the requirements. If a continuous supply of ripe Grapes is required all the year round the supply on hand must of necessity in the same degree rule the matter; if a sufficient supply of them on hand will meet the demands from now and onwards until the end of next April, there will be no necessity to start the first vinery earlier than the first or second week in December, because those Vines will produce ripe fruit by May 1 next, in readiness to continue the supply onwards. All those practically acquainted with forcing Vines very early know full well the trouble and expense it is, and the fatal consequences to which it speedily leads, and therefore it should be avoided as much as possible; neither is it absolutely necessary now-a-days, as it was formerly, before we possessed that excellent late kind of Grape, namely, Lady Downe's; this variety, keeping, as it does, until May, has sensibly diminished the very early forcing of Vines, and plainly indicated the advantage of growing more late Grapes, which can be produced at much less cost in every way, and which answer the end for general purposes as well as tending to postpone forcing operations at least a month, and to a more seasonable period at which year after year consecutively Vines may be gently excited without being much impaired.

## TREATMENT OF THE EARLY HOUSE.

Vines started now should be gently excited by keeping a regular temperature in the house of about 55° at night, and from 65° to 70° in the day time; in houses that will admit of a good heap or bed of fermenting materials being placed within it, this should be done, as by means of the vapour and genial condition produced, growth is more readily excited; under other circumstances it will be necessary to provide a genial state by means of sprinkling all available surfaces about the house occasionally when they become dry. Syringe the Vines early in the morning and at closing up time in the afternoon, on sunny days, freely ventilate, closing up the house at about 70°; fire-heat should only be used to keep up the heat at the points before mentioned.

## POT VINES.

Where early pot Vines are cultivated they will at some places be considerably advanced in growth now; encourage it by giving the best attention to all matters in detail. Stop the shoots at the first or second leaf above the bunch and the lateral growths above the first leaf; keep the temperature at about 58° at night, and 70° in the daytime by fire-heat, and from 5° to 10° more by solar heat, when the house should be carefully ventilated so as to avoid a cold current of air. Diligent care in the moistening of heated surfaces should also be exercised, otherwise not only the leaves but the fruit when in a tender state may be irreparably damaged. At this advanced period it will be advisable to set the Grapes when they come into flower with a camel-hair pencil, especially any kinds which may be grown that are known to require it. If the pots are plunged in beds keep the heat regular at 70° to 80°. As soon as the roots become active encourage surface ones to the fullest extent: as soon as one layer of stuff is permeated by the roots add fresh material in a warm and lumpy state. This should be applied in a rough not compact form. Watering, which is the most important operation, must be done by well practised hands, or otherwise every care should be exercised in the matter. Tepid water slightly improved with guano or other manure, should be given whenever necessary, and of which a considerable quantity will be necessary when the plants are healthful and the drainage of the pots perfect. *G. T. Miles, Wycombe Abbey Gardens.*

# The Kitchen Garden.

I HAVE not advised the sowing of Peas in autumn, having come to the conclusion that there is really no gain attached to this practice — in fact, generally speaking it ends in loss and disappointment. A south border should now be prepared (as soon as the soil is in condition for such work) in readiness to receive Peas to be turned out of small pots some two months hence. If the same south border has to be used successively for this crop a little fresh soil as well as manure should be added, such as old frame soil, or siftings from beneath the potting bench, no fear need then be entertained but what as good results as formerly will follow.

## DUNG-BED FRAMES.

The time is fast approaching when preparations for the production of early spring crops must be commenced herein. The first to claim attention will be Potatos and Radishes, and these can be produced in succession on the same hotbed. Lasting hotbeds are of the greatest importance, and to assure these the heating material must be well managed. By the end of December or the beginning of the New Year the first hotbed should be ready to receive the Potato sets. When these are planted sow the bed broadcast with early forcing Turnip Radish seed or Wood's Frame. Probably the whole of the latter crop cannot be left long enough to come to maturity but a great many bunches may be gathered before it is necessary to remove what remains small and unfit to gather, in order to clear the ground, so that the soil between the rows becomes available for earthing-up the Potatos. About the same date a smaller hotbed should be got in readiness and sown with Radishes alone. These should be pushed on, with early closing towards the afternoon; the crop on the Potato bed will form a succession to these.

## THE CUCUMBER-HOUSE.

The ill effects produced on the plants by the past dull sunless weather, will be plainly visible in weaker growth and paler foliage, and the much slower development of the Cucumbers. If it is desired that the plants keep up an unbroken supply of fruit, the young shows must be well thinned out, and only just sufficient allowed to grow large enough for use to keep up the supply. The fruit should also be cut in a young state, and not allowed to hang on the plants a day after they are large enough to use—*i. e.*, when they are from ¾—1 inch in diameter. If not already being practised, discontinue the stopping of lateral growths; should this cause a too thick canopy of foliage, some of them should be removed entirely. Watering the plants must now be done very carefully; this, and the management of the top and bottom heat, will play a very important part in the maintenance of healthy fruiting plants. The atmospheric condition of the house must also be strictly regulated in accordance with the weather and ventilation. During dull weather guard against a too free use of water, both for syringing and damping. When the weather is favourable for syringing let it be thoroughly done: the same remarks apply when giving water at the root.

On favourable mornings admit a little air early, and close in time to catch sufficient sun-heat to raise the thermometer 10° or 15° above the night temperature, which should now range from 65°—68°. On dull days the temperature should be raised 4° or 5° by the aid of extra fire-heat. At this time of year Cucumbers may be kept firm and good for quite a month after being cut from the plants. *G. H. Richards, Somerley.*

APPOINTMENTS FOR THE ENSUING WEEK.

| | | |
|---|---|---|
| MONDAY, | Dec 14 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Consignments of First-class Bulbs, Border Plants, &c., at Stevens' Rooms. |
| WEDNESDAY, | Dec 16 | Sale of 3000 Lilium auratum, and 30,000 Kentia Seeds, Plants, Roses, &c., at Protheroe & Morris' Rooms. |
| THURSDAY, | Dec. 17 | Sale of a Collection of Orchids in Flower, 5000 Lilium auratum, from Japan, &c., at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |
| FRIDAY, | Dec 18 | Sale of Importations of White Lælias, and other Orchids, at Protheroe & Morris' Rooms. Sale of Consignments of First-class Bulbs, Border Plants, &c., at Stevens' Rooms. |
| SATURDAY, | Dec. 19 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. |

NOW that the PLANTING SEASON is in full activity we may once again call the attention of landscape gardeners and proprietors to the neglected riches by which they are surrounded. What is the reason that people go on planting the same trees and shrubs to the exclusion of scores of others equally good or better? Of course the attachment to old favourites may be taken as a testimony to their value, and we shall not say a word in derogation of them. We simply plead for a wider, freer choice, and a judicious intermixture of the more interesting species with older and better known subjects. It may be urged that they are difficult to get and more expensive, but these obstacles, even if they exist, may easily be overcome. Many nurserymen, it is true, have discarded them as unprofitable occupants of the ground. Where the requisitions of the landlord, the tithe holder, the tax collector, and the labourer have to be met, there is obviously no room for unproductive land. Nevertheless, in many nurseries, and especially in those which are managed by proprietors of good taste having a liking for plants for their own sakes, irrespective of their commercial value, a few of the finer deciduous trees and shrubs are still kept more for the gratification of the proprietor than as a source of revenue. Nevertheless, if once a demand were to spring up there would be little or no difficulty in supplying it, for, disregarding exceptions few in number, the plants in question are quite hardy, easily cultivated, and propagated with nearly equal facility.

The truth is, the popular taste wants educating and improving. Look round the suburbs of our large towns and see the shocking manner in which too often the shrubberies and plantations are neglected. This, unfortunately, is quite as noticeable in cases where good things have been originally planted as where more ordinary material has been employed. It is perfectly cruel to see the manner in which the trees and shrubs around our "cottages of gentility" and suburban villas are allowed to indulge in civil war and fratricidal strife. Thinning and transplantation are rarely thought of; pruning—that is to say, ruthless hacking—is done without the slightest consideration of the habit of growth of the tree, and indeed without any consideration whatever beyond that of reducing inconvenient bulk, or the removal of an obstruction. Trees and shrubs are planted in too close proximity to the walls and windows of the residence. It may be that they are suitable enough all the time the trees or shrubs remain of small dimensions; but the residents seem to forget that in a few years the trees will have outgrown their present limits, and will be converted by the ignorant perversity of man from a thing of beauty to an eyesore, an obstruction and a nuisance. This of course arises, in some cases, from the fact that the tenants of such houses do not reckon on a long tenure, and the original planter may long since have changed his residence and repeated the same error. It is sad to write it, but there is a depth of ignorance and carelessness even greater than those we have alluded to. We have in view the cases where a house or a wall is actually built close up to a fine specimen tree or to a row of such. In most cases it would be easy to transplant them beforehand, in any case it would be better far to destroy outright than spoil and mutilate such noble objects.

We do not altogether subscribe to the doctrine that it is the bounden duty of those that call attention to errors and omissions to propound a remedy for them, though it is true that those who feel the evil most acutely are the most likely to be in a position to suggest measures for its alleviation. The Press is nearly powerless against fashion in any department. Ridicule even does not kill it. Railing is useless, and, happily, unnecessary, because sooner or later the fashion changes. The fashion that has banished from our gardens such scores of flowering shrubs, has been of long duration; there is then all the more reason to hope that a change will speedily occur, and our gardens be made beautiful and interesting with Cissus and Helianthemum, Pavias, Caryopteris, Cytisus, Ribes, Olearia, Deutzias, Eucryphia, Exochorda, Halesia, Weigela, Bignonia, Philadelphus and Buddleia, Rubus, Spiræas, Stauntonia, Stuartias, Loniceras Viburnums, and dozens of others.

However powerless the Press may be against the caprices of fashion, it is not so impotent against that other obstacle to progress and improvement—we mean ignorance.

In the particular case we are speaking of the Press undoubtedly does render service by repeatedly publishing what to plant, and how to do it; and, although, year after year, the same lessons have to be set forth, yet there is good ground for the belief that some good is effected. It is, however, to the horticultural societies that we would especially commend the work of instructing the public in this particular manner. The actual display of the thing itself is a far more effectual means of imparting information than pages of printed description, or even illustrations. We would then urge upon the horticultural societies and the framers of schedules the desirability of offering a few prizes for cut specimens of deciduous trees and shrubs, in flower or otherwise, according to circumstances. The Floral Committee, too, might readily relax its rules, and award certificates more freely to plants that it is not convenient or possible to show except in the form of cut specimens. We have only to refer to the wonderful collections of cut herbaceous and bulbous plants exhibited throughout the entire duration of the Inventions Exhibition by Mr. WARE and others to illustrate the educational, and we may say the commercial, value of such exhibits as we propose. The Royal Gardens at Kew and the several botanic gardens of the country might greatly aid by sending up specimens for exhibition in due season. Already this is done to some extent, sufficient to make us wish it were a more frequent practice.

For the diminution of that other evil of which we spoke, the neglect of shrubberies and plantations, the local horticultural societies might do much. Too often such societies confine the whole of their energy to the establishment of a floral picnic once or twice a year. This is very nice, no doubt; but it should not be the only, nor even the main, object of a horticultural society. We have often lamented the opportunities which local horticultural societies allow to run to waste, and shall not now do more than suggest to them that in their schedules they should include prizes for the best kept shrubberies and gardens. By some such means as we have alluded to, and by others which will readily suggest themselves, we may hope to see a tide of fashion set in for the now neglected classes of trees and shrubs in general, and of flowering shrubs in particular.

—— Mr. WILLIAM ABRAHAM, of Fort Prospect, Limerick, elected as a Nationalist for the Western Division of that county, is engaged in business as a nurseryman in that city, and was born about the year 1839. He was an active member of the Irish Land League. In 1884 he was elected Chairman of the Limerick Board of Guardians.

—— NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner of members and friends of this Society will be held at the "Old Four Swans," 84, Bishopsgate Street Within, on Monday evening, December 14. The chair will be taken by the President, E. SANDERSON, Esq., at 6 o'clock precisely. The prizes awarded at the recent exhibition at the Royal Aquarium, Westminster, will be distributed on the occasion.

—— DR. ASA GRAY.—A correspondent furnishes us with some interesting particulars supplementary to those we published last week concerning the testimonial to Dr. ASA GRAY:—

"We were at Cambridge on November 18, the seventy-fifth birthday of Professor ASA GRAY, and he was so gratified with the testimonial he had just received that I think you will be glad to hear about it. It was a beautiful silver vase, covered with plants in *repoussé*-work, something like the Portland Vase, only larger, and more oval, with handles, presented by 180 American botanists, and all their cards came with it on a silver salver. The vase was executed most beautifully at Boston, and the plants on it, most tastefully arranged, are those named after him, or with which he has been much identified. The stems of the handles are ornamented with Dionæa. The handles themselves are Californian Ferns—Notholæna Grayi. The most conspicuous plants on the vase itself are the Golden Rod—Solidago, an Aster, also Centaurea americana; the rest are Grayia, Lilium Grayi, Shortia, Michella repens, Jeffersonia, Rudbecka, Adlumia, &c. Some one else sent seventy-five Roses, one for each of his years; and Mr. LOWELL sent the following lines:—

> 'Just fate prolong his life well spent,
> Whose indefatigable hours
> Have been as gaily innocent
> And fragrant as his flowers.
>
> *To A. G. on his seventy-fifth birthday.*'"

—— SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.—We are informed that this Society proposes to organise, in connection with its general exhibition in Paris, from May 4—9 next, a Horticultural Congress. The object is to promote the progress of horticulture by the discussion of various points of interest.

—— A CONTRIBUTION TO THE STUDY OF TRANSPIRATION UNDER THE DIFFERENT RAYS OF THE SOLAR SPECTRUM.—A paper on the above subject, by Rev. GEORGE HENSLOW, was read at the Linnean Society on Thursday, December 3. The experiments described were undertaken to test the results of WIESNER, who found (contrary to the opinion of others, who thought that the brightest rays of the spectrum were the chief agents in effecting transpiration) that it was mainly due to the rays which are absorbed by chlorophyll. The spectrum of that substance reveals seven absorption bands, the most powerful of which are in the red, blue, and violet; and when plants were grown under coloured glasses Mr. HENSLOW found, just as WIESNER had done, that transpiration attains to a maximum under the monochromatic red glass, and under the blue and violet as well, while ordinary colourless glass gave another maximum. On the other hand, yellow and green gave a minimum. WIESNER's interpretation is that light thus absorbed by chlorophyll is converted into, or manifests itself, as heat, and then it raises the temperature of the tissues, and so causes the formation of aqueous vapour. If this be true it would seem to account for DEHÉRAIN'S discovery, that plants can transpire in a saturated atmosphere, and as a corroboration WIESNER found that light which had been first transmitted through a solution of chlorophyll was almost powerless to cause transpiration. A fact which Mr. HENSLOW could not account for was that while the red glass which admitted no other rays gave a maximum, the yellow glass, which transmitted red and green rays besides yellow, gave a minimum. It would seem as if yellow had actually a retarding effect upon the other rays. The method adopted by Mr. HENSLOW was to grow small Lettuces and other plants in miniature pots, and by wrapping them up in a gutta-percha sheeting tied round the base of the stems all loss of moisture from the earth was prevented. Then he weighed the whole day by



LONGLEAT, THE SEAT OF THE MARQUIS OF BATH.

day after its having been under each coloured glass for twenty-four hours in succession. He thus ascertained the percentages of the losses, the means of which gave the results mentioned above. Mr. HENSLOW also drew attention to the importance of distinguishing between transpiration and evaporation, the former being a vital action, the latter purely physical, which will take place from dead and living substances, but is modified or held in check to some extent by the latter. Thus if a leaf be cut in two, and one half suddenly killed by scalding, it will be found that this one rapidly dries up, while the other loses water much more slowly. Again, thick leaves and older ones absorb more heat than thin ones and younger ones respectively, yet the transpiration is greater from young leaves and deciduous, contrary to what one would expect if transpiration depended solely upon heat.

—— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held by permission of the Council of the Institution of Civil Engineers, at 25, Great George Street, Westminster, on Wednesday, the 16th inst., at 7 P.M., the following papers will be read:—"The Influence of Forests upon Climate," by Dr. A. WOEIKOFF, Hon. Mem. R.Met.Soc.; "Report on the Phenological Observations for 1885," by the Rev. T. A. PRESTON, M.A., F.R.Met.Soc.; "Etudes sur les Crépuscules Rosées," by Prof. A. RICCO; "The Storm of October 15, 1885, at Partenkirchen, Bavaria," by Colonel M. F. WARD, F.R.Met.Soc., F.R.A.S.

—— HERITIERA MACROPHYLLA.—Mr. BAXTER sends us from the Oxford Botanic Garden a specimen of this tree in flower. The tree is a native of tropical India, and belongs to the Sterculia family. Its chief interest consists in its bold foliage. The leaves are raised on long leaf-stalks thickened at each end, the oblong acuminate leaf-blades are dark green on the upper, silvery-white on the lower surface, whence the name Looking-glass tree. The young leaves are of pretty pink colour, provided on each side with a long linear lanceolate stipule. The inflorescence consists of much branched, panicled cymes, about half the length of the leaves, from whose axils they spring. The individual flowers are small, white, bell-shaped, not unlike in superficial appearance those of the Lily of the Valley, but rather smaller. The whole inflorescence with its whitish branches, and still whiter and very numerous flowers has a light and pretty appearance. The whole plant is more or less covered with small circular scales, some silvery in colour, others brownish. The silvery look of the under-side of the leaf arises from the very dense covering of these scales, as may be seen by the aid of a pocket lens of low power.

—— THE APPLE AND PEAR CONGRESS AT EDINBURGH.—The Congress was a great success from the main point of view. As an effort to instruct the multitude about hardy fruit growing, and even as regards the finances, there is nothing to find fault with, as the Congress drew a good deal more than was expected, in the midst of the General Election, and which, added to the surplus on the previous shows of the year 1885, will leave little or no deficit. The accounts are not yet made up, but there is good reason to expect that the deficit will not be great, if anything, there being sufficient funds to meet it. The work was rather hurriedly done, but as it was imperative for the jury to get through the judging in the four days; the best was done under the circumstances. — The county of Sussex was accidentally omitted in our report of the contributions from England to the Congress. Its fame as a fruit growing county was worthily upheld by Mr. RUST, gardener to the Marquis of ABERGAVENNY, Eridge Castle Gardens, who set up a numerous and interesting collection of Apples and Pears—especially rich in fine dessert varieties. They were accompanied by a few large cards, giving the soil, rainfall, altitude (400 feet above the sea-level), and similar particulars of a very instructive nature, and were a fine, clear, evenly grown lot. Among the best Apples were Kerry Pippin, the finest sample in the exhibition; Beauty of Kent, Warner's King, Sturmer Pippin, extra fine; Small's Admirable, Paradise, Hall Door, extra; Lady Henniker, Tower of Glamis, Adam's Pearmain, Washington, Brabant Bellefleur, Mère de Ménage, Cambusnethan, and New Hawthornden. Among the Pears, Doyenné du Comice, Beurré Bosc, Glou Morçeau, Doyenné d'Alençon, Vicar of Winkfield, Van Mons' Léon le Clerc, Josephine de Malines, Beurré Sterckmans, and Triomphe de Jodoigne were some of the largest and finest.

—— SCOTTISH HORTICULTURAL ASSOCIATION.—This Association met in the Bible Society's Rooms, Edinburgh, on the evening of Tuesday, Dec. 1, Mr. ALEXANDER MILNE, Edinburgh, presided. Mr. LINDSAY, Curator of the Royal Botanic Gardens, Edinburgh, read a paper written by Mr. F. W. BURBIDGE, F.L.S., of the Trinity College Botanic Gardens, Dublin, on "Orchids, abroad and at home." The paper stated that the growing conditions abroad were principally intense light and dewy moisture, the latter especially at night. The nearer these conditions could be imitated at home the better would be the results. Orchids had of late years attained to such popularity at home, and the rarest and most beautiful had realised such high prices, that Mr. BURBIDGE was irresistibly reminded of the Tulipomania which raged in Holland a century or two ago. Cattleyas, Dendrobes, and Vandas of the rarest quality realised to-day from £100 to £250 or more each, and our merchant princes paid these prices with the same alacrity and zest which must have possessed the Dutch burghers when they paid 1300 florins for a single bulb of Tulip. In conclusion, Mr. BURBIDGE pointed out that there was no royal road to Orchid culture, but only the long and certain one of observation and practical experience. A sketch map, showing the generic distribution of Orchids throughout the world was exhibited. A discussion followed the reading of the paper. It was also unanimously agreed that Mr. BURBIDGE'S paper be printed in full in the *Transactions* of the Association, to which Mr. BURBIDGE was also elected a Honorary Life Member. Mr. ALEXANDER M'MILLAN, Edgehill, Dean, had on the table a specimen of Chrysanthemum segetum, a British wild plant, brought for the purpose of showing how well it could be flowered in a hothouse in winter. There was also exhibited a collection of Ferns gathered in Ireland by Mr. D. REDMOND, Antrim. Votes of thanks to these gentlemen, as well as to Mr. BURBIDGE and the Chairman, closed the meeting.

—— TREPHO.—A substance said, by the maker, Mr. B. FIELD, Swan Place, Old Kent Road, London, S.E., to form a good material for growing Orchids in baskets and pots, &c., has been sent for our inspection. It is live sphagnum chemically treated, possibly with some substance that will aid in its preservation for a considerable period of time. It is pressed into blocks, when alive, by hydraulic pressure, and is specially prepared for Ochids. Mr. FIELD is the sole purveyor of this article. It has been tested for two years, and in the saturated atmosphere of an Orchid-house absorbs and continuously takes up all the gases and moisture. One dipping last three days.

—— MR. W. SWAN.—Our well-known correspondent and excellent gardener and Orchid cultivator, whose last situation was at Oakfield, Fallowfield, Manchester, and which he left owing to the sale of the place, has, we are glad to inform our readers, obtained another appointment at Preston. In consequence of this change of residence he has resigned the office of Secretary to the Manchester Horticultural Improvement Society, Mr. UPJOHN, of Worsley, having been appointed in his stead at the meeting of the Society held on December 3.

—— THE INTRODUCTION OF THE POTATO INTO GERMANY.—A correspondent in an American paper writes:—"While travelling in the upper Rhine countries, we found ourselves obliged to pass the night and part of the day in the little village of Offenburg, on the borders of the Black Forest. While looking about in search for the marvellous that is always to be found in some form in these border villages, we came upon a huge monument, upon the pedestal of which was the figure of a man in the dress of the Elizabethan courtiers. Our wonder increased as we saw loosely piled upon the broad, projecting base, quantities of Potatos carved in stone. It was a monument to Sir FRANCIS DRAKE and the esculent tuber! The cavalier and discoverer holds extended in one hand a Potato plant, and upon the four sides of the pedestal are inscriptions expressing the gratitude of a great people for the blessing that the Creator had been pleased to bestow upon them in time of famine."

—— PEAT.—In some parts of England good peat, suitable for successful Orchid growing, is not easily obtained, and gardeners are compelled to send long distances for it. We have had sent us recently an excellent fibrous sample, sweet smelling, and fit for immediate use, from Messrs. GATERELL & SON, Ringwood. In the New Forest and neighbourhood there is much peaty soil, but except on the estates of the large landowners, who are naturally unwilling to sell their soil, there are not any great facilities for digging good peat in quantity.

—— LINNEAN SOCIETY OF LONDON.—A meeting will be held on December 17, at 8 P.M., when the following papers will be read:—1. "Ceylon Entomostraca;" Dr. G. S. BRADY. 2. "Madagascar Orchids;" H. N. RIDLEY. 3. "Recent Ephemeridæ," part 4; Rev. A. EATON. 4. "Colombian species of Diabrotica;" J. BALY.

—— FORESTS AND MOISTURE.—At the Boston (U.S.A.) Society of Natural History meeting recently, the subject of "The Influence of Forests upon the Atmosphere" was presented by Dr. G. L. GOODALE. His conclusion, in brief, was that their influence is very slight. In regard to moisture their direct action in throwing off moisture is, he said, insignificant; but their indirect action in holding back the water which has saturated the soil in rainfall is very great. Droughts and excessively dry atmosphere are consequent upon an extensive cutting away of forest growths. In the debate which followed it was stated, without question or contradiction, that two broad conclusions have been drawn heretofore concerning the desert coasts of the south side of the Mediterranean Sea, and that other causes besides the cutting off of forests must be recognised as having effected, in part or wholly, the result now seen. One speaker thought it to be a matter of conjecture whether there ever were any forests there.

—— THE STUDY OF BOTANY.—The *Pharmaceutical Journal* says that there is much that tends to reconcile students to the study of botany. It is the study of some of the most beautiful objects of Nature, which although in the ordinary sense mute, possess an eloquence of their own, and never fail to appeal to the hearts of those who are willing to hold converse with them. They are organised beings like ourselves, and of all created beings they are perhaps those which offer the greatest facilities for deep searching investigation into the mysterious development of special organisms springing either from an ingrafted type or from a minute spark of vitality which may have lain dormant for years in an apparently inactive seed. There are some hundreds of thousands of forms of vegetation proceeding from such obscure sources, each having distinct and definite characters of its own, which it is capable of further propagating, and thus maintaining a life everlasting. The root, the stem, the branches, the leaves, the flowers, the fruit, the seed! Consider the arrangements of all these parts; how extremely elaborate, and sometimes fantastic, they are. Such arrangements are apparently infinite, but they are all subject to a law of Nature, namely, that of symmetry, which is one of the elements of beauty. Among the inducements to pursue the examination and study of the elementary structure and arrangement of parts in the vegetable kingdom is this, that we have tangible objects to deal with here, which can be brought within the cognizance of our senses. We can dissect, divide and subdivide them, and when we have thus passed to the limit of observation by the unaided organs of vision, we can resort to the powers of the microscope, and thus open out extended fields for further investigation. The knowledge we thus acquire is of a definite and definable nature. There is nothing speculative about it. It partakes not of the abstract, but of the concrete character.

—— GARDENING APPOINTMENT. — FREDERIC W. SEERS, late Gardener to J. O. COOPER, Esq., of Calcot Gardens, Reading, Berks, has been engaged as Gardener to FRED. J. MYERS, Esq., of Charlton Lodge, Banbury.—Mr. J. LEESE, late Foreman at Burwarton Hall Gardens, Bridgenorth, has been appointed Gardener to Col. H. BAGOT LANE, King's Bromley Manor, Lichfield.

## NEW PLANTS CERTIFICATED

BY THE ROYAL HORTICULTURAL SOCIETY,
JULY–DECEMBER, 1885.

*,* *B.C., Botanical Certificate; F.C., First-class Certificate.*

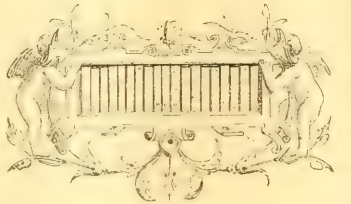
| | |
|---|---|
| Agapanthus cœrulea .. .. | H. J. Buchan, Aug. 25—B.C. |
| Alocasia Henderson .. .. | Henderson, July 14—F.C. |
| ,, Sanderiana .. .. | W. Bull, Aug. 11—F.C. |
| Amaryllis Autumn Charm .. | Veitch & Sons, Nov. 10—F.C. |
| Androsace longiflora var. .. | Max Leichtlin, Aug. 25—F.C. |
| Angræcum Leonis .. .. | W. Bull, Aug. 25—F.C.<br>C. Dorman, Aug. 25—F.C.<br>Sir T. Lawrence, Aug. 25—F.C.<br>R. H. Measures, Aug. 26—F.C.<br>W. Vanner, Aug. 25—F.C. |
| Aristolochia elegans .. .. | W. Bull, Aug. 11—F.C. |
| Begonia Blanche Duval .. | Cannell & Sons, Aug. 11—F.C. |
| ,, Earl of Beaconsfield .. | Cannell & Sons, Oct. 13—F.C. |
| ,, Gabrielle Lucros .. .. | Cannell & Sons, Aug. 11—F.C. |
| ,, General Gordon .. .. | R. Owen, July 14—F.C. |
| ,, John Heal .. .. | Veitch & Sons, Oct. 13—F.C. |
| ,, King of Crimsons .. .. | Cannell & Sons, Aug. 11—F.C. |
| ,, Marchioness of Lothian .. | Cannell & Sons, July 28—F.C. |
| ,, Marquis of Stafford .. .. | Laing & Co., July 28—F.C. |
| ,, Picotee .. .. .. | Cannell & Sons, July 28—F.C. |
| ,, Prince Henry .. .. | Sutton & Sons, July 28—F.C. |
| ,, Thwaitsii .. .. .. | Veitch & Sons, July 28—F.C. |
| Blandfordia flammea .. .. | Sir T. Lawrence, Aug. 25—F.C. |
| Caladium Comtesse de Maillé .. | W. Bull, Aug. 25—F.C. |
| Calanthe Alexandri .. .. | Cookson, Oct. 27—F.C. |
| ,, Cookson .. .. | Cookson, Oct. 27—F.C. |
| ,, porphyrea .. .. .. | Sir Trevor Lawrence, December 8—F.C. |
| Campanula Hendersoni .. .. | T. Ware, July 28—F.C. |
| ,, pyramidalis var. bicolor | T. S. Ware, Aug. 11—F.C. |
| Carnation The Governor .. | Cannell & Sons, July 28—F.C. |
| Cattleya autumnalis .. .. | Veitch & Sons, Oct. 27—F.C. |
| ,, Hardyana .. .. .. | G. Hardy, Aug. 11—F.C. |
| Chrysanthemum Boule de Neige .. .. .. | — Owen, Dec. 8—F.C. |
| ,, Ilale des Plaisirs .. .. | J. Forbes, Oct. 13—F.C. |
| ,, Maiden's Blush .. .. | Stevens, Nov. 10—F.C. |
| ,, Mons. A. Vilmorin .. .. | Veitch & Sons, Nov. 10—F.C. |
| ,, Queen of the Yellows .. | H. Cannell & Sons, December 8—F.C. |
| ,, Val d'Andorre .. .. | Wright, Oct. 27—F.C. |
| Chysis lævis superba .. .. | B. S. Williams, Aug. 11—F.C. |
| Cyathea divergens .. .. | Veitch & Sons, Aug. 11—F.C. |
| Cymbidium elegans .. .. | B. S. Williams, Oct. 27—F.C. |
| Cypripedium insigne Wallacei | New Plant and Bulb Co., Nov. 4—F.C. |
| Dahlia Bird of Passage .. | Rawlings Bros., Sept. 8—F.C. |
| ,, Eclipse .. .. .. | Cannell & Sons, Sept. 8—F.C. |
| ,, Faust .. .. .. | Cannell & Sons, Sept. 8—F.C. |
| ,, George Paul .. .. | Rawlings Bros., Sept. 8—F.C. |
| ,, Germania nova .. .. | Cannell & Sons, Aug. 25—F.C. |
| ,, Mrs. John Walker .. | Rawlings Bros., Aug. 25—F.C. |
| ,, Mrs. G. Rawlings .. .. | Rawlings Bros., Sept. 8—F.C. |
| ,, Mrs. Hawkins .. .. | T. S. Ware, Sept. 8—F.C. |
| Dracæna Newmanensis .. .. | Veitch & Sons, Sept. 8—F.C. |
| Dracocephalum virginicum alliaceum .. .. | T. S. Ware, July 28—F.C. |
| Eucharis Mastersii .. .. | W. Bull, Oct. 13 |
| Euterpe phœnicophœnix .. | W. Bull, Aug. 11—F.C. |
| Gaillardia St. Blaise .. .. | Kelway & Son, Aug. 11—F.C. |
| Gastronema hybrida .. .. | Sir T. Lawrence, Aug. 25—F.C. |
| Gladiolus Abas .. .. .. | Kelway & Son, Aug. 11—F.C. |
| ,, André Chenin .. .. | Veitch & Sons, Aug. 11—F.C. |
| ,, Enfant de Nancy .. .. | Veitch & Sons, Aug. 11—F.C. |
| ,, Galatea .. .. .. | Kelway & Son, Aug. 11—F.C. |
| ,, J. L. Toole .. .. | Kelway & Son, Sept. 8—F.C. |
| ,, Henri Conscience .. .. | Veitch & Sons, Aug. 11—F.C. |
| ,, La France .. .. .. | Veitch & Sons, Aug. 11—F.C. |
| ,, Lord Carnarvon .. .. | Kelway & Son, Sept. 8—F.C. |
| ,, Lorna .. .. .. | Kelway & Son, Aug. 11—F.C. |
| ,, Masque de Fer .. .. | Veitch & Sons, Aug. 25—F.C. |
| ,, Milton .. .. .. | Kelway & Sons, Aug. 11—F.C. |
| ,, Prince Albert Victor .. | Kelway & Sons, Aug. 25—F.C. |
| ,, Prince Henry .. .. | Kelway & Sons, Aug. 25—F.C. |
| ,, Prince Waldemar .. .. | Kelway & Sons, Aug. 25—F.C. |
| ,, Princess Irene .. .. | Kelway & Sons, Aug. 25—F.C. |
| ,, Princess Olga .. .. | Kelway & Sons, Aug. 25—F.C. |
| ,, Sir H. D. Wolff .. .. | Kelway & Sons, Aug. 25—F.C. |
| ,, Viscount Cranbrook .. | Kelway & Sons, Sept. 8—F.C. |
| Helenium pumilum .. .. | T. S. Ware, July 28—F.C. |
| Laha elegans Littleana .. | Little, Aug. 25—F.C. |
| ,, Sedeni .. .. .. | Baron Schroder, Aug. 25—F.C. |
| Lilium auratum var. rubro-vittata .. .. .. | Carter & Co., Sept. 8—F.C. |
| ,, Parryi .. .. .. | New Plant & Bulb Co., July 14—F.C. |
| Lomariopsis buxifolia .. .. | Veitch & Sons, Sept. 8—F.C. |
| Ligustrum sinense ibotium .. | Paul & Son, July 14—F.C. |
| Marigold, African Orange .. | Carter & Co., July 28—F.C. |
| Nepenthes excelsior .. .. | B. S. Williams, Oct. 27—F.C. |
| Odontoglossum Insleayi splendens .. .. | W. Bull, Aug. 25—F.C. |
| ,, vexillarium Measuresi .. | R. H. Measures, July 14—F.C. |
| Pelargonium Blanc Parfait .. | W. Bealby, July 14—F.C. |
| ,, Ivy-leaf, Alice Crousse .. | W. Bealby, Oct. 13—F.C. |
| ,, ,, Souvenir de Charles Turner .. .. | Owen, Aug. 11—F.C. |
| ,, Josephine von Hohenzollern .. .. .. | W. Bealby, July 28—F.C. |
| ,, zonal, Paul Charbonnier | W. Bealby, July 28—F.C. |
| Renanthera coccinea .. .. | E. Hill, July 14—F.C. |
| Rhododendron Apollo .. .. | Veitch & Sons, Oct. 13—F.C. |
| ,, nobleanum Ilbanianum | Veitch & Sons, July 28—F.C. |
| ,, Indian Yellow .. .. | Veitch & Sons, Aug. 11—F.C. |
| ,, Minerva .. .. .. | Veitch & Sons, Oct. 13—F.C. |
| ,, Pearl .. .. .. | Veitch & Sons, Aug. 25—F.C. |
| Rose Madame Norman Neruda | Paul & Son, July 14—F.C. |
| ,, Pride of Reigate .. .. | Paul & Son, July 14—F.C. |
| ,, Waltham Climber No. 1 | W. Paul & Son, Sept. 8—F.C. |
| Sarracenia Buchanani .. .. | B. S. Williams, Oct. 27—F.C. |
| ,, Patersoni .. .. .. | Dr. Paterson, Aug. 11—F.C. |

### FRUIT.

| | |
|---|---|
| Apple, September Beauty .. | Laxton, Oct. 1—F.C. |
| Nectarine Goldoni .. .. | Rivers & Son, July 14—F.C. |
| Pear, The Conference .. .. | Rivers & Son, Nov. 4—F.C. |
| Strawberry, A. F. Barron .. | Laxton, July 2—F.C. |
| ,, Waterloo .. .. .. | Bone, July 1—F.C. |

### VEGETABLES.

| | |
|---|---|
| Chou de Gilbert .. .. .. | Gilbert, Oct. 13—F.C. |
| Pea, Autocrat .. .. .. | Veitch & Sons, July 10—F.C. |
| ,, Prodigy .. .. .. | Veitch & Sons, July 25—F.C. |
| ,, Quality .. .. .. | Eckford, July 10—F.C. |
| ,, Sensation .. .. .. | Laxton, July 10—F.C. |
| Pea, Shropshire Hero .. .. | Eckford, July 10—F.C. |
| ,, The Ameer .. .. | Laxton, July 25—F.C. |
| Potato, Chancellor .. .. | Dean, Aug. 25—F.C. |
| ,, Cole's Favourite .. .. | Perry, Aug. 25—F.C. |
| ,, Suffolk Favourite .. .. | Ellington, Aug. 25—F.C. |



# Notices of Books.

**Bible Flowers and Flower Lore.** Anonymous. Hodder & Stoughton.

**The Plants of the Bible.** By [the late] John Hutton Balfour. New edition. T. Nelson & Sons.

One object of the first-named of these books is stated to be to remedy some of the inaccuracies which "mar the beauty and significance of most of the floral allusions of the Hebrew poets and prophets." "Want of knowledge" of the plants mentioned in the Scriptures has, says Dr. Balfour, in his turn, "hid much of the beauty and force of many a parable." Recognising the truth of both these statements we must welcome any well devised method of improving our acquaintance with the plants mentioned in Holy Writ. This knowledge may be attained, in a measure, by the careful study of the flora of Palestine, and by comparative philological enquiries. The latter points form the business of scholars and linguists. As to the botany of Palestine and Syria it is now fairly well known, infinitely better known, in our sense of the expression, than it was by the old Hebrews, their neighbours, and their descendants. But, while this is so, it must be borne in mind, first, that the face of the country and its vegetation have much changed, since even the latest biblical days, and, next, that it is useless and unwise to seek for a specific meaning where the writers used a particular word only in a general sense. There is no reason to believe that the inspired writers had any aversion from the popular names which are in our days so misleading and obstructive to research. They had no commission to teach botany. For their purpose the simple vernacular names, in spite of all their vagueness and laxity of application, were amply sufficient; and, indeed, there were none other at that time. Our sense of the beauty and fitness of the imagery on the one hand is not shocked because we cannot identify a particular plant, nor, on the other hand, is it materially enhanced when we are in a position to feel some degree of certainty about the matter, as, for instance, that the goodly Cedars were what we now call Cedrus Libani.

The Scriptural teachings are obviously not intended to convey botanical instruction, and the writers were not compiling a Flora. It is necessary to remember this, for, truism though it be, writers—popular writers especially—still think it necessary to perplex themselves and their readers, by the endeavour to render definite what was never intended to be otherwise than suggestive. It is no matter for surprise, under such circumstances, that there should be a frequent want of agreement among the commentators, and that the synonyms should be very numerous. Still, there are points of agreement evolved from the study of many minds, thus both the books before us identify the Saffron of the Song of Solomon with Crocus sativus, an instance this of the value of philological research—the Hebrew word *karkom* having its equivalent in most Eastern languages. Both agree about the Myrtle, the Olive, the Vine, the Cedar, the Palm, the Camphire (Lawsonia inermis), the Pomegranate, the Mandrake, the Bulrush (Papyrus), the Storax, the Caper.

This agreement, however, does not extend very far. The Aloe, by one writer, is referred to Aloe perfoliata, while Dr. Balfour, with less cogency as it seems to us, argues for Aquilaria agallochum. The Juniper of *Bible Flowers* is the common Juniper (which the writer confounds with the Savin); the Juniper of *The Plants of the Bible* is a kind of Broom, Genista monosperma. The doves' dung of the Book of Kings is, according to the Edinburgh Professor, Ornithogalum umbellatum; while the anonymous author gives good reason for supposing it to be the Chick Pea—a considerable range of variation, surely! The anonymous author cites Canon Tristam as coming to the conclusion that the Rose of Sharon is Narcissus Tazetta. Dr. Balfour quotes the same authority in support of the notion that Anemone coronaria was the plant intended. The Anemone, however, is given, again on the suggestion of Canon Tristam, as the equivalent of the "Lily," and the anonymous author of *Bible Flowers* admits that it may be the "Lily of the field." Now Dr. Balfour gives the Egyptian Water Lily, Nymphæa Lotus, as the representative of the Lily of the *Old* Testament, and cites various reasons in support of his view; while the anonymous author of *Bible Flowers* votes for the "Chalcedonium or Martagon Lily, Lilium Chalcedonium [*sic*], known also as the Chalcedonian Iris, and sometimes called the Sword Lily." Now Lilium Chalcedonicum, the scarlet Martagon, was considered by Royle to be the Lily of the *New* Testament! With such confusions and discrepancies (and we might cite many more) we reluctantly come to the conclusion, that neither of the works before us adds much to our definite knowledge of the subject, and from what we have said we do not think it likely any book on such lines as those on which both of these are constructed would do so. The *Bible Flowers* is much the more scholarly and original of the two books, though it is unpretending. Dr. Balfour's work is well got up and illustrated with numerous woodcuts. Neither volume has an index—a great defect even in such popular books as these.

**Flowering Plants and Ferns of the Riviera and Neighbouring Mountains.** Drawn and described by C. Bicknell. Trübner & Co.

This is a series of eighty-two coloured plates with descriptive text. The figures are accurate as far as they go, but they are rather the rough memoranda which the collector makes for his own use, than the detailed drawings required by the botanist, or the more finished and pictorially grouped illustrations which are demanded by the artist. The botanical details are not drawn to scale, and they are mostly not sufficiently numerous or explicit for botanical purposes. In most cases only detached sprays, and what the old herbalists used to call "summitates," are shown. Rarely is an attempt made to show the habit of the plant, so that the illustrations seem to have been taken from specimens collected for a nosegay by some friend not cognisant of the requirements of the botanist. The consequence is unfortunate, for the illustrations have a stiff "weedy" look, which by no means does justice to the originals, and which does not add to the attractiveness of the volume.

Nevertheless, from the point of view of the botanist and gardener Mr. Bicknell is a benefactor of his kind, for a series of generally faithful drawings, whatever their technical defects in points of detail, cannot fail to be of great service. Mr. Bicknell's work is complementary in some measure to the contributions to the *Flora of Mentone*, by our lamented friend, J. Traherne Moggridge, which, we are surprised to see, bears the date of 1871, and which has become scarce.

There is, then, ample room for Mr. Bicknell's work, and we trust we may speedily have to welcome a second series. He cannot have a better model to follow than Mr. Moggridge's Contributions, in which the "dry stickery" of botany is lightened by so many details relating to distribution, and the adaptation of the floral machinery to the circumstances and conditions under which it has to work.

**Studies of Plant Life in Canada, &c.** By Mrs. C. P. Traill. Ottawa: Woodburn.

This is a popular account of the flowers, Ferns, trees, and shrubs of Canada, by a lady who has passed the greater part of a long life among them, who remembers when forest or prairie occupied the site of noble cities replete with all the resources of civilisation.

The venerable author has acquired a knowledge

which cannot be obtained from books alone. She has done well to introduce the word "life" into her title, for her observation has evidently been most exercised among living plants. Generally speaking it is hard to get up any sympathy for "popular" books. Their diffuse meanderings, their want of accuracy, their utter failure to secure their professed object, all make one look askance on popular books of the ordinary type. But the one before us is not of this character. It is popular in its arrangement of matter, it is popular in the pleasant style in which it is written, but it is something far better than popular in the fidelity and accuracy of the word portraits of Canadian flowers and the interesting details of their history.

The book is illustrated with several chromolithographs, in which the mechanist seems to have done his best to dim the image drawn by the artist and destroy her outlines. The tone and spirit in which the book is written are so healthy and cheery as to excite the sympathies of the reader with the octogenarian authoress. Her life has been in part one of toil, hardship, and isolation, but she has evidently met and mastered her trials and difficulties by the aid of that spirit of trust and hopefulness which the study of God's creation is so well calculated to engender.

The following extract serves to give a good idea of the author's style :—

"One of the loveliest and most graceful of our forest trees is a young Hemlock. As great a contrast does that elegant sapling, with its gay, tender green feathery sprays, bear in its beauty of form and colour to the parent tree, with its rugged, stiff, and unsightly trunk and ragged top, as the young child in its youthful grace and vigour bears to the old and wrinkled grandsire. The foliage of the young Hemlock in the months of June and July, when the spring shoots have been perfected, is especially beautiful; the tender vivid green of the young shoots, at the end of the flat, bending branches of the previous year, appears more lively and refreshing to the eye in contrast to the older, dark, glossy, more sombre foliage, which they serve to brighten and adorn.

"The Hemlock does not reach the lofty height of the White Pine, though in some situations it becomes a giant in size, with massive trunk, and thick bushy head; the bark is deeply rifted, dark on the outside, but of a deep brick-red within; the branches are flat, the small, oval, soft cones appear later in the summer on the ends of the shoots of the previous season. The timber of the Hemlock is very durable, tough, and somewhat stringy, loose-grained, but is said to resist wet; it is used for granary flooring, rail-ties, and some other purposes in outdoor work. The bark is used largely in tanning. The backwoods settlers stack the Hemlock bark while clearing the forest land and carry it in during the sleighing season to the tanneries, receiving a certain value per cord, in money or store goods. Formerly the payment was chiefly made in leather, when every man was his own shoemaker; but times have changed since those early, more primitive days, and the wives and children would now disdain to wear the home-made boots and shoes that were manufactured out of coarsely-dressed leather by the industrious father of the family, in the long winter evenings, as he worked by the light of the blazing log fire with his rude tools and wooden pegs.

"The old shanty life is a thing of the past; the carding and spinning, the rattle of the looms, even the knitting needles are not now so constantly seen in the hands of the wives and daughters as formerly. Railroads and steamboats, schools, and increase of population, have wrought great changes in the lives and habits of the people. Villages and towns now occupy the spots where only the dark forests of Pine and Hemlock, Maple and Beech once grew. The trees disappear indeed before the axe and fire, from the site where Nature had placed them, but they reappear now as ornaments, planted by the hand of taste in the gardens, and as shade-trees on the streets of the towns and cities; and this is good, it speaks of taste and culture. The Hemlock, however, is less frequently seen about our dwellings, beautiful as it is, for it is tardy in growth, and does not take kindly to cultivation. Its natural soil is dry, rocky or gravelly land.

"A remarkable hoof-like fungus, of a deep red colour, semicircular in outline, and elegantly scalloped at the edges with curved lines like some large sea shell, hard, dry, and varnished on the surface, is found occasionally growing on the rough bark, or big, scaly roots of decaying Hemlocks. These fungi (Polyporus pinicola) are found in clusters of larger and smaller growth on thick stems united at the base. I have seen a group of this singular parasite, the largest measuring more than a foot in diameter; it was greatly prized for its elegant form and rich colour. The under-side of the fungus is of a fine warm buff tint."

# The Orchid House.

## HOTHOUSE ORCHIDS IN WINTER.

Writing last week on the treatment the Mexican Orchids ought to receive, we had to deal with a continuous period of dull, depressing weather, with frequent fogs more or less dense. Now they have cleared off, and been succeeded by bright sunshine by day, with sharp frosts at night. A sooty deposit has been left on the glass by the fogs, but this has been washed off, as every ray of light we can obtain is valuable. We get the temperature in this house up to 75° by day, and by closing the house early the sun-heat is retained well into the night, but it falls towards morning to 65° or 58°—a temperature sufficiently high for most Orchids requiring an East India temperature. Most of them should be kept in a state of rest, even although they may be making their growth. The Orchids we value most in this house are some handsome specimens of Odontoglossum Roezlii; this species succeeds remarkably well with us, and from about eighteen plants we have never been without flowers for a period of twelve months. The main period for bloom on this species is during the months of April, May, and early in June, although the best of them are over before the last-named month comes in. They require a fair supply of water at the roots during winter, but ought not to be kept what one would term wet; on the other hand, if they are kept so dry that the sphagnum moss on the surface quite loses its green colour, that would be an error in culture, and which would tell upon the future well-being of the plants. We do not grow any other Odontoglossums in this house.

During the last few years the genus Angræcum has been greatly improved by additions. There has been no species introduced to approach in stately appearance the wonderful A. sesquipedale; but A. Ellisii and an allied species, A. articulatum, have been introduced freely of late years, while A. Scottianum, from the Comoro Islands, is interesting and very pretty. The most recent introduction, A. Leonis, seems to be the easiest to introduce and establish of the whole family; and when it has been well established in our hothouses it will, I doubt not, be next in importance to A. sesquipedale. A. citratum is very charming, and flowering as it does at the dullest period of the year with great freedom, and without in the least injuring the plants, is a great point in its favour. They do not really need such a high night temperature as some cultivators are disposed to provide for them.

Amongst hothouse Orchids that require a high night temperature are the two or three species of Cypripedium, viz., C. Lowii, C. Stonei, and C. niveum. The first-named species has an unfortunate tendency to rot or damp off in a temperature which suits the Angræcum admirably.

Oncidium ampliatum majus, which has been introduced rather plentifully lately also requires the very warmest night temperature, 65°, falling on cold nights to 60°; anything lower than this minimum should be very exceptional indeed. To keep up the necessary temperature the pipes require to be heated very considerably on cold nights; this may have the effect of causing an over-dry atmosphere, which must be counteracted by judicious evaporation. We do not fill the evaporating troughs with water in winter, but rather by the slower process of sprinkling the paths and stages.

We have not alluded to the Phalænopsids, which are doubtless the most highly esteemed of all the occupants of the East Indian-house. The treatment of these beautiful Orchids is now well known. During the winter months an excess of heat and moisture is likely to produce spot, but it must not be forgotten that these Orchids have not any pseudobulbs in which moisture may be stored, consequently it would not answer to allow them at any time to become quite dry at the roots. The atmosphere must also be moderately moist. Excessive moisture either at the roots or in the atmosphere might cause "spot," which was prevalent a quarter of a century ago, but which has been banished from all good collections, since Orchid culture has been more generally understood. I am free to say that during the twenty years I have grown Orchids I cannot recollect one single plant being affected by spot. It is a disease doubtless, but it is no doubt preventable by good management, and may be induced by damp at the roots or in the atmosphere, or by a combination of both during the winter months.

## COOL HOUSE.

It is a question frequently asked, How low can the winter temperature of the cool house be maintained, and yet the plants continue in vigorous health? My impression is that a continuous low night temperature during winter is not the best for the plants, and if persisted in during the whole of the winter months may be disastrous to some of them. So far the varieties of Odontoglossum crispum seem to be best adapted for a low temperature. Oncidium macranthum and the new distinct species, O. Edwardii, is also one of the coolest species; but many of the most important subjects, including Odontoglossum Pescatorei and nearly all the Masdevallias, succeed best with a night temperature ranging from 45° to 50°; the highest of the two figures ought to be the most frequent minimum. Not a few people have an idea that cool Orchids may be grown in an ordinary greenhouse: that they may live, and perhaps thrive in such a position during the summer months is possible, but during winter they will not do well, unless the treatment be such as would not be suitable for the run of greenhouse plants. The pretty delicate white Masdevallia tovarensis is now crowded with its pure blossoms. The flowers are much used for decorative purposes, and it is pretty well known that the old stems remain green from year to year, so that they produce from the top of the stems an annual crop of flowers. If the old stems are removed, a thicket of new ones will be produced, but if the old ones are not removed very few new ones will be produced. The knowledge of this may be useful, as the flowers cut with the stems are more valuable than the single blooms cut with scarcely any stem attached. *J. Douglas.*

# DISEASES OF FRUIT, PROVISIONS, ETC.—IV.*

## MUCOR STOLONIFER, AND MUCOR MUCEDO.

The Mucors are amongst the commonest moulds or mildews of fruits and provisions. They cause flour, bread, and other substances to become musty. The spores of these fungi, together with the spores of Penicillium and Aspergillus, already described, are always in the air; they especially abound in warm damp cellars and store-rooms where provisions and fruits are kept. When the spores light on any suitable substance, as damp flour, bread, preserves, bruised or sweating fruit, stale Mushrooms, &c., they germinate, produce spawn or mycelium and fruiting threads. The growth of these fungi hastens putrefactive decomposition.

There are various species of Mucor, as there are of Penicillium and Aspergillus. I here describe two species only as types—Mucor stolonifer, Ehrb., and M. Mucedo, L. The simpler of the two, sometimes very common on bruised or sweating Melons, I will take first. On fruits, these fungi subsist on the cell sap which has escaped from the cells to the surface or to the intercellular spaces.

The generic name is derived from the Greek Mukēs—a mould; whilst the specific name, stolonifer, refers to the stolon-like, or long trailing branch-like growth of the spawn or mycelium, in the style of a Strawberry runner, as shown between A and B (fig. 170), where a small patch of the fungus is shown enlarged 20 diameters.

The Mucor covers decaying fruits and other substances with a fine white, woolly, non-septate or very sparingly septate mycelium; the mycelium also grows in the substance of ripe and juicy fruits, and hastens decomposition. Rising from the fleecy surface of the mycelium numerous extremely short and slender threads arise, each thread being capped with a minute head, at first pallid, then black. The fruiting threads, which resemble, when magnified, pins, nails, or drumsticks (see fig. 170), may be seen with the unaided eye or with a common lens. The fruiting threads or filaments grow out at certain privileged points on the stolons, as at A and B, the shafts are shown at C, C, C, and the heads at D, D, D. The heads are really spore-cases, or sporangia, spherical growths enclosing spores or seeds. Each glassy-looking sporangium is at first filled with translucent protoplasm, and cut off from the supporting thread

* See pp. 51, 286, and 364.

or shaft by a septum or joint at the base; this basal septum, *at first* near the point F, ultimately grows up into the sporangium so as to form a kind of core within, as shown in the section at G, enlarged 100 diameters. At length the contained material of the sporangium becomes differentiated or arranged into a vast number of polyhedral black spores, as shown inside the sporangium near E. When the spores are quite ripe the extremely thin membrane of the sporangium bursts, doubtlessly aided by the growth of the inner core, and the minute spores are expelled into the air. The bursting of the sporangium generally takes place just above the base of the core (columella—little column), leaving the remains of the membrane as a ragged collar surmounted by the core and dusted with spores. The membrane of the sporangium breaks up or dissolves, and the inflated columella collapses over the top of the supporting thread, like a minute cap of Liberty on a pole.

Four spores, or sporidia, one germinating, are shown at H, enlarged 400 diameters. These spores germinate very quickly on decaying fruit or its juices, but not readily in water; if kept dry they will retain their vitality for several months. In the hot weather of the summer, from May to July, the stolons beneath the white felt form vesicular expansions, which come in contact as shown at J. When the expansions thus join a septum set free an enormous number of the little black simple spores, and these are carried away by the wind. Such as fall on juicy fruits, decaying vegetables, preserves, &c., hasten putrefaction; any others that fall upon unsuitable substances perish.

Under favourable conditions a Mucor can, of course, propagate itself by the simple spores for an unlimited number of generations. Zygospores are indeed not very frequently formed on the mycelium. They are generally unnecessary within-doors where Mucors commonly grow. The Mucors are obviously protected from destruction by the zygospore, as this body is capable of living in a hybernating state on the ground in the winter for several months, when no fleshy fruits, household provisions, or other suitable substances are near. The infection to out-of-door fruits may come from the zygospores germinating on the surface of the ground.

Mucor stolonifer, Ehrb., is sometimes described as Rhizopus nigricans, Ehr.; or Ascophora Mucedo, Tode.

### MUCOR MUCEDO, L.

This is one of the most abundant of all the mildews; it is not only frequent upon juicy fruits, but it is common on paste, preserves, provisions, horse dung, &c. Its life history is more complex than the last. The mycelial filaments are without, or have very few, especially on old mycelium, and these at length break up into a number of small globular cells, gemmules, buds, or "chlamydospores." Chlamydospores have been so called, I suppose, because they seem to be produced, as spores, in the interior of the spore-bearing shaft; the word is derived from *chlamys*, a coat. These latter bodies (filled with condensed protoplasm), not unlike extremely minute Sclerotia, are illustrated at D; each of the minute spherical cells there shown is capable of reproducing the Mucor. Under favourable conditions of growth the mycelium throws out minute vesicular expansions as illustrated at E, exactly in the style of M. stolonifer, Ehrb. These little swollen vesicles, especially when the fungus is excluded from free air, conjoin, a septum is soon formed at the base of each, and the two swollen ends or conjugating cells coalesce and form a zygospore. We therefore see that Mucor Mucedo, has five methods of reproduction:—1st, by the sporidia in the larger sporangia, B; 2d, by the sporidia in the sporangioles, A; 3d, by the conidia, C; 4th, by the small globular sclerotium-like cells, D; 5th, by the zygospores arising from the conjugating cells at E.

At A, fig. 172, I have engraved a section through a sporangium enlarged 100 diameters; the columella, or core continuous with the stem, is shown at B. At C, D, the remains of a sporangium are seen after the

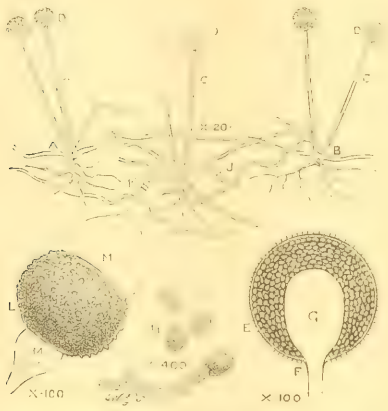



FIG. 170.—MUCOR STOLONIFER, EHRB., ENLARGED 20, 100, AND 400 DIAM.

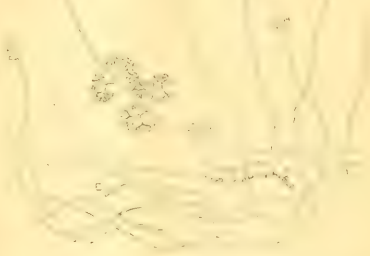


FIG. 171.—MUCOR MUCEDO, L., ENLARGED 20 DIAM.

cuts off the more swollen end of each expansion from its supporting mycelium, as shown at K, where three septa instead of one are now seen. The two innermost cells at K are termed conjugating cells, and one is generally somewhat larger in size than the other, as shown; at length the central septum is absorbed, the protoplasm unites, and the two inner cells become fused into one body, termed a zygospore, yoke-spore, or resting-spore. The formation of the zygospore occupies about twenty-four hours, it then increases in size and becomes coated with a comparatively thick and warted membrane or skin. The interior is full of granular protoplasm and an oily fluid. A ripe zygospore is shown at L, enlarged 100 diameters. Its shape is spherical, with flattened places formed, as shown at M, M, by the two supporting cells or suspensors, which soon perish. Unlike the simple spores the zygospores do not germinate at once, but require a period of rest. They do not produce mycelium like the simple spores, but give rise at once to one or two filaments which bear little black sporangia similar to the ones at D, D, D, first described. These first sporangia are produced directly from the substance of the zygospore, and do not require the support of juicy fruits or any other external nourishment for their growth; their vital material has been stored up for them within the zygospore, in the same way as the first food of infant plants is stored in seeds. The first formed sporangia from the zygospores quickly burst and septa; but the runner-like stolons of M. stolonifer, Ehrb., are absent. Instead of the sporangium-bearer carrying one head only, as in the last, M. Mucedo, L., produces several shafts which arise by constant branching to right and left from a main generally horizontal filament, as shown in fig. 171 B, enlarged 20 diameters. The branches in turn are often themselves furcate, as shown in the top middle of illustration. Under favourable conditions the supporting stem of the sporangium exhibits finely branched white tufts or frills, as figured at fig. 171 A, each ultimate branchlet of which ends in an extremely minute head, or little sporangium, termed for the sake of distinction a sporangiolum. At one time this twiggy growth was considered a distinct fungus, but more exact investigation shows that the apex of each filament is often crowned with a perfectly normal sporangium of Mucor Mucedo, L., as shown at B, where the frills are seen arising from a typical shaft of the Mucor before us. At certain times filaments arise from the main stem, and bear conidia, as at fig. 171 C. These conidia differ from the spores borne in the sporangia and sporangioles, in being apparently external or free, instead of being contained in a sporangium. This conidium-bearing condition has been erroneously described by De Bary and Woronin, as the same with a fungus named Botrytis (or Chætocladium) Jonesii, B. & Br.

When Mucor Mucedo grows with an insufficient supply of oxygen, long filaments are produced, glassy-looking investing membrane has collapsed, the remains of this membrane are seen as a ragged collar at D, the dotted line shows its former position, and a few sporidia are seen near the base of the columella. Sporidia enlarged 400 diameters are shown at E. The sporangia and sporidia, especially the former, are variable in size; the latter, when they fall upon a suitable matrix, as on sweating fruit, reproduce Mucor Mucedo, L. One of the tufts or frills from a conidium-bearer is shown at F, enlarged 100 diameters; each of the ultimate branchlets carries a very small sporangiole, containing each about four sporidia. A single sporangiole, containing four sporidia, is shown, enlarged 400 diameters, at G. Sporangia of every intermediate size, from the largest normal sporangium, to one of the smallest sporangiola, may frequently be observed on the same growth. A conidium-bearer, with its branched apex and conidia, is shown enlarged 100 diameters at H; and the analogous long filaments of mycelium, which have broken up into chains of minute globular gemmules, sacs, sclerotia, or chlamydospores, are shown at J. The vesicular expansions from the mycelium, as formed within the substance upon which the Mucor grows, are shown at K, the two bodies at L L being the suspensors, and the two central cells at M are the sexual cells, often of different sizes, which combine to form one body termed the resting spore, or zygospore. After the fusing of the two central cells, and the consequent production of a resting-

spore, the latter body grows to a much larger size; the endospore within is warty, and the black exospore without, which represents the original membrane of the two conjugating cells, adapts itself to all the inequalities of the endospore within, as shown enlarged 100 diameters at N, the suspensors being shown at right and left. After a period of desiccation and rest, the zygospore if placed in moist air germinates as illustrated. The germinal thread always grows at right angles to the line of the suspensors as shown, and the protruded shaft is not a mycelial thread, but a true sporangiophore or sporangium-bearer, which may be either simple, bearing a single normal sporangium of Mucor Mucedo, L., or slightly branched. This sporangiophore is merely the interior utricle of the zygospore elongated into a tubular shaft. The sporangium thus produced is seen in elevation at O, and is in every way identical with the sporangium at A, with which we started, and so the life cycle is completed.

On juicy and decaying fruits it is by no means uncommon to find several Mucors or Mucorine fungi growing in company. One of these is the remarkable




Fig. 172. -Mucor Mucedo, L., enlarged 100 and 400 diam. (see p. 756)

and much discussed fungus named by the Rev. M. J. Berkeley, Botrytis Jonesii, *Ann. Nat. Hist.*, 760, 1854; but now better known as Chætocladium Jonesii. De Bary and Woronin have said that this Botrytis or Chætocladium is a mere conidia or monosporangium-bearing form of Mucor Mucedo, L., but the general belief of botanists now is that Chætocladium Jonesii is, as Mr. Berkeley originally said, decidedly a true species, bearing, not conidia, but sporangia, each sporangium containing a single sporidium. It is remarkable that some species of Chætocladium at times fix themselves on to other Mucorine fungi, and so seem to live as parasites. Under such circumstances they have been observed to grow more vigorously than on the substratum which is supposed to be their normal one. Van Tieghem has termed this occasional ambiguous parasitism "facultative." Like Mucor Chætocladium produces zygospores. Van Tieghem calls the fruit a sporangiospore. Mucors will not grow on dry, sound fruits, as there is, in these intances, no escaped sap or nourishing fluid; when, however, Mucors are artificially grown in fruit pulp and then inserted in, or sometimes on, sound fruit, the fungi will then rapidly penetrate the substance and cause decay.

A few words must be said as to alcoholic fermentation. Oidium fructigenum, Schr., first described, is not one of the fungi of alcoholic ferments. As regards Penicillium crustaceum, Fr., some authors have stated that the latter fungus is one form of the yeast of beer, Saccharomyces cerevisiæ, Meyen, but this statement seems to have been founded on erroneous observations. Hoffman thought he had seen Penicillium arise from an isolated yeast cell, and Berkeley considered Hoffman correct. Pasteur has experimented a great deal with Pencillium, and he says, "If we distil saccharine liquids on the surface or in the body of which we have grown Penicillium, and repeat the distillation in the manner that we have already described for the detection of the minutest quantities of alcohol, we shall readily find that those liquids frequently do contain a little ordinary alcohol." A submerged condition often excites a feeble production of alcohol. According to the observations of Pasteur, the "Vinegar plant" has no relationship with Penicillium His experiments show that the "Vinegar plant" is Mycoderma aceti, the "Mother of Vinegar," and that the crop of Penicillium which so often arises from it is due to infection from the air, where the spores of Penicillium, Aspergillus, Mucor, &c., are almost invariably present. There is no reason, however, why all these fungi should not grow with the Mycoderma in the Vinegar plant, but Pasteur says he has proved the Mycoderma to be the cause of acetic fermentation. In the so-called Ginger-beer plant alcoholic fermentation is simply set up by the yeast fungus, Saccharomyces cerevisiæ, Meyen, but several other fungi can be easily detected in it.

Aspergillus, when submerged, so that the oxygen of the air does not reach it, is a weak alcoholic ferment; it then decomposes sugar, like yeast, and produces alcohol and carbonic acid gas.

Alcoholic fermentation belongs to Mucor; alcohol will arise from M. Mucedo, L., when it grows in saccharine fluids. The species named Mucor racemosus is the Mucor ferment of Pasteur. The latter fungus is almost identical with Mucor Mucedo, L.

In writing these notes on Oidium, Penicillium, Aspergillus, Eurotium, and Mucor, it may be complained that many of the technical terms are uncouth and difficult. These difficult words are none of mine; wherever they are used I have endeavoured to make their meaning clear. The fungi described are important and typical. They are cosmopolitan and of everyday occurrence. They grow in nearly all places. When they occur in ill ventilated storerooms, where fruits are in a bruised or sweating condition, the fungi are highly infectious. All damaged fruit should therefore be carefully removed and destroyed, and perfect ventilation secured. The occasional burning of flowers of sulphur in a dry storeroom will keep most of the mildew fungi in check.

There are many species closely allied to the fung here described, which have been distinguished (as I consider) by characters which are often more or less uncertain. I suspect two-thirds of them to be worthless species. The habitats of some species are sometimes peculiar, and do not lend themselves to immediate acceptance as characteristic; for instance, amongst other habitats we have "on an old chicken coop," "in the human ear," "on Pasteur's solution," &c. There is also great confusion in the names, more than once they occur in duplicate, so that it is often almost or quite impossible to know what species some authors have in view, especially when measurements, authors' names, and scales are not given, as is very often the case. Even Pasteur does not give the names, of the authors of the species he describes. Sometimes, as in the yeast fungus, there are at least six different generic names, and it is common to find a note of interrogation after a synomyn, indicating that it is uncertain whether the two or more plants described, are the same or not. *Worthington G. Smith, Dunstable.*

## Home Correspondence.

**Earthing-up Potatos.**—In the paper on "Earthing-up" at page 715, there is something fallacious in the reference to the usefulness or otherwise of earthing-up Potatos. The writer intimates that deeper planting of the seed tubers produces as good results as those from earthing-up, but it is not simply to protect the tubers that earthing is applied. The Potato stem is of a tender brittle nature, and needs support against rough winds, hence it is found advisable to give it the support and stay found in several inches of soil placed against it. Then a ridge of soil about the plants and over the roots tends to keep the latter fairly dry and protected from heavy rains, which are detrimental to the young tubers. On the other hand, the moisture so cast off from the tubers is thrown more immediately into contact with the actual roots of the Potato plants, which are found working more remote from the stem. But the chief fallacy which is complained of is that which holds that deep planted tubers of necessity produce their progeny of young tubers deep also. That is not an actual fact, as it is found that not only is the forcing of Potato shoots through some 6 inches of soil not only wasteful to the plant and needless, but also that these same stems throw out their roots or tuber stolons rather near to the surface than deep. Hence, whether planted deep or shallow, the earthing-up or ridging is equally desirable. Some 4 inches depth is not held to be excessive for the planting of tubers; and when the plants are well up and the stems stout, some 4 inches of soil added in the forming of a ridge is desirable. But even then it will be found, unless more than the usual space between the rows is given, the new tubers are far from being too deeply covered—indeed, ample room between the rows is an absolute essential to proper earthing. *A. D.*

**Forsythia viridissima.**—This, at other times uninteresting shrub, is at this season in its full glory of scarlet leaves, quite equalling some hothouse plants with coloured foliage. *Thiscombe.* [We have never observed any very brilliant colouring on the autumnal foliage of this plant. Ed.]

**Some Useful Plants.**—The culture of greenhouse Rhododendrons is deservedly gaining ground. Unlike the Azaleas they can be had in bloom in the autumn. Again, there is hardly any Azalea that has blooms equal in substance to Princess Alice Rhododendron, and none with its delicious fragrance. R. Duchess of Edinburgh and R. Duchess of Connaught, which flower just as they make their growth, have good claims to such an epithet as perpetual blooming. I was much interested while strolling through the glasshouses of Messrs. Veitch, of Exeter, in the

uncommonly successful cultivation of the variegated Ophiopogon jaburan and Paullinia thalictrifolia. The former is sometimes grown in the open border, but in such a position always wants the erect habit it attains in moderate heat. Mixed with other lowly growing plants or Ferns it is peculiarly effective, and, besides, makes an admirable decorative plant for rooms or dinner-tables in the autumn. The plant is well enough known, so, beyond trying to place it before the attention of those who may not have cultivated it largely, or at all, I will only allude to the beautiful soft purple colour of the Grape Hyacinth-like flower. The Paullinia has neat Fern-like foliage, and the infant leaves are crimson-tinted. It is a climber, but if kept pinched forms a sturdy little plant also most suitable for decorative purposes. Mr. T. Moore, in the *Treasury of Botany*, has a most interesting note on the use of guaranine, which is prepared from the seeds of P. sorbilis; some further notes on the subject would, I am sure, be appreciated. Mr. Greenfield, of The Priory Gardens, Warwick, by placing his plants of the variegated Pine-apple (Ananassa sativa variegata) in saucers and then suspending them near the glass, has changed the white edging to a beautiful ruddy colour, and much increased the vigour. He also cultivates extensively two beautiful old plants in Clerodendron fragrans fl. pl., and Eurycles Cunninghami. The flowers of both are most useful for buttonholes and bouquets, and the first-mentioned will keep an exceptionally long time in water. *C. A. M. Carmichael.*

**Honours to Horticulture.**—I think I shall not be alone in assuming that "F. R. H. S." is, in relation to the above subject, ambitious of wearing in his buttonhole the blue ribbon of the Royal Order of Horticulture, or some other absurd form of decoration, which serve to gratify the childish egotism and vanity of weak man, whilst they do but present food for amusement for the wise. Honours to horticulture, indeed!—what honour can earthly potentate or power give to our conscience that it does not already possess? On the other hand, if the degradation of ribbons and decorations be flung at horticulturists and there follows a general scramble amongst the vain and emulous ones for the glittering baubles, what a bitter flood of jealousy and ill-feeling will sweep over our present peaceful and happy profession. And if "honours" be given how are these to benefit horticulture? Will they bring more trade?—will they create more interest in gardening?—will they promote brotherly esteem and good feeling?—will they help to develope the natural taste for gardening, and deepen the hold which it already has upon the community? Certainly none of these things will follow. Ask the nurseryman whether he would prefer a paltry decoration, or "honour," to increased trade and more activity and growth in horticulture, and I am sure he would prefer the latter. One is surprised to find in the ranks of horticulture such craving for the contemptible as is evidenced in this demand for some special honours for its devotees. Why not for agriculture, for engineering, for manufactures in all branches, indeed why not for everything which adds to the nation's wealth and tends to the prosperity and happiness of the people? I trust the gardening community will show that it has a soul above these petty aspirations, and that our vocation needs no such meretricious aid for its progress and prosperity—

> "For a' that, and a' that,
> Their 'honours' cheap and a' that,
> The pith o' sense and pride o' worth
> Are higher far than a' that."

*X.* [The question is not the glorification of individuals, but the advance of the profession in public estimation. ED.]

**Longford Hall, Stretford,** has so long been under the able management of Mr. G. Smith, that to think of the one apart from the other requires at first some effort of the imagination, and yet, in a very short time, the severance will be an accomplished fact. As one of the best gardeners in this district, one of the most successful exhibitors, one whose skill in arranging for effect has again and again been commented on, and withal one of the most pleasant and cheerful neighbours, Mr. Smith has for a long time had a place in the esteem and admiration of gardeners round Manchester. Shortly we may lose him. We wish him every success in any new sphere he may have the good fortune to occupy. The immense quantity of glass at this place has during the past season been put to the most practical of uses. The ranges of vineries have brought tons of fruit; many houses are stripped, and already preparation is being made to commence shutting up the first house. Other vineries have leaves and fruit of capital size and colour in abundance. The labour connected with the thinning of such a quantity of Vines, &c., in the early spring is truly great. Ranges of Peach-houses, 100 feet long, are now quite quiet. The early house is being taken in hand, and it too will be pruned and tied ready for shutting up. Stoves, corridors, greenhouses, &c., are full of plants of their various sections, a capital planted out Fernery being not the least pleasing feature of the garden. I noticed good plants of Adiantum ciliatum in baskets, and pretty it looks when grown thus. Two other good Adiantums are dolabriformis and palmatum. This latter is the plant used so effectively in the group staged by Mr. Smith at the Whit-week show at Old Trafford. Passing through the greenhouses, specimen Azaleas are numerous, and in good order. Capital hard-wooded Heaths are vigorous, and of good colour. Hedaromas, Phœnocomas, Acrophyllums, &c., plants 4 and 5 by 5 feet, are to be met with. On the back wall of one of the corridors we noticed a large plant of Luculia gratissima, very healthy, just showing flower. Large numbers of Camellias of all sizes are grown for cutting purposes, and with the Camellias receiving greenhouse treatment is a large plant of Gleichenia flabellata, in capital order. Real trees of Acacia affinis, over 20 feet high, are in the conservatory, and during their flowering season are invaluable. Associated with these is a fine Araucaria excelsa 20 feet in height, with foliage to the bottom. In other houses there are fine batches of Cœlogynes, Pancratiums, Eucharis, that capital winter plant Thyrsacanthus rutilans, Euphorbia jacquiniflora, besides large plants of Anthuriums, Crotons, Ixoras, Palms, Yuccas, &c. A large stock of Calanthes is also finely grown in this place. Here they have retained their foliage, which is now quite green, and the spikes are pushing up with great vigour, many will reach 5 feet in length, and last two or three months longer. C. Veitchi has bulbs 16 inches long, and stout at the base; the varieties of C. vestita are also strong, the bulbs clean, and covered with a white silky skin free from spot or disease of any description. Splendid bulbs of the new C. Regnieri had been grown this past summer, and were now pushing up spikes that would come in with the late forms, such as C. nivalis and C. Turneri. *W. Swan, Fallowfield.*

**Mildness of the Season in East Anglia.**—Driving to Saxmundham yesterday (December 3) I observed at Benhall a pyramid Pear tree about 8 feet high in full flower, and not a leaf on it. Such a contrast to the many green Hollies, heavily laden with their bright berries! I wonder what will be the future of that poor tree, and when one may expect the new crop of fruit? Certainly not next season. Is it likely that it is worked on the Quince stock, which may have had a good deal to do with its untimely flowering? I have not seen anything else showing signs of untoward growth here, excepting one Irish Peach Apple tree growing on the Paradise stock, which opened a few blooms in the autumn, and has now one or two others about to open. Having read so much lately about Pears and the Congress, I begin to ask myself if we are justified in planting largely trees worked on these stocks. *C. Sheppard, Glemham Gardens, Saxmundham, Suffolk.* [Untimely flowering is just as commonly observed on trees not so worked, and on other subjects not worked at all. ED.]

**Pruning and Planting Fruit Trees.**—Before making a too free use of the knife and pruning-shears the operator should thoroughly weigh in his mind whether or not he is proceeding in the right direction to bring about the best results. If the same attention was paid to the welfare and condition of the roots of many trees as is yearly bestowed on the regulation of branch and shoot, how different and more satisfactory would be the crops of fruit. Unfortunately the knife, &c., is often brought into use when the spade would be found to be the proper corrective required. Unfruitful seasons have much to do with causing the production of over-vigorous wood; but in many more instances where satisfactory results are not obtained it is the outcome of careless planting in the first onset, which includes shallow soil, bad drainage on retentive soil, and other evils which should have been rectified ere planting. Often yearly amputations of shoot and branch take place which only tend to aggravate the evil arising from over-production of strong wood, furnished with few flower-buds, resulting in little or no fruit of inferior quality. I am now alluding principally to trees in the open, such as pyramids, standards, &c. In a deep naturally rich well-drained soil and a favourable climate the combined influences are not such as every cultivator can command, as it frequently occurs that where the soil is rich and deep, the climate is unfavourable, or exactly *vice versâ* may be the case. As to trees planted in good and deep well-drained soil and in favourable localities, very few remarks are necessary as to their ultimate management either in respect to pruning root or branch. Fibrous roots and firm wood well set with flower-buds will develope simultaneously, and only after several years of barrenness will it be necessary to sever a few of the strongest roots in order to restore the balance of root and branch. I am, of course, now speaking of trees which are allowed to grow somewhat naturally, with plenty of side and head room for development, and not of those which are compelled by circumstances to be dwarfed, in order to meet the requirements of position. How different is the case with trees planted in shallow soil, with large fibreless roots which have probably been years growing into a damp unfavourable subsoil. Growing under these conditions trees are in a hopeless state, and can never be expected to produce fine fruit unless the spade is brought into use, the gross tap-roots removed, and the natural soil deepened; and if the trees are somewhat large when subjected to this treatment, a corresponding reduction of branch should take place. To those about to plant let them not study false economy, but lay the foundation of success in good deep soil and perfect drainages. What is a little extra expense when planting, in order to secure fine crops and healthy trees, compared with trees which would be quite the reverse if planted on the haphazard principle? It is to be regretted that so many trees have been planted so indiscriminately around the kitchen garden quarters in private gardens, many of which have been brought into an almost worthless state by constant digging too near the stems of the trees. This is most apparent in gardens where the soil is shallow; it deprives the trees of their best rooting medium wherein the roots should have been encouraged by the application of mulchings, under which hoeing, or slightly pricking over the surface, should never have been exceeded. In conclusion, let me advise clear quarters for vegetables, and others, set apart exclusively for fruit trees, and the many evils arising from intermixing the two will be avoided. *G. H. Richards.*

**Non-rated Trading.**—The grievance to which Mr. Anderson refers at p. 720 is one which has often been remarked upon in these columns, and may be discussed with all the more ease that it is happily outside the region of mere party politics. It is a grievance which is peculiarly hard upon horticultural trading, because it is possible only with gardening, and it is one which appreciable exemptions from local and imperial taxes on the one hand, and the readiness of salesmen in our markets to help on the other hand, has materially fostered. In the latter case it is but natural that whilst gardeners have from their wealthy but often mean employers orders to assist in ekeing out the garden expenses by selling what they can of the garden produce for what it will fetch, salesmen should be only too ready to accept such produce for disposal, because they know that moderate returns will in such case be regarded as satisfactory. The owner has not to live and maintain his garden from the sale of his garden produce. A gardener knows that his wages and subsistence are not dependent upon the sale of the produce. Both hope that as much as possible may be returned in the shape of cash, and that is all. On the other hand the trade grower is absolutely dependent upon his returns for a livelihood, and he has very heavy pecuniary burthens to bear. How on earth, with this unnatural home competition, by which he is handicapped, he still exists, is a wonder, and can only be explained on the ground that his produce is of a more marketable kind, and worthily obtains a higher price. Of course

it may be not inaptly pleaded that this competition, if unjust, still benefits the consuming public, and it has no cause for complaint; but no such result can justify the injustice incidental to rating and taxing heavily, even to the uttermost farthing, the trade grower, whilst the rich amateur trader goes almost scot free. But Mr. Anderson probably knows that the grievance of which he complains might be remedied even now did local authorities and justices of the peace act with justice in the matter of rating. Buildings erected for the gratification of a taste for luxury and enjoyment should be fiscally dealt with at a much higher rate than buildings erected solely for the purposes of trade; but I believe it is a fact that the reverse is the case, and that the latter pay the heaviest imposts. If local authorities would reverse this system and place the heavier imposts upon the former class of property, the burden of the trader would be proportionately lightened. But then were such the case we might see the wealthy and influential house and land owner appealing against the assessment authorities—the only result of such an appeal would be easily discerned beforehand. Really, there can be no hope for remedy until some national system of local government throughout all the counties is established, and that upon a complete representative basis. Then and only then may we hope to see the grievance (with some others) complained of removed. All over the kingdom are to be seen fine houses lying empty, because whilst the rating is almost *nil* the owners have no pressure put upon them to let at reduced rentals. Ordinarily the assumption is that properties should be rated at their rental value. But that is not always a fair basis of assessment. Some properties have a factitious rental value, others one far below their real worth. Rating should therefore be carried out on a fair and exquitable basis, and that can only be found by creating a standard of worth or value, and assessing all property, no matter whether let or unlet, ornamental or trading, precisely alike. But there can be no satisfactory settlement of this vexed question until the incidence of taxation, and especially in its local operation, is dealt with. At present only real property as found in land and buildings pays local taxes. The farmer, market-gardner, nurseryman, or tenant of any buildings is locally taxed to the utmost because they occupy and exist upon tangible or real property. Hence the man who rents land only, and the buildings needful for its profitable employment, or he may perchance be the owner and occupier of the same, having expended upon them all his capital, is called upon to pay rates on all he possesses. But the investor in other directions, whether in shares, or in Consols, or various ways, occupies a house that pays but one-eighth the amount of rating a farmer may pay for his house and land, and yet the occupier of the house may be ten times the richer man. Still all his investments are beyond the reach of the local authorities. They are not to them found in a tangible shape, and thus they pay nothing to the local rates. Clearly that is unjust, because the local expenditure is of as much value to the owner of personal property as to the unfortunate owner or occupier of real property. The matter affords evidence of the need for an immense reform in the present incidence of fiscal burthens, which fall with special force upon one class, whilst others are materially exempted. The diverting of a portion of the income tax towards lightening local rates might be of some use, but a simple and more equitable system of local taxation would be the greater boon, provided that in the rearrangement we did not get out of the frying pan into the fire. *A. D.*

**Artificially Coloured Potatos.**—At the Birmingham Cattle Show last week there was, as usual, a large display of Potatos, but to my great surprise prizes were awarded to exhibits in several classes which contained specimens which were artificially coloured, principally the red varieties. I have for many years visited large and small shows of Potatos, but never before have I seen such a flagrant or gross insult to Nature's colouring. I hope those gentlemen who were appointed to make the awards will be able to justify their action, and I trust the opinion of exhibitors generally will be freely expressed through your columns on the subject. *J. Harrison, Leicester.* [We have no information on the subject, but if our correspondent's statement can be substantiated, there is ample cause for remonstrance. ED.]

# Reports of Societies.

## ROYAL HORTICULTURAL:
December 8.

A very small gathering witnessed the close of the year of exhibitions at South Kensington on Tuesday last, so sorely have the numbers of productions and of the visitors dwindled since the greater exhibition of Inventions shut its doors in October. The three faithful committees were present, but with little wherewithal to occupy their time.

### Scientific Committee.

The Hon. and Rev. J. T. Boscawen in the chair.

SCLEROTIA IN STEMS OF CHRYSANTHEMUMS.

Examples of these, described by Mr. W. G. Smith in the *Gardeners' Chronicle*, were forwarded by him, as also an abnormal form of Lentinus lepideus (Agaricini), closely resembling a branching Clavaria, from a coal-pit near Stoke-upon-Trent. It is often phosphorescent when in this state in mines.

PRODUCE OF LARGE PALMATE POTATO.

A Potato much resembling a hand in form was sent to the Scientific Committee in November, 1884. It weighed 15 oz. On being planted the produce in 1885 was 8 lb., or more than 800 per cent. Such a result would seem to corroborate those at Chiswick—namely, that whole sets usually give a much greater produce than those which have been cut, the former presumably supplying more nourishment, and therefore greater vigour on the commencement of growth.

RESULTS OF EXPERIMENTS ON EARTHING-UP POTATOS AT CHISWICK.

Dr. Masters brought a preliminary report, observing that through the absence of Peronospora, as in 1884, the main object of the experiment failed; but the general results of produce under the different methods of treatment corroborated those of last year. He summarised them as follows:—1. Earthing-up produces a crop of more uniform and of superior quality, even if less in quantity. 2. That bending the haulms occasions a diminished yield. 3. That a larger aggregate produce is derived from planting whole tubers than from the employment of cut sets. It was suggested that the sub-committee should continue the experiment next year, but with fewer rows, and confine the observations to testing the Jensenian method of moulding should the disease occur.

DELPHINIUM, FASCIATED.

Mr. Boulger exhibited specimens, about 5 feet long, which had occurred on the same plant for two or three years. Dr. Masters observed, on the authority of Mr. George Paul, that a Holly, var. Doningtonensis, is particularly liable to fasciation, as also are the Hollies at Bearwood. Mr. Boulger was inclined to attribute it to poverty of soil. Hon. and Rev. Mr. Boscawen remarked that fasciated stems often occurred from the same root of Asparagus.

RESERVE MATERIALS OF PLANTS IN RELATION TO DISEASE.

Rev. G. Henslow called attention to a paper by Mr. D. P. Penhallow in the *Canadian Record of Science* (vol. i., No. 4, October, 1885), in which the author fully corroborated a single result of a large series of experiments carried on at Houghton Farm in 1883, to ascertain (amongst other objects) a cure for Peach yellows. In only one instance was the Early York Peach very decidedly benefited by the special manures applied, and that was with muriate of potash. "Instead of small abnormal and coloured leaves in early July, the foliage developed into organs of good size and a fine healthy colour, while the growth was also fine (1883)." The cause of the disease he had found to be localisation of starch in the bark, &c., during the summer, instead of its being utilised for growth. In the author's latest communication he calls attention to the fact that in 1871, Nobbe and Schröder demonstrated by their experiments on Buckwheat the influence which may be exerted upon the distribution of reserve material by an abnormal food supply. Chlorine and potash were found to have important bearings upon the products of assimilation; potash being essential to the formation of reserve matters, while chlorine was found to bear a most important relation to their final distribution, and that by withholding chlorine, starch accumulated in the bark and leaves, particularly in young growth. Restoration of chlorine gradually effected the distribution of starch and restored the normal state of health. Acting on these results, and applying them to the Peach yellows, Mr. Penhallow gives the following analyses to show the beneficial results of a similar application of chlorine:—

| | Fruit of Crawford's Early. | | Wood of Ditto. | |
|---|---|---|---|---|
| | Healthy. | Diseased | Restored | Diseased. |
| Ferric acid .. | 0·28 | 0.46 | 0.52 | 1.45 |
| Calcium oxide .. | 3·64 | 4.68 | 54·52 | 64.23 |
| Magnesium oxide | 6·23 | 5.49 | 7·38 | 10.23 |
| Phosphoric acid . | 10·02 | 18.07 | 11·17 | 8.17 |
| Potassium oxide . | 74·30 | 71.30 | 26.01 | 15.67 |
| | 100·00 | 100·00 | 100·00 | 100.00 |

These analyses, before and after the application of the muriate of potash, made it at once clear that in the disease the ash contains more phosphoric acid and lime and less potash. Consequently a number of diseased trees were treated with muriate of potash. "After the lapse of a few years they lost all appearance of disease, and were restored to such a condition of health that up to the present time they have been most profitable in their production of fruit." . . . Hence, "So far as chemical data could determine the disease was caused by, or, at least, associated with imperfect nutrition."

CROCUSES, DRIED SPECIMENS OF.

Colonel Clarke exhibited a series of twenty-five autumn flowering species, illustrating the various characters of the perianth and stigmas, the latter organ being regarded as an important classificatory character.

THE CHAIRMAN.

As this was the last meeting a vote of thanks was proposed by Dr. Masters, and seconded by Colonel Clarke, to the Chairman of the Committee, Sir J. D. Hooker, and the hope was expressed that he would continue to hold the office in the ensuing year.

### Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. E. Hill, H. Williams, H. M. Pollett, J. Dominy, H. Ballantine, J. Fraser, T. Baines, J. James, H. Herbst, W. Bealby, H. Bennett, J. Child, Shirley Hibberd, J. Douglas, H. Cannell, W. B. Kellock, H. Turner, J. Hudson, G. Duffield, F. R. Kinghorne, and Dr. M. T. Masters.

Of the few Orchids brought out, there were some attractive forms of Calanthes, from Sir Trevor Lawrence's garden, Burford Lodge, viz., C. casta, white, with a yellow spot in the centre; C. porphyreum, a bright magenta, a compact bloom, with a lip smaller than most of the species; C. Burfordiana, was alike in colour, but with blooms of a much larger size; C. aurantiaca, of the C. oculata type, having an orange centre; C. amabilis, a pale pink form of flimsy texture.

C. Dorman, Esq., The Firs, Laurie Park, Sydenham (gr., Mr. White), showed Odontoglossum Humeanum, a dwarf species, with a flower-stalk in this instance of 6 inches in length, bearing three blooms. The sepals being marbled brown, petals greenish-white, column white, rose tipped, the lip being about an inch in diameter, and of a pure white.

W. Vanner, Esq., Camden Wood, Chislehurst (gr., Mr. Robins), showed Barkeria Vanneri, a long and slender spike of purple-rose coloured blooms.

Messrs. J. Veitch & Sons showed Chrysanthemum Domination, a broad petalled hybrid Japanese variety, pure white, and of value for its lateness of blooming chiefly.

Mr. Rallings showed also a sport from Chrysanthemum Duchess of Albany, a flower of some merit, of which something better may be made under good culture. Mr. J. James, Woodside, Farnham Royal, showed Primula Curly, a well-made white variety, of substance and regular form, the foliage being of the neat-looking serrated kind.

Mr. R. Owen, nurseryman, Castle Hill, Maidenhead, brought a hamper full of plants of a nice decorative Chrysanthemum with numerous white blooms—a variety of much usefulness at this late period of the Chrysanthemum season—a fact which received full attention from the committee.

Messrs. J. Carter & Co. showed the curious Boussingaultia baselloides, a temperate-house climber, from Buenos Ayres, being a number of tubers on its branches. The leaves were of a lively green colour, and cordate.

From the Swanley nurseries came a pretty stand of bright blooms of Pelargoniums, single zonals: conspicuous amongst them was Swanley Gem, of bright cerise; Queen of the Belgians, fine white, a good truss, and substance; F. Kaufler, a rich maroon, one of the best Mr. Cannell had brought; lastly, Eurydice, a purple-rose, a beautiful distinct variety.

A dozen blooms of the pretty Ivy-leaved Pelargonium Madame Thibaut were also acceptable at this time of the year. The remaining exhibits from Messrs. Cannell & Sons were several show-boxes of various classes of Chrysanthemums, shown as cut blooms.

Messrs. H. Page & Son, Grove Nursery, Teddington, had a capital collection of Cyclamen persicum and other kinds; especially noticeable were some white persicum, quite true in strain, and finely grown and flowered. Almost without an exception the plants were the produc-

tion of seeds sown in September, 1884. A Silver-gilt Banksian Medal was awarded.

FIRST-CLASS CERTIFICATES.

To Sir Trevor Lawrence, for Calanthe porphyrea.

To Mr. Owen, for Chrysanthemum Boule de Neige.

To Messrs. H Cannell & Sons, for Chrysanthemum Queen of the Yellows.

### Fruit Committee.

Present: H. Veitch, Esq., in the chair; and Messrs. J. Lee, J. Burnett, J. Willard, J. Woodbridge, G. T. Miles, G. Paul, F. Rutland, R. D. Blackmore, and G. Bunyard.

Mr. B. S. Williams showed again the handsome black Grape, Winter King, said to be a graft sport from Gros Colmar worked on Raisin de Calabre; but in the case of the fruit shown it was the produce of a Vine on its own roots, the characteristics being apparently as easily distinguished as in former samples exhibited before the committee. Some of the berries were very much like those of Gros Colmar, whilst others were distinctly oval; the bloom was very dense, and the keeping qualities undeniable. What is it?

A few seedling and other Apples were shown, but nothing that obtained a recognition of merit from the committee.

## SMITHFIELD CLUB.

AT the eighty-eighth annual show of this club, which opened on Monday, the 7th inst., a good display of roots, corn, &c., was to be seen, besides the cattle and sheep.

Messrs. Sutton & Sons, Reading, exhibited large quantities of Mangels, two varieties of which, viz., Berks Prize and Golden Tankard, were particularly fine, which may also be said of the Champion Swede. A feature of this stand was a collection of grasses for agricultural purposes. A number of dishes of Potatos were also exhibited, besides collections from members of the Royal Family.

Mr. J. K. King, Coggleshall, Essex, had a stand of various roots, which were of fair quality.

From Messrs. J. Carter & Co., Holborn, London, came a varied collection of roots, &c., and also some 200 glass jars of ensilage from various people throughout the country. This firm also exhibited for Colonel Stockwell, Potatos and Turnips, grown in the Island of Anticosti, River St. Lawrence; the Turnips from the Colonel were very large and clean, but the Potatos were cracked, although of good size. Mangels, Swedes, Potatos, &c., were shown in good condition, and some boxes in which Clover and different grasses were just sprouting, were also exhibited.

Messrs. Raynbird & Co., Basingstoke, exhibited a varied collection of organic manures from the Anglo-Continental Guano Works, and chemical manures from Lawes' Chemical Manure Company; seeds of grasses and Wheat, Peas, Beans, Clover, &c., and hay from Hampshire Cow-grass, which is said to yield 3 tons per acre.

Messrs. Webb & Sons, Stourbridge, exhibited a number of Swedes, among which was the Imperial Swede which took the prize at Birmingham this year. Messrs. Webb also exhibited a great many varieties of Potatos, among which we noticed the new variety Kinver Hill, of good appearance; seeds of grasses and cereals of many kinds were plentiful.

An interesting exhibit consisted of 248 samples of ensilage shown in the name of Mr. Kains-Jackson. The samples at this stand were half-boxes of the prize lots brought from the exhibition at the Ensilage Society's rooms, Museum Street—Mr. Kains-Jackson being a member of the Council of the Society.

Messrs. Hooper, of Covent Garden, had a small exhibit of Potatos and corn; their Potatos were large and clean, especially Schoolmaster and White Elephant.

Messrs. Thos. Gibbs & Co., Down Street, Piccadilly, occupied a large space, exhibiting produce grown by their customers, which consisted chiefly of the usual agricultural roots, Swedes, Mangels, &c., varieties of Potatos, and a sample of ensilage, cured in 1884, was shown from Luton Hoo Park, Luton. Some very large cattle Cabbages of very fine substance, and Yellow Belgian Carrots of great length, were exhibited by this firm.

A collection entirely of seed corn was sent by Messrs. Oakshott & Co., Reading.

Messrs. Harrison & Sons, Leicester, and Messrs. Hall & Son, Westbury, Wilts, both exhibited collections of roots, comprising Swedes, Potatos, Onions, and seeds of other agricultural plants, such as grasses, &c.

One of the most interesting exhibits of the show was that of the Canadian Pacific Railway. This was an exhibition of the produce of Manitoba and the Canadian North-West. The produce is all natural, without the aid of manures. Gourds and Squashes of enormous size, Onions, and Beauty of Hebron Potato might be seen here, the latter grown to about three times its usual size, as also are many other varieties. Tomatos and various sorts of fruit were seen preserved in jars, the Tomatos looking wonderfully fine. In a glass case was a sample of the soil, showing its texture for several feet in depth.

## NATIONAL CHRYSANTHEMUM.

A MEETING of the Floral Committee took place at the Royal Aquarium on Wednesday last, when one of the best displays of bloom that has come before this body was seen, several very fine flowers being produced—indeed, surprisingly fine for the season of the year.

First-class Certificates of Merit were awarded to Japanese White Dragon, a pure white flower of the Dragon type with stout broad petals, and promising to make a very fine exhibition variety; to Japanese Bicolor, like the foregoing, an American production, orange-red, the reverse orange, of the Dr. Masters type of flower, large, full, and striking; and to Gloriosum, pale yellow, in the style of Agrements de la Nature, but with broader petals, and quite distinct in character. These came from Messrs. W. & G. Drover, nurserymen, Fareham. The same award was made to Pelican, a fine white variety in the way of Ceres, but without the bluish tinge found in the last named; it has fine broad petals, and appeared to be first-rate in every respect. This came from Messrs. James Veitch & Sons, who also had Domination, a small white flowered Japanese variety.

Mr. N. Davis, nurseryman, Camberwell, received First-class Certificates for Japanese Duchess of Albany, orange or cerise-red circumference, with clear golden, fine and bold, the petals narrow and long; Japonaise, very finely shown, large full flowers of the incurved type, pale reddish on the surface, with a reddish-gold reverse—very fine, and will make an excellent exhibition variety; also to Boule d'Or, Golden Orange, a very large and fine variety, the flowers of great size; also to Ceres, very delicate blush, changing to white, broad flat petals—certificated as a Christmas Japanese, a fine late-flowering variety, and stands well. Mr. Davis also had a fine lot of blooms of other Japanese varieties, including Ville de Toulouse, pale lilac, with a dull reverse—very light and pleasing; Dormillion, pale bright magenta; Mons. Burnet, blush face, pale reverse—very large, and a fine bold show variety; Roseum pictum, R. striatum, &c.

A First-class Certificate of Merit was awarded to Messrs. H. Cannell & Sons, for Anemone Catherine Wheel, a Japanese type, with long white quilled guard petals and sulphur centre—very pretty and distinct. Also to Mr. Owen, nurseryman, Maidenhead, for Boule de Neige, a large-flowered reflexed decorative variety—pure white, very free, and exceedingly late, and promising to be most useful.

Votes of thanks were passed to Messrs. H. Cannell & Sons and N. Davis, for contributions of cut flowers, the former showing forty bunches of different types.

## MASSACHUSETTS HORTICULTURAL.

BOSTON: *Nov.* 12 *and* 13.—The annual Chrysanthemum show of the Society took place on the above dates, and certainly was more extensive than any previous one, both of the large halls being filled instead of crowding all into one hall as in former years. There were many new seedlings shown, including some from New York and New Jersey. The finest seedling variety is a white one from President-Elect, Dr. H. P. Walcott, marked "C. 10;" it is probably the best white seedling ever originated in this country. The plants were displayed in the upper hall; in the centre were the specimen plants from Dr. H. P. Walcott, Cambridge, and Edwin Fewkes, Newton Highlands, Massachusetts; while on either side were arranged large collections of many varieties. Dr. Walcott was 1st with Mr. Gladstone for specimen plant, large-flowered or Chinese; and Edwin Fewkes 2d, with Mr. G. Gunny. Japanese.—Dr. H. P. Walcott 1st, with Fernand Feral; Edwin Fewkes 2d, with Carmen. In Dr. H. P. Walcott's collection we also notice the seedlings George Walcott, bright pink; Colorado, yellow; Pres. Parkman, pink. He also exhibited the following varieties, including some of the finest plants in the hall, viz.:—Fair Maid of Guernsey, Golden Gordon, M. Boyer, Mrs. Shipman, Salamon, Mlle. Marthe, Alfred Salter, Crimson King, Mrs. Forsyth, Cherub, Alex. Dufour, Golden Dr. Brock, John Thorp (seedling of the quilled var. with yellow centre), and Beau Paul. Edwin Fewkes also exhibited Source d'Or, Flambeau, Mme. C. Audiguier, Margot, Golden Dragon, Oracle, Baron, L'Incomparable, John Salter, Félicité, Mabel Ward, and Mr. Geo. Glenny. E. W. Wood was 1st in the class of forty named varieties, all classes, and Edwin Fewkes 2d; 3d, Patrick Melley. In the lower hall the cut blooms and fruit were arranged. Edwin Fewkes was 1st with twelve cut blooms of large flowered or Chinese, named; 2d, E. Sheppard & Sons, Lowell, Mass. Japanese, named.—E. Sheppard & Sons, 1st; Edwin Fewkes, 2d. Six cut blooms, large flowered or Chinese, named.—Edwin Fewkes, 1st; S. Neil, Dorchester, 2d. Six cut blooms, Japanese, named.—E. Sheppard, 1st; 2d, George W. Creesy.

At one end of the upper hall the Orchids were arranged on a table running across the hall, backed up with tall Palms, &c. William Robinson, gr. to F. L. Ames, took 1st prize in the class for three plants, named varieties, in bloom, with Odontoglossum Alexandræ, Vanda Sanderiana, Cypripedium Maulei. He also showed Cypripedium Chantini, C. Spicerianum, C. Harrisianum, C. marmorophyllum, Vanda cœrulea, Phalænopsis amabilis, Dendrobium formosum giganteum, Oncidium crispum Forbesii. He received a First-class Certificate for the new Seden hybrid, Cypripedium tessellatum porphyreum, also for Cypripedium Tonson. The above are the principal plants shown by them. E. W. Gilmore, Esq., North Easton, Mass., Thomas Greaves, gr., contributed a large collection, including a plant of Oncidium ornithorhynchum, with fifty-six flower-spikes on it, also Oncidium varicosum, with sixty flowers, and the following, viz., Calanthe Veitchii, C. vestita, pink eye; Dendrobium formosum giganteum, D. bigibbum, Lycaste Skinneri, Masdevallia tovarensis, Odontoglossum grande, Phalænopsis amabilis, and Saccolabium Blumei majus.

From the Harvard Botanic Gardens (W. A. Manda, gr.), came an interesting group of plants, among which we noticed the curious Strelitzia augusta, or Bird of Paradise flower; Tagetes Lemonei, a native of the United States; Salvia leucantha, with purple and white flowers; and a species of Aristolochia, very curious to look at, but smelling like carrion. Mrs. F. B. Hayes contributed a collection of cut Chrysanthemums and Camellias, Edwin Sheppard Chrysanthemums, Geraniums, and Pancratium fragrans. J. Lewis Childs, of Floral, New York, had a large collection of seedlings and other varieties. The above includes most of the principal collections, but we cannot mention more for want of room. On the fruit table we noticed some very fine Pears, viz., Angoulême, Anjou, Langelliers, Lawrence, Vicars, and Winter Nelis, also some very fine Dana's Hovey. From Mrs. F. B. Hayes came a dish of Psidium (Guava). On the vegetable table were some very fine Cauliflowers, Brussels Sprouts, and Celery.

## STOVE PLANTS IN WINTER.

THE time of rest for plants is now at hand, and even in the case of the large number of tender kinds grown under glass the majority require a period of either total or partial rest, according to their nature. Heat and moisture [and light] are the primary agents that excite growth in vegetation; in the absence of either of these in quantity sufficient to keep the vital force in an active state growth ceases, wholly or partially, in accordance with the extent of the reduction that takes place in any of the exciting forces. Plants that are indigenous to countries where there are extreme fluctuations from excessive moisture to excessive drought naturally are the kinds that submit to treatment of a comparatively like character at the hands of the cultivator. Yet the sight of a plant stove wherein are located an average collection of species, brought together from the eastern and western hemispheres, no two in all probability coming from places where the climate is alike, especially in the matter of moisture, but in other respects differing much, causes those who are acquainted with the widely different conditions under which the plants exist naturally to marvel that they can be induced to thrive in the same house, where, when all that is possible has been done in regulating the heat, the majority will get either more or less than they exactly require; for although in a good sized house something may be done to meet the requirements of the inmates, by putting those that want the most warmth at the warmest end, and such as require less at the coolest end, and by giving all the air that is admitted to the house at the latter, still this will fall far short of securing to each of the occupants the condition they are subject to in their native habitats. Thus it follows that the state of complete or partial rest required by each kind of plant, must in great measure, be regulated by the use of the water-pot. Those who have ever so little knowledge of what occurs in some parts of the world where the temperature from one end of the year to the other is always high, need not be told that were it not that the soil is so completely dried up for a time vegetable life would be continuously moving at high-pressure rate. There is ample proof that a like condition of rest can be brought about with some plants when under artificial cultivation by drying their roots, when otherwise the heat they are subject to is such that it would keep them on growing when it is needful for them to be at rest. The advantages attending this method of resting such plants as will bear without injury their roots being quite dry is, that when there is not the convenience of special houses wherein to place them whilst at rest, they can remain in the stove without the heat, as often practised, being reduced too low for those plants that require a comparatively high temperature even in the winter. I have often had such things as Allamandas, Bougainvillea glabra, Clerodendron Balfouri, C. Thompsoni, Aristolochias, Mussænda frondosa, Thunbergias, Dipladenias, and others of a like character, standing for eight or ten weeks quite dormant in a house that was kept at a temperature of 66° or 68° in the night. Needless to say the soil was quite dry, or the plants would have grown apace with the amount of heat present, as shown by others of the same kinds which were located in the same house, and being required to flower earlier had the requisite amount of water to keep them growing.

Even plants like Stephanotis, Passiflora quadrangularis, the shrubby Clerodendrons, Medinillas, and others that are quite evergreen will, if the growth has been made under conditions that have given sufficient strength and substance to the wood and leaves, bear without injury the soil keeping dry enough for a time to prevent their growing perceptibly. But although the plants last spoken of will bear their roots keeping comparatively dry in the way described, and those

previously named do not suffer by their roots being in soil devoid of moisture, still it would not do to treat indiscriminately all the various subjects that come under the head of stove plants in this manner. Neither would a like course answer if the atmosphere of the house was too dry, for it naturally follows that a plant cannot bear standing in an atmosphere so dry as to extract any moisture from its foliage at a time when its roots have none within their reach to supply the loss. Instead of this the air of the house should be charged with as much moisture as the dull time of the year will permit of being used.

It may be well here to mention that, except with the intention of inducing them to flower later in the spring or summer than they otherwise would, there is no necessity for subjecting many kinds of plants to this drying up process that are usually looked on as requiring to be so treated to get them to flower sufficiently the ensuing year. There are many stove plants that through being annually subjected to a half-dried condition of the soil are so injured that they do not grow or flower as they should or otherwise would do. Ixoras in particular suffer by this mistaken practice. All the reduction in the matter of water that they require is that consequent on their making less growth, and the moisture not drying up so fast as in summer, proportionately less should be given. These and all other plants that do best when kept moving continually throughout the winter, and that bloom naturally from the current growth without a season of rest between the growth being made and its flowering, should never have the soil drier than is consistent with continuous root extension—a process that is always going on with them, only slower in winter than in summer.

Many stove plants that naturally make continuous root-growth are annually, as autumn comes round, put through the punishing process of having the soil kept much too dry, under the impression that unless the wood is in this way hardened up they will not flower. Anything in the shape of bloom that is got in this way will be of little account, as it may be taken for granted than unless the previous summer's growth has been made under conditions such as to give it the requisite strength and solidity no amount of drying off will set the matter right, but rather make worse the state of the plants so treated. I have already alluded to the widely different conditions under which an ordinary collection of stove plants exist, conditions that it will not do for the cultivator to lose sight of, especially in a matter of such importance as the extent to which root moisture should be withheld. In this more than in most things connected with their cultivation any approach to an all-alike course of treatment will not end satisfactorily. Whilst some plants will bear without injury their roots for a time in winter being kept perfectly dry and others partially so, there are many that suffer if there is any approach to such a condition of the soil. *T. B.*

## Florists' Flowers.

### THE CINERARIA.

THIS is certainly one of the most esteemed of greenhouse flowers during the first four months of the year. They immediately succeed the Chrysanthemums, and their rich, brilliant colours are fitting heralds of the coming spring. The plants suffer from damp at this season, unless they are placed in a heated house, with ample ventilation. It is no use to place them in frames or unheated pits at this late season of the year, as severe frosts may soon set in, and the plants are of too tender a nature to resist cold. When the weather is at all favourable ample ventilation must be the rule, but high winds damage the large fleshy leaves. A sure sign of good cultivation is the preservation of the large leaves near the base; if these decay from any cause the plants cannot be of the highest merit. Everybody cannot afford a special house for their culture, but those who can will, or ought to have plants in all stages of growth, and as they come into flower they should be removed to the greenhouse; this gives those that remain a better chance to develope themselves. I need not say that plants intended for exhibition in the spring should have plenty of space, and must not be allowed to become pot-bound before they have been placed in their flowering pots. I only stop the flowering growth once, and that is as soon as the flower-stem rises out of the centre of the plant. The importance of ample ventilation cannot be overestimated. I like to have the plants in a house from which the lights can be removed, and I would take the trouble to remove them even in this late period of the year, if the weather was favourable. It is not well to be too free with manure-water; if this is applied at all it ought to be weak, and never unless the pots are well filled with roots. The plants are very easily injured by greenfly. They cling closely to the stems, and insinuate themselves close round the flower-buds, extracting all the substance out of them. I would fumigate with tobacco smoke if I saw a single greenfly in the house. By far the largest proportion of cultivators grow their plants from seeds, and the improvement within the last few years has been so great, that for all ordinary purposes seedlings are not only easier to manage, but are quite as showy as the best named varieties. For exhibition purposes, I would much rather grow named sorts or selected seedlings. They are very easily propagated during the months of May and June, and such plants will produce large handsome specimens which will fill an 8-inch pot, forming a very large head of bloom. The points most essential in their culture are cleanliness and the production of healthy growth by keeping the plants close to the glass, admitting air abundantly, but by no means exposing the plants to be injured by high winds. A few of the double varieties may be grown for variety, the best of them being very pretty; but taking them in the mass they are not nearly so elegant as the single forms. They require just the same treatment. *J. Douglas.*

## MARKET GARDENING.

IN continuation of my remarks on vegetable growing, as practised in connection with metropolitan markets, it will be necessary to refer to several crops, or kinds of vegetables together, owing to the fact that as co-existing crops they occupy the same space of ground together. The principal or main crop is, however,

### CELERY.

Owing to the extent of ground required in connection with this important crop, to insure that it be efficiently earthed up to properly blanch, &c., much more space has to be given it than is really required during the summer seasons. Market gardeners are therefore obliged to make the most of such space, and always grow other crops thereon which owing to their market value are desirable. Celery growing for the London markets is an industry which has become more or less, a monopoly in the hands of a limited number of old and efficient growers, whose produce and names are recognised in each market, though there is no necessity to give them here, their success being due to care in selecting soils and sites, and to experience in its culture only obtained by long practice. The soil preferred is a dark loam, and the sites generally such as have some minor tributary of a river or a brook flowing alongside, the water of which is brought either by artificial means, or by simple flushing, for the process of irrigation during the summer season.

It will be seen, therefore, that these conveniences outweigh usually those possessed by private growers. Besides which, as Celery is an indigenous marsh plant, made fit for food by improvement, it flourishes best in such-like sites.

Each year's culture may be said, for the purpose of these remarks, to date from a period in the winter, or very early spring, when the necessary trenches are dug out for the crop, which is done in the usual way, though they are not dug out so deep as many gardeners think it desirable to do. The trenches are subsequently manured with green, or once or twice turned stable manure, and not, as is generally the case in private gardens, with old decomposed dung from hotbeds. There seems to be no disposition to dig such manure in at once; the reason appears to be that a "catch crop" is taken before the time for planting out the young Celery plants arrives, one such crop being

### EARLY RADISHES.

For this crop the mounds between the prepared trenches is utilised. During a mild period, early in the third month of the year, such mounds are neatly raked over, taking care not to force the loose soil into the trenches, and a crop of Radish seed is sown. The variety most commonly used is the French Breakfast, an Olive-shaped form of Turnip Radish. Whether it be the soil, or the elevated beds they are grown upon, the success obtained by the simple system of growing them described is wonderful—though I am bound to say some part of the success is due, I believe, to sowing the seeds somewhat thinly compared to the way similar seeds are generally sown in private gardens, &c. In other words, the seeds are sown so thinly as to insure an ample crop, yet not so thickly as to impede each other's proper growth and bulbing. So admirable are the results that when examining these long beds I have pulled up bunches of the finest size and quality of Radishes, each time I put my hand down and pulled up as many as the hand could grasp.

The birds are a great hindrance to success in connection with the successful culture of Radishes in small gardens, and where thick sowing is all but invariably resorted to to neutralise their depredations amongst such seeds, which birds are particularly fond of. The fact remains, however, when the seedlings come up too thickly they cannot bulb, hence a great waste of ground, time, and seed is the result. Not only is this the case in connection with Radishes, but Turnips and all bulbous rooted plants show it in like degree. Turnips are usually thinned out, and this would in degree prove equally efficacious with too thickly sown Radish seed. I do not overlook the fact that seed-sowing in large breadths is a very different thing to patch sowings of more limited areas, and that birds cannot do the injury to large sowings they invariably do lesser ones, or that boy bird tenders are veritable additions to large market gardens; I desire only to point out that abundance of light and air, with ample distance between the seedling plants, are capable of giving the best results. The expanse of Radish beds sown requires no further attention until full grown, when bunching takes place, after which the beds and the whole space is again free for other crops. Other crops are occasionally grown in lieu of Radishes, or in succession to them, and an important one suitable for either is

### LETTUCE.

Seedling plants, mainly of the Paris Cos type of Lettuce, are secured, either by autumn sowings under the protection of cold frames, or early spring sowings in a suitable temperature—such seedling plants being duly attended to so as to keep them stocky and robust by giving air abundantly, or transplanting them in the usual way. At a suitable season they are finally transplanted, three or four rows deep along the flat ridges between each Celery trench.

The Lettuces come in for market uses at a period of the year when there are no excessive supplies, sometimes securing high prices. Another and similarly treated crop is

### EARLY CAULIFLOWERS.

Though not so generally grown as the two preceding crops, owing to earlier produce finding its way into market, and its uncertainty compared with the preceding, still occasionally a row or two of early Cauliflowers are planted along the ridges by way of change crop. These, however, only deserve passing notice. I return, therefore, to the main subject—the Celery crop.

### SOWING CELERY SEED.

Market gardeners have evidently very fixed ideas as to what kind of seedling plants make in the long run the best produce. And though some of them commence digging good blanched examples somewhat early in the season, they do not appear to unduly force germination, or the after-growth of the young seedling plants.

Wooden frames are partly filled with rich soil, or, as is oftener the case, the ground is well prepared by enriching, breaking up, &c., and the frames placed thereon, such frames being of the modern type, handy, comparatively shallow, light, and convenient. The seeds are then sown and neatly covered, and the sashes shut down until germination is in progress, air, &c., being given as growth progresses. By this means very vigorous young seedling plants are secured.

As soon as large enough for pricking out, every possible advantage is taken of ground where protection can be afforded to transplant and forward the earliest batch of plants, so as to make them ready for

planting out at the earliest possible time. I have observed Celery growers even to use span-roofed houses for this purpose. Elevated beds are raised, and the young seedlings dibbled out thereon. This work is done by women employed on the premises for general work.

During the subsequent summer months the power to irrigate the trenches gives great impetus to growth, and it is not to be wondered the result gives such thick, sturdy sticks!

It may be observed, however, these are all important and requisite features, from a market point of view, and strange as it may appear, in regard to Celery more particularly.

The fact is, to make a profit it requires good uniformly well grown Celery, and a variable or inferior crop would consist of so much waste, even if good bundles could be made, so that the returns would be lessened one half and more.

Gardeners who grow for private tables need not wish to emulate the large compact market sticks. The tenderest and best Celery rarely grows fine show sticks. The fact is, high quality consists of tenderness, and the most tender, or crisp and best are, owing to their very crispness, prone to split in two at the outer leaves during growth. Thus such a crisp variety as Williams' Matchless would never succeed upon market vans nor exhibition boards, though for salads it may have no equal.

But I imagine private growers may profit from even these facts. It is needless to remark private growers, in their anxiety to have early, and, as they imagine, large and fine produce, are prone to sow seeds in heat at a somewhat early date; the result being, when pans or boxes of young seedlings are secured, they are placed on one side until greater convenience, either of time or space, permits of their being planted out. This fact in itself causes the plants to become stunted, and occasionally, later on, to bolt more or less.

But I maintain that still more permanent injury is done. It matters not how long, or how strong a plant drawn in a transplanted seedling form may be, if it is not possessed of a good base. And as regards nursed-up, overdrawn plants, even when they are planted out early, their whole vigour, if they possess any, is expended in forming such requisite base, the result being that ultimately the whole of those earlier leaves wither away, and even if rich soil and attention to watering cause subsequently a vigourous growth, this becomes drawn and out of character, so that the original want of a good robust young plant causes even the matured produce to be thin and devoid of heart. If private growers would emulate their market *confrères*, and set aside a small frame on a sunny sheltered site, sowing the seeds therein at precisely the same date they habitually make those early sowings in heat, giving but slight attention to it subsequently, I am convinced better results would ensue.

As it is, too early forced, transplanted, and hence drawn-up plants do not come up with nearly such good fibrous roots, and being transplanted often during dry periods, subsist on meagre supplies of root moisture, as compared with the ample supply which efficient irrigation affords, applied as matured practice dictates.

In connection with Celery growing for market, the preparation of the plants following a summer's growth for earthing up is particularly well performed. Growers know the great injury that accrues to the stalks by permitting suckers to remain upon them. Great care is therefore taken to remove all such. The earthing up work is performed with nice regularity and care, so as not to unduly force the soil against any part unduly, and so check the upward growth of young leaves, or, what is worse in connection with the earlier stages, cause "sticks" to become "seated," or bent double. In view of this the soil, previous to the first and subsequent mouldings, is broken down finely, so that it may lie evenly and settle down as evenly and firmly together as possible following rains.
*William Earley, Ilford.*

## Obituary.

WE have to record the death, on December 8, of ALEXANDER AYSON, aged fifty-six, who for the last twenty-seven years fulfilled the duties of Head Gardener to the late General Studd and his eldest son and successor, E. F. Studd, Esq., Oxton Hall, Kenton, Exeter. Mr. Ayson was a good all-round gardener. Orchids at one time were well cultivated, the collection comprising many grand specimens of the most popular varieties. Pansy culture was carried out to a great extent, several hundred varieties of the best in cultivation being grown, his employer being especially fond of this modest flower. He was the raiser of that beautiful Regal Pelargonium, Beauty of Oxton, sent out some years ago by Messrs. Cannell & Son, and which has found its way into every collection. The Coniferæ at Oxton, of which there are many fine specimens, were raised from seed by Mr. Ayson, and he lived to see many of them as perfect specimens as are to be met with. Fruit culture, both indoors and out, together with all the other departments, showed signs of good cultivation.




*STATE OF THE WEATHER AT BLACKHEATH, LONDON,* FOR THE WEEK ENDING WEDNESDAY, DECEMBER 9, 1885.

| Month and Day | Barometer: Mean Reading Reduced to 32° and Deduction from Average of 19 years | Temperature of the Air: Highest | Lowest | Range | Mean for the Day | Departure of Mean from Average of 20 years | Hygrometrical Deductions from Glaisher's Tables 7th Edition: Dew Point | Degree of Humidity, Sat. = 100 | Wind: Average Direction | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|
| Dec. | In. | In. | ° | ° | ° | ° | ° | | | In. |
| 3 | 29.87 | +0.13 | 49.0 | 39.5 | 44.3 | +4.6 | 45.4 | 98 | S.W. | 0.11 |
| 4 | 29.51 | −0.24 | 47.2 | 40.0 | 43.6 | +4.0 | 39.4 | 83 | S.W. | 0.09 |
| 5 | 29.55 | −0.21 | 41.5 | 33.4 | 37.5 | −3.8 | 34.8 | 87 | N.W. | 0.28 |
| 6 | 29.41 | −0.36 | 40.2 | 34.0 | 36.6 | −4.7 | 34.3 | 91 | N.W. / N.N.W. | 0.60 |
| 7 | 29.72 | −0.07 | 39.5 | 34.5 | 37.0 | −4.3 | 33.1 | 86 | E.N.E. | 0.05 |
| 8 | 29.92 | +0.15 | 43.2 | 36.5 | 39.7 | −1.6 | 34.5 | 79 | E.N.E. | 0.00 |
| 9 | 30.11 | +0.33 | 45.0 | 34.0 | 41.0 | +0.3 | 37.0 | 73 | N.W. | 0.00 |
| Mean | 29.73 | −0.01 | 44.1 | 37.3 | 40.7 | −1.3 | 38.5 | 85 | N.W. | 0.53 |

Dec. 3.—Rain in morning; very dull day.
4.—Slight rain from early morning till 9 A.M.; very fine in afternoon; shower of rain about 3 P.M.
5.—Dull day; rain at night.
6.—Fine day; chill.
7.—Dull day; fine.
8.—Very fine day; very cold.
9.—Fine day; slight fall of snow at night.

LONDON: *Atmospheric Pressure.*—During the week ending December 5, the reading of the barometer increased from 29.40 inches at the beginning of the week to 29.65 inches by 9 A.M. and decreased to 29.61 inches by 1 P.M. on the 29th, increased to 30.32 inches by 9 A.M. on the 2d, decreased to 29.66 inches by 9 A.M. on the 4th, increased to 29.82 inches by 9 A.M. on the 5th, and was 29.65 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.91 inches, being 0.45 inch higher than last week, and 0.01 inch below the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 57°.5, on Nov. 30; on Dec. 5 the highest temperature was 41°.5. The mean of the seven high day temperatures was 49°.5.

The lowest temperature was 31°.2, on Dec. 2, on Nov. 30 the lowest temperature was 44°.8. The mean of the seven low night temperatures was 37°.6.

The greatest range of temperature in one day was 18°.8, on Nov. 29; the smallest on Dec. 5 was 8°.1. The mean of the seven daily ranges was 11°.9.

The mean temperatures were, on Nov. 29, 48°.4; on the 30th, 50°.5; on Dec. 1st, 42°.6; on the 2d, 39°; on the 3d, 45°.8; on the 4th, 44°.2; and on the 5th, 37°.9; and these were all above the averages (excepting Dec. 2 and 5, which were 2°.8 and 3°.8 below their averages), by 6°.7, 8°.8, 0°.9, 4°, and 2°.4 respectively.

The mean temperature of the week was 43°.6, being 1° lower than last week, and 2°.3 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 64°, on Dec. 2. The general mean was 58°.3.

The lowest reading of a minimum thermometer placed on grass was 29°.4 on the 22d. The mean of the seven readings was 33°.3.

*Rain.*—Rain fell on six days to the amount of 0.98 inch.

ENGLAND: *Temperature.*—During the week ending December 5, the highest temperatures were 58°.5 at Cambridge, 58° at Truro, 57°.5 at Blackheath; the highest at Sunderland was 51°, at Bolton 51°.6, at Preston and Newcastle 52°. The general mean was 55°.

The lowest temperatures were 30° at Truro, 30°.4 at Wolverhampton, 31°.2 at Blackheath and Liverpool; at Prestont he lowest was 37°, at Bradford 36°.4, at Leeds and Sunderland 36°. The general mean was 33°.6.

The greatest ranges were 28° at Truro, 27°.5 at Cambridge, 26°.3 at Backheath; the least ranges were 15° at Sunderland and Preston, 17° at Newcastle. The general mean was 21°.4.

The mean of the seven high day temperatures was highest at Truro 54°, at Plymouth 53°.6, at Leeds; 51°.5, and was lowest at Sunderland, 45°.7, at Bolton 46°.4, at Liverpool 48°.7. The general mean was 49°.6.

The mean of the seven low night temperatures was highest at Truro, 44°.4, at Plymouth 43°.8, at Bristol 39°.8; and was lowest at Wolverhampton, 33°.7, at Bolton 35°.4, at Hull 36°.4. The general mean was 38°.7.

The mean daily range was greatest at Wolverhampton, 15°.4, at Hull 13°.3, at Nottingham 12°.7; and was less at Sunderland, 7°.3, at Newcastle 9°, at Truro 9°.6. The general mean was 10°.9.

The mean temperature was highest at Truro, 49°.1, at Plymouth 48°.6, at Leeds 45°.2; and was least at Bolton, 40°.8, at Wolverhampton, 41°.3, at Sunderland 41°.9. The general mean was 44°.1.

*Rain.*—The largest falls were 1.88 inch at Bristol, 1.58 inch at Truro, 1.29 inch at Bolton. The smallest falls were 0.13 inch at Newcastle, 0.15 inch at Hull, and 0.18 inch at Sunderland. The general mean fall was 0.75 inch.

SCOTLAND: *Temperature.*—During the week ending December 5, the highest temperature was 53°, at Glasgow; at Dundee the highest temperature was 48°.1. The general mean was 50°.5.

The lowest temperature in the week was 27°, at Glasgow; at Perth the lowest temperature was 34°.9. The general mean was 31°.

The mean temperature was highest at Leith, 43°.3; and lowest at Dundee, 39°.7. The general mean was 41°.8.

*Rain.*—The largest fall was 2.06 inch, at Greenock; the smallest fall was 0.43 inch, at Leith. The general mean fall was 0.91 inch.

JAMES GLAISHER, F.R.S.

## Answers to Correspondents.

*** OUR ALMANAC FOR 1886. *Secretaries of Provincial and Metropolitan Horticultural Societies are particularly invited to send us, as soon as possible, the Dates of their Meetings and Exhibitions during the ensuing year, so as to ensure their insertion.*

ADDRESS: *J. A. de Mar.* Williams & Norgate, foreign booksellers, Henrietta Street, Covent Garden, London.

COWKEEPING BY FARM LABOURERS: *F. B.* The cost is 1*s.*, and it can be obtained from Henry Evershed, Hurstmonceaux, Sussex.

DIARIES: *Ed. Birchall.* We know of no diary specially suited to a gardener.

ERRATA.—In our report of York Ancient Florists' meeting (p. 728), for "Apples and Pears north of the Tweed," read "Apples and Pears north of the Trent."—At p. 715, third line, in Dendrobium speciosum, read "my man" for "my gardener."—On p. 678, col. *c*, in the article on Cattleya Warscewiczii, sixth line, read "1 span" instead of "1 inch."

FERNS: *Broomford.* 1, Now more fully developed this proves to be Adiantum Moritzianum, a large and free-growing form of A. Capillus-Veneris, regarded by some as a distinct species, which is very doubtful. 2, Not in a very satisfactory state, but the smaller more fully fructified pieces seem to be the small pinnuled form of A. Capillus-Veneris said to have been introduced from the Crimea, and sometimes named A. c.-v. var. Hookeri.

ILLUSTRATIONS OF TREES: *R. Coombs.* There is no book of which we are aware that gives accurate drawings of each kind of tree so as to make it available for an artist. The persons who deal in artists' requirements may have sketches of common English trees.

INSECTS: *I. W.* The little moths sent are a species of Tinea, perhaps T. pallescentella. The little maggots sent in decaying vegetable mould are probably their larvæ; but please say in what manner they have attacked your French Beans by a line addressed to Professor Westwood, Oxford.

KEW GARDENS: *G. Parker.*—You must apply to Mr. Smith, Curator, Kew, who would then put the applicant's name on the list. Vacancies are seldom.

MANURE FOR NEWLY LAID TURF: *J. Van Hutberghe.* At any time during the winter you can dress the grassland with sifted loam, wood ashes (one-fourth of the whole), and rotten cow or horse manure may be added, the soil being poor, otherwise the latter is better omitted. The compost should be well mixed before you utilize it. A frosty day should be chosen, so that it can be wheeled on without causing injury to the turf, and be spread thinly—that is, just covering the ground, without hiding the blades of grass. The rains will wash it all in before growth takes place in the spring.

NAMES OF FRUITS: We regret to say that a package, containing several varieties, despatched to our fruit referee, was tampered with *en route*, and we are consequently unable to give the names.

NAMES OF PLANTS: *H. T.* Hakea laurina.—*J. Urquhart.* 1, Eria Dilleni; 2, Adiantum excisum; 3, Acacia armata; 4, A. Riceana; 5, Woodwardia orientale.

PRIMULA: *W. J. H.* Chinese Primrose and Primula sinensis and P. præcitens are synonymous.

RIBSTON PIPPIN AND CORNISH GILLYFLOWER APPLES: *H. G.* You should get these sorts true to name from nurserymen in your county—as Messrs. Lucombe & Pince, and R. Veitch, of Exeter, or of Mr. Scott, Merriott Nurseries, Crewkerne.

SALIX ROSMARINIFOLIA: *C. A. M. C.* This plant has been found in Britain in a few places, but it is stated by most authorities to be North European. It is met with in Sweden.

THE RISE AND PROGRESS OF GARDENING: *W. Scott. My Garden*, by A. Smee, published by G. Bell & Son, York Street, Covent Garden, W.C.; Johnson's *Dictionary of British Gardening*, now out of print.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post-Office, Drury Lane, London, W.C.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

## CATALOGUES RECEIVED.

ALEX. E. CAMPBELL, Cove Gardens, Gourock, N.B.—Hybrid Gladioli.

J. M. THORBURN & CO., 15, John Street, New York, U.S.A.—American Seeds and Choice Gladioli.

CLARKE BROTHERS & CO., 65, Scotch Street, Carlisle—Roses, Fruit Trees, Conifers, Ornamental and Forest Trees,

ROBERT COOPER, 90, Southwark Street, London, S.E.—Wholesale Catalogue.

WAITE, NASH & CO., 79, Southwark Street, London, S.E.—Wholesale Price Current.

WILLIAM FELL & CO., Hexham, Northumberland.—Forest Trees, Roses, Plants, &c.

WILL TAYLER, Osborne's Nursery, Hampton, Middlesex.—Fruit Trees and Roses.

COMMUNICATIONS RECEIVED.—W. H. W. H. B. C. V. L.—Sig. Rovelli—W. P. H. Correvon, Geneva.—H. M., Boston.—W. S. G. R. Julian—E. B. Godefroy Lebeuf.—M. Larsen—G. H. E. R. C.—J. W.—J. S.—A. D. W.—W. Hans Herrenhut.—J. D. H.—H. G.—J. W.—T. B.—R. D. B. T. L.—W. J. M. W. N.—H. E.—J. R. J.

# Enquiries.

*"He that questioneth much shall learn much."*—BACON.

POINSETTIAS NOT FLOWERING.—I shall be much obliged if some of your correspondents will tell me the cause of the leaves that form the bracts getting black and falling off when just unfolding from around the flowers. I have grown a great quantity this year, the plants ranging from 6 inches to 6 feet high; some of the stems are clothed to the pot with healthy foliage, others have from three to eight healthy leaves, but not one plant has perfected a single bract. Would guano-water in a weak state cause it? for they were watered during summer and autumn with it. I shall be glad to get any information as to the means to be adopted to prevent such an occurrence another year, as I am sure something must have gone wrong in the management. They never got dry, but had every attention. *Toki.*

# Markets.

*COVENT GARDEN, December* 10.

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

LARGE consignment of Grapes to hand with a free sale at low rates. English Pines flat, in face of heavy arrivals from St. Michael. Fine samples of Kent Cobs in demand. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0 | 3 0 | Pine-apples, Eng., lb. | 1 0 | .. |
| — Canadian, barl. | 10 0 | 20 0 | — St. Michael, each | 2 6 | 5 0 |
| Grapes, per lb. | .. 0 | 8 2 | Pears, per dozen | .. 0 | 9 1 3 |
| Kent Cobs, 100 lb. | 22 0 | 25 0 | — per ½-sieve | .. 1 | 0 3 0 |
| Lemons, per case | 13 0 | 15 0 | | | |

VEGETABLES —AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, per doz. | 0 6 | .. | Mushrooms, punnet | 1 0 | 1 6 |
| Beans, Kidney, lb. | 1 0 | .. | Mustard and Cress, do. | 0 4 | .. |
| Beet, red, per dozen | 1 0 | 2 0 | Onions, per bushel | 4 0 | .. |
| Broccoli, bundle | .. 0 | 9 1 0 | Parsley, dozen bunch | 2 0 | 3 0 |
| Cabbages, per dozen | 1 0 | .. | Parsnips, per dozen | 1 0 | .. |
| Capsicums, per 100 | 1 0 | 2 0 | Potatos, per cwt | .. 4 0 | 5 0 |
| Carrots, per bunch | 0 6 | .. | .. kidney, per cwt | 4 0 | 5 0 |
| Cauliflowers, per doz. | 2 0 | 3 0 | Salsafy, per bundle | 0 3 | .. |
| Celeriac, per root | 0 3 | .. | Scorzonera, p. bundle | 1 0 | .. |
| Celery, per bundle | 1 6 | 2 0 | Seakale, punnet | .. 2 6 | .. |
| Coleworts, doz bunch | 4 0 | 6 0 | Shallots, per pound | 0 3 | 0 4 |
| Cucumbers, each | ..0 6 | 1 0 | Spinach, per bushel | 4 0 | 0 |
| Endive, per dozen | 1 0 | 2 0 | Sprouts, per pound | 0 3 | .. |
| Herbs, per bunch | .. 0 2 | .. | Spruz, bundle | .. 1 0 | .. |
| Leeks, per bunch | 0 3 | 0 4 | Tomatos, per lb. | .. 0 6 | 1 0 |
| Lettuce, per dozen | 1 0 | 1 6 | Turnips, bunch | .. 0 6 | .. |

POTATOS.—Magnum Bonums, bad trade, 60s. to 80s.; Regents, 60s. to 80s per ton; German Reds, 2s to 2s. 6d. per bag.

PLANTS IN POTS —AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0 | 18 0 | Ficus elastica, each | 1 6 | 7 0 |
| Arbo. vitæ (golden), per dozen | .. 6 0 | 18 0 | Ferns, in variety, per dozen | .. 4 0 | 18 0 |
| — (common), dozen | 6 0 | 12 0 | Foliage Plants, various, each | .. 2 0 | 10 0 |
| Arum Lilies, dozen | 12 0 | 18 0 | Hyacinths, Roman, per pot | .. 1 0 | 1 3 |
| Begonias, per dozen | 6 0 | 12 0 | Marguerite Daisy, per dozen | .. 8 0 | 12 0 |
| Bouvardia, doz | .. 12 0 | 18 0 | Myrtles, per dozen | 6 0 | 12 0 |
| Cineraria, per doz. | 12 0 | 18 0 | Palms in var., each | 2 6 | 21 0 |
| Chrysanth., per doz. | 9 0 | 18 0 | Pelargoniums, scarlet, per dozen | .. 6 0 | 9 0 |
| Cyclamen, 12 pots | 12 0 | 18 0 | Petunias, per dozen | .. 12 0 | 18 0 |
| Cyperus, per dozen | 4 0 | 12 0 | Primulas, single, 12 pots | .. 8 0 | 12 0 |
| Dracæna terminalis, per dozen | .. 30 0 | 60 0 | Pelargoniums, scarlet, per dozen | .. 12 0 | 18 0 |
| — viridis, per doz. | 12 0 | 24 0 | Primulas, single, 12 pots | .. 4 0 | 6 0 |
| Erica, various, doz. | 12 0 | 24 0 | Tulips, 12 pots | .. 8 0 | 12 0 |
| Euonymus, in var., per dozen | .. 6 0 | 18 0 | | | |
| Evergreens, in var., per dozen | .. 6 0 | 24 0 | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abutilon, 12 bunches | 2 0 | 4 0 | Lilium longiflorum, 12 blms. | .. 6 0 | 8 0 |
| Acacia (Mimosa), Fr., per bunch | .. 0 6 | 1 0 | Marguerites, 12 bun. | 2 0 | 4 0 |
| Arum Lilies, 12 blms. | 6 0 | 9 0 | Mignonette, 12 bun. | 1 6 | 3 0 |
| Azalea, 12 sprays | 1 0 | 1 6 | Pelargoniums, per 12 trusses | .. 1 0 | 1 6 |
| Bouvardias, per bun. | 0 6 | 1 0 | — scarlet, 12 trusses | 0 9 | 1 0 |
| Camellias, 12 blms. | 3 0 | 6 0 | Poinsettia, 12 blms. | 4 0 | 8 0 |
| Carnations, 12 blms. | 1 0 | 3 0 | Roses (indoor), per dozen | .. 1 0 | 3 0 |
| Chrysanth., 12 blms. | 0 6 | 4 0 | — Tea, French, doz. | 1 0 | 1 0 |
| — 12 bunches | 4 0 | 12 0 | — red, French, doz. | 1 6 | 2 0 |
| Cyclamen, doz. blms. | 0 6 | 1 0 | Stephanotis, 12 spr. | 6 0 | 8 0 |
| Eucharis, per dozen | 5 0 | 6 0 | Tropæolum, 12 bun. | 2 0 | 3 0 |
| Gardenias, 12 blooms | 4 0 | 6 0 | Tuberoses, 12 blms. | 1 0 | 1 0 |
| Hyacinths, Roman, 12 sprays | .. 1 0 | 2 0 | Tulips, doz. blooms | 1 0 | 1 3 |
| Lapageria, white, 12 blooms | .. 2 0 | 3 0 | Violets, 12 bunches | 1 0 | 1 0 |
| — red, 12 blooms | 1 0 | 2 0 | — Czar, Fr., bunch | 1 0 | 1 6 |
| | | | — Parme, Fr., bun. | 4 0 | 5 0 |

## SEEDS.

LONDON: *Dec.* 9.—Owing to the presence in London of a large number of agriculturists up for the Cattle Show, there was a larger attendance than usual on today's Seed Market. Business, however, continues exceedingly quiet; and, in fact, no great activity is expected until the New Year. Meantime, values all round exhibit considerable steadiness. Rather higher prices are asked for Trefoil. In neither Clovers nor Alsikes is there any quotable change. There is more business now passing in blue Peas and Haricot Beans. Feeding Linseed is firmer. Hemp and Canary seed show no alteration. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

MARK LANE: *Dec.* 7.—Arrivals from abroad having been very moderate, has tended to give some support to prices, but the trade nevertheless was very slack, and that rates are supported is the best that can be said. The flour trade was also quiet, and without change in prices. New Maize was easier. Barley was quiet, and Oats, with fair arrivals, were a slow sale, and in some cases the turn in buyers' favour.

*Dec.* 9.—Wheat and flour were quoted at late rates. Spring corn generally was supported, and Russian Oats were firmer. New Maize was dull.

*Average prices* of corn for the week ending Dec. 5: —Wheat, 31s.; Barley, 30s. 1d.; Oats, 18s. 10d. For the corresponding week of last year:—Wheat, 30s. 10d.; Barley, 31s. 2d.; Oats, 19s. 2d.

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Dec.* 9.—Good supplies of fruit and vegetables, with a good trade at undermentioned quotations:—Pears, 2s. 6d. to 5s., and Apples, 2s. 6d. to 5s. per bushel; Cabbages, 2s. 6d. to 5s. per tally; Savoys, 3s. to 7s. do.; Spinach, 2s. 6d. to 3s. per sieve; Brussels Sprouts, 4s. to 4s. 6d. do.; Cauliflowers, 1s. to 2s. per dozen; Beetroots, 2s. 6d. to 3s. do.; Celery, 6s. to 10s. per dozen bundles; bunch greens, 2s. 6d to 4s. per dozen bunches; ditto Turnips, 3s. to 3s. 6d. do.; ditto Carrots, 2s. 6d. to 3s. do.; ditto Parsley, 1s. to 1s. 6d. do.; Onions, 4s. 6d. to 5s. per cwt.; white Turnips, 40s. to 58s. per ton; Swede do., 25s. to 30s. do.; Carrots, 30s. to 50s. do.; Mangels, 22s. to 25s. do.

STRATFORD: *Dec.* 8.—There was a good supply of produce, and a fair trade was done at the following prices:—Cabbages, 3s. to 5s. per tally; Savoys, 3s. to 7s. 6d. do.; red Cabbage, 3s. to 5s. do.; greens, 2s. 6d. to 4s. per dozen; Cauliflowers, 1s. 6d. to 2s. do.; Mangels, 17s. to 20s. per ton; Swedes, 20s. to 25s. do.; Turnips, 35s. to 60s. do.; Carrots, cattle feeding, 28s. to 45s. do.; do., household, 42s. 6d. to 50s. do.; Celery, 6s. to 12s. per dozen rolls; Apples, 2s. to 6s. per bushel; Spinach, 1s. 6d. to 2s. per sieve; Horse Radish, 9s. to 12s. per dozen bundles.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 8.—Supplies good, and demand slow, at previous rates fully for best samples. Quotations:—Regents, 70s. to 105s.; Magnum Bonums, 50s. to 95s.; Champions, 50s. to 60s.; German, 30s. to 60s. per ton.

COLUMBIA (East London): *Dec.* 9.—There was a good trade at the following quotations:—Reading Hero, 60s. to 70s.; Beauty of Hebron, 60s. to 75s.; Champions, 50s. to 60s.; Victorias, 50s. to 60s.; Regents, 55s. to 65s.; and Magnums, 50s. to 70s. per ton.

STRATFORD: *Dec.* 8.—Magnums, 50s. to 80s.; Regents, 60s. to 80s.; Champions, 45s. to 60s.; Reading Hero, 60s. to 65s. per ton.

*Imports.*—The imports into London last week consisted of 6733 bags from Hamburg, 54 from Rotterdam, 13 from Ostend, 3 from St. Michael's, 905 from Ghent, and 32 cases from Antwerp.

## HAY.

WHITECHAPEL: *Dec.* 8 —The finer weather improved demand, and there was rather more doing at steady prices. Quotations:—Clover, prime, 90s. to 105s.; inferior, 70s. to 85s. Hay, prime, 73s. to 88s.; inferior, 63s. to 67s. Straw, 28s. to 37s. per load.

*Dec.* 10.—A moderate supply was on sale. The trade was quiet except for best hay.

CUMBERLAND (Regent's Park): *Dec.* 8.—With favourable weather trade slightly improved at following rates:—Clover, best, 90s. to 100s.; second, 70s. to 90s. Hay, best, 72s. to 85s.; second, 60s. to 70s. Straw, 30s. to 36s. per load.

STRATFORD: *Dec.* 8.—Clover, 75s. to 110s.; meadow hay, 60s. to 90s.; and straw, 28s. to 36s. per load.

## CATTLE.

METROPOLITAN: *Dec.* 7.—Prime qualities of cattle, which comprised but a very moderate proportion of the supply, cleared readily at steady value, whilst middling and plain descriptions were an exceedingly difficult sale, and a large part of the supply was left unsold. Sheep, of which the supply was light, advanced 2d. per 8 lb., and in some cases more. The calf trade was slow, but choice qualities nominally dearer. Quotations:—Beasts, 3s. 8d. to 4s. 6d., and 4s. 10d. to 5s. 4d.; calves, 2s. to 4s. 10d.; sheep, 4s. 4d. to 4s. 6d., and 4s. 10d. to 5s. 8d.; pigs, 3s. 8d. to 4s. 2d.

*Dec.* 10.—Trade was, on the whole, steady, but not active. Prime beasts were in fair demand, and were quite as dear, but other sorts were weak. Sheep were dull, and previous prices were with difficulty maintained. Calves were quiet, and Pigs rather dearer.

## COALS.

The following are the prices current at market during the week:—East Wylam, 15s. 6d.; Ravensworth West Hartley, 14s. 9d.; Walls End—Tyne (unscreened), 11s. 3d.; Hetton, 17s. and 17s. 6d.; Hetton Lyons, 15s. and 15s. 6d.; Lambton, 16s. 6d. and 17s.; Wea, 15s. and 15s. 6d.; East Hartlepool, 16s. 3d.; South Hartlepool, 15s. 9d.; Tees, 17s. and 17s. 6d.; Haswell, 17s. 6d.; Hulam, 15s. 3d.

**Government Stock.**—Consols closed on Monday, Tuesday, Wednesday, and Thursday, at 99⅛ to 99⅛ for delivery, and 99⅛ to 99⅜ for the account. These quotations are ex div.

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| | s. | d. | |
|---|---|---|---|
| Supplied in Tins, | 1 | 0 | each. |
| ,, ,, | 2 | 6 | ,, |
| ,, ,, | 5 | 0 | ,, |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| ,, ½ ,, | 20 | 0 | ,, |
| ,, 1 ,, | 37 | 6 | ,, |

**Special Prices to the Trade on application.**

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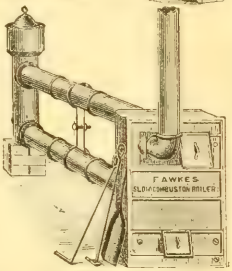
Requires no sunk stokehole; will last all night without attention; will burn house cinders; costs nothing for fuel; is a tenant's fixture; any one can fix it; a domestic servant can stoke it. Price of Boiler to heat:—

**55 feet 4-inch Pipe .. £2 10s.**
**110 feet 4-inch Pipe .. £3 15s.**
**200 feet 4-inch Pipe .. £5 7s. 6d.**

**Complete Apparatus, with 2 rows of 4-inch Pipe, from £4 12s. 6d.**

The most complete apparatus manufactured. Numbers in use all over the country. Full particulars and prices of every sized Apparatus post-free. The only slow combustion apparatus of the kind.

*Beware of incomplete inefficient apparatus, which will not last all night.*




*Specimen Testimonial.*

"I have given your Slow Combustion Boiler a good trial during last winter, and it has done its work in a most satisfactory manner. Your Boilers want but little attention, and consume almost anything."—D. MUNRO, *Gardener, The Chestnuts, Egham Hill, Surrey.*

**CROMPTON & FAWKES, Chelmsford.**

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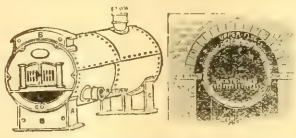
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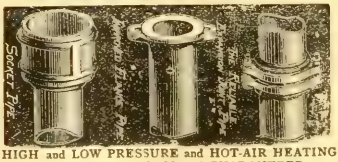
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**Awards:—**

International Exhibition, London—Silver Medal.
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Newcastle-upon-Tyne Horticultural—Very Highly Commended.
Royal Caledonian, Edinburgh—Unanimously Commended.

*The following Gentlemen, Nurserymen, and Hot-water Engineers have already kindly honoured with their approbation and confidence by ordering the "Red Rose," several of whom have also forwarded most complimentary testimonials:—*

H. R. HUGHES, Esq., Kummel Park, Abergele, N.W.
R. C. CLEEHAN, Esq., Burley White House, Chester-le-Street.
J. JONAH SMITH, Esq., Ash Lodge, Watford, Herts.
Rev. R. D. SHAFTOE, The Vicarage, Branxton.
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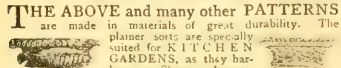
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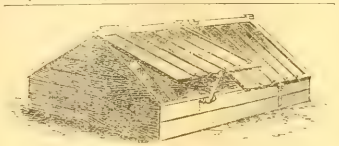
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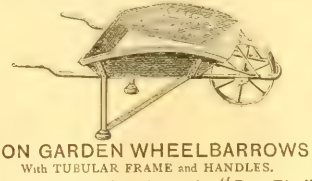
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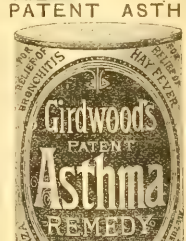
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TO LANDED PROPRIETORS, &c.—A. McINTYRE (late of Victoria Park) is now at liberty to undertake Formation and Planting of New Garden and Park Grounds, and Remodelling existing Gardens. Plans prepared. 115, Listria Park, Stamford Hill, N.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

GARDENER (HEAD).—A GENTLEMAN wishes to recommend his Head Gardener to any one requiring a thoroughly practical man in all branches of the profession. Understands Land and Stock.—A. B., Mr. Woodruffe, News Agent, Ewell, Surrey.

GARDENER (HEAD); age 30.—Mr. MCKAY, Gardener, Maristow, Roborough, S. Devon, can with confidence recommend his Foreman to any Lady or Gentleman requiring the services of a thorough practical Gardener. Good knowledge of Orchids. Been here for two years.

GARDENER (HEAD), to any Nobleman or Gentleman requiring a practical man.—Thoroughly experienced in each branch of the profession. Three years Foreman in present situation. Can be highly recommended from the same.—F. CLATWORTHY, The Gardens, Rufford Abbey, Ollerton, Notts.

GARDENER (HEAD); age 30.—JOHN KETTLE, for the last two years Gardener to Lady Scott, The Hurst, Walton-on-Thames, will be pleased to treat with any Lady or Gentleman requiring the services of a good practical Gardener. Well up in Gardening in all its various branches.—3, Percy Cottages, Walton-on-Thames.

GARDENER (HEAD WORKING).—Age 26, married; thoroughly experienced in Vines, Peaches, Stove and Greenhouse, Flower and Kitchen Garden. Good references. Abstainer.—F. T. G., 5, Dyer's Lane, Richmond Road, Putney, Surrey.

GARDENER (HEAD WORKING).—C. W. COOK, Rendcomb Park Gardens, Cirencester, will be pleased to recommend his Foreman to any Lady or Gentleman requiring the services of a thoroughly industrious energetic efficient all-round Gardener.—Apply as above.

GARDENER (HEAD WORKING), where others are kept; age 27, single at present.—A GENTLEMAN wishes to recommend his Gardener as above. Well up in Vines, Melons, Cucumbers, &c. Previously Second with a Nobleman.—C. A., 16, Birkbeck Place, West Dulwich, London, S.E.

GARDENER.—Age 35, married, no family; thoroughly practical in all branches. Total abstainer. Highest testimonials from his employers.—Apply either to the Hon. H. W. FITZWILLIAM, or to J. BENNETT, The Lodge, Malton, Yorkshire.

FOREMAN (INSIDE), in a good establishment.—Age 25; two years Foreman in present situation. Can be recommended by present and previous employers.—E. J. SMITH, Caldecote Gardens, Buneaton.

FOREMAN, or first-class JOURNEYMAN.—Age 22; well up in Fruit Department (Inside and Out), and General Gardening; eight years' experience. Can be well recommended.—CHARLES PRIOR, Puddletown, Dorchester

NURSERY FOREMAN, married.—Wanted by a young man a situation as above. Well up in all branches. Sixteen years in the trade.—F. F., St. John's Hill, Waterford.

**To Nurserymen.**

PROPAGATOR.—Twelve years' experience in the Propagation of Clematis, Roses, Rhododendrons, &c.—W. BABBAGE, American Nursery, Bagshot.

PROPAGATOR and GROWER.—Age 26; Pot Plants, Bloom, &c.; knowledge of other branches. Good references. Could Manage Small Nursery or Indoor Department.—G. P., Marchwood, Southampton.

JOURNEYMAN.—Married, with family. Has had fifteen years' experience in Budding and Grafting Roses, Clematis, Conifers, Fruit and other Trees; Packing and general Nursery Work. Honest, sober, and industrious.—E. P. G., Messrs. Ewing & Co., Sea View Nurseries, Havant, Hants.

MANAGER, or SHOPMAN.—Married; fifteen years' practical experience in the Wholesale and Retail Trade. First-class references.—B. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

**Seed Trade**

SHOPMAN.—Twelve years' experience in every department. Good references.—J. C., 2, Merton Street, Grimsbury, Banbury.

SHOPMAN.—Age 27; good knowledge of the Trade in all its branches. Understands Book-keeping. First-class references.—T. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SHOPMAN, or ASSISTANT.—Eleven years' experience. Thoroughly up in all departments of the Trade, Field and Garden Seeds, Bulbs, Implements, &c. Fair knowledge of Plants.—A. B., 124, Holland Street, Glasgow.

**To the Seed Trade.**

SHOPMAN (ASSISTANT).—Age 24; Scotch. Eight years' experience. Thorough knowledge of the Trade. First-class references.—SEEDSMAN, 25, St. Patrick's Road, Drumcondra, Dublin.

TRAVELLER, HEAD SHOPMAN, or BOOK-KEEPER.—Thirty years' experience in every branch of the Seed Trade.—W. T., Messrs. Nutting & Sons, Seed Merchants, Southwark Street, London, S.E.

**To the Seed Trade.**

CLERK (CORRESPONDING or GENERAL).—Six years' experience. Good reference.—C. A., Mr. Alex. Caruth, Grosvenor Street, Bridge Street, Chester.

**Seed Trade.**

ASSISTANT.—Five years' good experience. Highest references.—W. BRUCE, Nursery Cottage, Green Lane, Old Swan, Liverpool.

TO THE SEED TRADE.—A young man (age 23) requires a situation in the Seed Trade. Four years' experience in first-class firms. Has been twelve months in England, at John Laing & Co.'s, with whom he is at present. Good references.—E. ROMAIN, 9, Lower Winchester Road, Catford, London, S.E.

TO THE SEED TRADE.—Situation desired by an intelligent young Man (age 21) where a thorough knowledge could be obtained. Three years' experience in Office Work, two of which in a prominent London Nursery and Seed Establishment. Moderate salary. First-class references.—MYOSOTIS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SITUATION REQUIRED by young man (age 26); eleven years' experience. First-class references.—R. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

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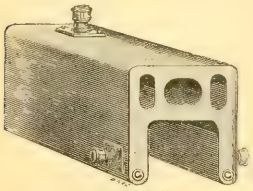
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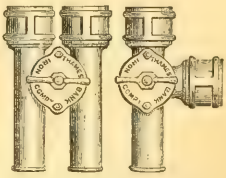
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1885.

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G. C., Dec. 12. 1885.

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THE

# GARDENERS' CHRONICLE.

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## IMPORTANT NOTICE.

TO ADVERTISERS.

*In consequence of the Christmas Holidays, the GARDENERS' CHRONICLE for next Saturday, December 26, will be published on Thursday the 24th inst. at 2 p.m. Advertisements for that Number must reach the Office not later than WEDNESDAY morning, the 23d inst.*

GARDENERS' CHRONICLE OFFICE TELEGRAMS.

*NOTICE to Correspondents, Advertisers, Subscribers, and Others. The Registered Address for Foreign and Inland Telegrams is "GARDCHRON, LONDON."*

SUBSCRIBERS TO *THE GARDENERS' CHRONICLE*, *particularly in Scotland and Ireland, who experience any difficulty in obtaining their Copies regularly, are requested to communicate with the Publisher,*

*W. RICHARDS, 41, Wellington Street, Strand, W.C.*

*THE GARDENERS' CHRONICLE* IN AMERICA.

The Subscription to America, including Postage, is $6.35 for Twelve Months.

Agent for America:—C. H. MAROT, 814, Chestnut Street, Philadelphia, U.S.A., to whom American Orders may be sent.

PORTSMOUTH CHRYSANTHEMUM, FRUIT and FLOWER SHOW.

The Committee have decided to hold the next Show on THURSDAY and FRIDAY, November 11 and 12, 1886. In addition to nearly ONE HUNDRED POUNDS in MONEY PRIZES, it is proposed to offer for competition a SILVER CUP, value £25, for Thirty-six Cut Blooms.

F. POWER, Hon. Sec.

OUR GARDEN and FLOWER SEED LISTS for 1886 have now been Posted to all Customers, and should any not have received them, they will oblige by writing us, and Copies shall be at once sent.

HURST AND SON, 152, Houndsditch, London, E.

Now Ready,

THE GARDEN ANNUAL for 1885. Contains a Complete List of over 7 00 Country Seats, Occupiers, and Gardeners in the United Kingdom; a number of New Names have been added to the Gardeners' List during the past season. There is also the best Trade List published, corrected to date. Price 1s., by post 1s. 3d.

Of all Nurserymen, Booksellers, and at 37, Southampton Street, Strand, London, W.C.

*NOTICE.—The GARDENERS' CHRONICLE for next week, DECEMBER 26, will contain a Full Page Ink-photo of "WROXTON ABBEY," the Seat of Lord North.*

To the Trade.

NUTTING AND SONS' Wholesale CATALOGUE of Garden and Flower Seeds, containing Lists of Novelties for 1886, has been Posted to all their Customers. If not duly received, please inform them, and another shall be sent. 106, Southwark Street, London, S.E. Registered Telegraphic Address—"NUTTING, LONDON."

LILIUM AURATUM (Large Home-grown). Very Grand Bulbs, 15s., 24s., and 36s. per dozen.
Extra Varieties, 2s. 6d., 3s. 6d., and 5s. each.
Rare Indian LILIES, WALLICHIANUM, NEILGHERRENSE, and the rare POLYPHYLLUM. LILIES and BULBS of all kinds.
NEW PLANT AND BULB COMPANY, Colchester.

Nymphæa alba rosea!

A. M. C. JONGKINDT CONINCK begs to offer strong 1-year Seedlings of this beautiful Hardy Rose coloured WATER-LILY. Price on application.
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LARCH, 1-yr. 1-yr., 5s. 6d.; 1 to 1½ foot, 10s. 6d.; 1½ to 2 feet, 16s.; 2 to 3 feet, 20s.; 3 to 4 feet, 25s.; 4 to 5 feet, 32s. 6d. per 1000. Nett cash. Ground wanted. Trade prices on application. Apply at once.
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The Grand New Regal Pelargonium,

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J. LEWIS AND SON, Newtown Nurseries, Malvern.

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Cash with order.
JAMES WALTERS, Rose Grower, Mount Radford, Exeter.

To the Trade

WAITE, NASH, AND CO. have Posted their General CATALOGUE to all their Customers. If not received another Copy will be sent on application.
73, Southwark Street, London, S.E.

Quicks Whitethorn-Quicks.

WOOD AND INGRAM have an extensive stock of the above, 2-yr. transplanted, which they beg to offer, at 6s. per 1000. Sample on application.
The Nurseries, Huntingdon. N.B. Cash or reference.

SQUELCH AND BARNHAM, North Row, Covent Garden, London, W.C., REQUIRE any quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

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SQUELCH AND BARNHAM. ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

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WM. PERRY, Jun., Smithfield Market, Manchester, is prepared to RECEIVE CONSIGNMENTS of GRAPES, TOMATOS, CUCUMBERS, CUT FLOWERS, &c. Account Sales and Cash sent upon day of Sale. Bankers' and Trade references.

Notice to Senders of Choice Fruit and Flowers.

WISE AND RIDES are prepared to RECEIVE ABOVE GOODS IN QUANTITY. Baskets, Boxes, Labels, and instructions for packing supplied. Account Sales daily.
WISE AND RIDES, Fruit and Flower Salesmen, Fruit Market, and 101, Flower Market, Covent Garden, London, W.C.
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WANTED, GREENHOUSE RHODODENDRONS—large plants. State size and price to E. COOLING, Mill Ash Nursery, Derby.

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To the Trade.

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CHARLES SHARPE AND CO., Seed Merchants, Sleaford.

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MORRISON BROTHERS, Aberdeen.

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LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

TELEGRAMS.—"PAUL, CHESHUNT," is Registered by and suffices for PAUL AND SON, The "Old" Nurseries, Cheshunt. The great all-round Hardy Plant Nursery.

100 Herbaceous and Alpine Plants for 25s.

RICHARD SMITH AND CO.'S selection as above contains a most interesting and valuable assortment of beautiful and Hardy Plants for the Border or Rockwork, which produce flowers and render the garden attractive all through the year. New LIST of sixty-four pages free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ABIES DOUGLASII GLAUCA.—Undoubtedly one of the finest introductions of late years, being hardier, more compact, and not apt to lose its leader like the common Douglasii. 2 to 3 feet, 12s.; 3 to 4 feet, 18s. per dozen. A LIST of other hardy Pines free on application.
MORRISON BROTHERS, Aberdeen.

ROSES—(Dwarf Gloire de Dijon), exceptionally fine stuff, and common Moss Rose. Prices on application to
THOMAS S WARE, Hale Farm Nurseries, Tottenham London.

Cedrus Deodara

H. LANE AND SON have the finest Stock in the country—fine, well-grown Trees, with good roots, from 3 to 12 feet and upwards, to offer cheap. CATALOGUE free.
The Nurseries, Berkhamstead, Herts.

AZALEA MOLLIS—AZALEA MOLLIS.—A few thousands are still disposable; very fine plants, full of buds, 50s. per 100. HYDRANGEA PANICULATA GRANDIFLORA, 30s. per 100. At the Ornamental Plant Nurseries.—JULES DE COK, Ghent, Belgium.

Roses—Roses—Roses.

WOOD AND INGRAM being large Growers of the above, beg to offer the leading Hybrid Perpetual varieties, at the following reduced prices for cash with order. Package free. Standards, 12s. per dozen, 90s. per 100; Dwarfs (on Manetti), 6s. per dozen, 35s. per 100.
The Nurseries, Huntingdon.

The Pear Congress.

PAUL AND SON have Fruiting Espalier Trees of most of the finest sorts shown, and of many of the best Novelties. See the Trees.
The "Old" Nurseries, Cheshunt, N.

LAXTON'S NEW FRUITS and VEGETABLES.—Eight First-class Certificates in 1885. Send for particulars of New Pear, Beans, Potatos, Tomatos, Apples, Strawberries, and other good Novelties to
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FOR SALE, SEAKALE, large Forcing Roots; ditto, plantable. For prices, &c., apply to
E. WILSON SERPELL, Nurseryman, Plymouth.

Seed Potatos.

H. AND F. SHARPE will be pleased to make Special Offers of their choice selected stocks of SEED POTATOS, comprising all the best kinds in cultivation. Purchasers of a quantity treated liberally.
Seed Growing Establishment, Wisbech.

## SALES BY AUCTION.

### Sale this Day, and Monday Next.

DUTCH BULBS.

Two final Sales of the Season.—1300 Lots.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., this day (SATURDAY) and also on MONDAY NEXT, December 19 and 21, at 12 o'Clock precisely each day, thousands of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, lotted to suit Large and Small Buyers.

On view morning of Sale, and Catalogues had.

**Important Sale of Choice Double Camellias and** AZALEA INDICA, compact plants, 1 to 2½ feet, well set with bloom-buds; 400 Standard and other ROSES, selected FRUIT TREES, hardy CONIFERÆ, SHRUBS, and AMERICAN PLANTS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, the above, at the City Auction Rooms, 38 and 39 Gracechurch Street, E.C., on MONDAY, December 21, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68 Cheapside, E.C.

### Tuesday Next.

SPECIAL SALE of ORCHIDS in Flower, affording an excellent opportunity to Gentlemen desirous of furnishing their Conservatories for the Christmas holidays

MESSRS PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, December 22, at half-past 12 o'Clock precisely, about 200 lots of ORCHIDS in Flower, from various collections. Among t them will be found :—

| | |
|---|---|
| Odontoglossum Alexandræ, several beautiful varieties | Cypripedium insigne, forty-five flowers |
| „ Alexandræ flaveolum, twenty flowers | „ „ Maulei |
| „ Rossii rubius, upwards of a hundred flowers | Oncidium nigratum |
| „ „ „ many fine varieties | Dendrobiums |
| | Lælia anceps, splendid plants |
| | Oncidium Jonesianum |
| | And many others. |

On view morning of Sale, and Catalogues had.

### Wednesday Next.

IMPORTANT for CHRISTMAS DECORATION.

3000 LILIUM AURATUM, unusually fine bulbs, from Japan; LILY of the VALLEY, and other Plants in Flower; also beautifully grown FERNS and PALMS, from an English Nursery; a consignment of CAMELLIAS and AZALEAS, from Belgium; retarded and Dwarf ROSES, a choice assortment of Hardy English grown LILIES and BULBS, SPIRÆAS, Christmas ROSES, LILY of the VALLEY, DUTCH FLOWER ROOTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 23, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

### Wednesday Next.—3000 Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on WEDNESDAY NEXT, December 23, 3000 unusually fine LILIUM AURATUM, just received from Japan in splendid condition.

On view morning of Sale, and Catalogues had.

### Monday Next.—(Sale No. 7047.)

5000 splendid BULBS of LILIUM AURATUM from Japan, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 21, at half-past 12 o'Clock precisely, an importation of 5000 splendid Bulbs of LILIUM AURATUM, just received from Japan, in very fine condition, several thousand TIGRIDIA GRANDIFLORA, T. CONCHIFLORA, and choice mixed GLADIOLI from New Jersey, 10,000 LILY of the VALLEY Crowns for Forcing, a consignment of Dwarf ROSES from France, 500 Roots of EUCHARIS AMAZONICA, and several hundreds of first-class DUTCH BULBS, Barr's DAFFODILS, &c.

On view morning of Sale, and Catalogues had

### Wednesday Next.—(Sale No. 7049.)

ROSES, FRUIT TREES, SHRUBS, BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 23, at half-past 12 o'Clock precisely, several hundred first class Standard, Dwarf, and Climbing ROSES; Pyramid, Trained, and other FRUIT TREES; SHRUBS and CONIFERS, HARDY BORDER PLANTS, of sorts; and a great variety of DUTCH BULBS for present planting, &c.

On view morning of Sale, and Catalogues had.

### To Gardeners and Florists.

FOR SALE, a SMALL NURSERY, with Jobbing Business. Lease thirty-nine years; three Greenhouse Pits, two Cottages let off at £37 per annum; Ground 70 feet by 250 feet. Rent £45. Good position. Same hands twenty years. Stock as it is. Six miles from London.

J. HOLDEN, High Street, Ealing.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDENERS and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

### To Landed Proprietors, &c.

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

WILLIAM CLAPHAM,

*Garden Architect and Natural Rock-Builder,*

SHAW HEATH, STOCKPORT.

Ferneries, Grottos, and Rockwork, in common with Landscape Gardening, to suit any locality.

ALL PERSONALLY CARRIED OUT.

Silver Medal awarded Preston Guild, 1882.

PALMS.—A few hundreds of splendidly-grown healthy Seaforthia elegans, Latania borbonica, Corypha australis, Phœnix reclinata, Areca lutescens, and Euterpe edulis, 12 inches high, 42s. per dozen, 25s. per 100; same sorts, 20 inches high, 12s. per dozen, less quantity 1s. 3d. each.

FERNS.—Strong, healthy, and handsome Lomaria gibba, Adiantum cuneatum (Maidenhair), Pteris tremula, Pteris serrulata, Pteris serrulata cristata, Pteris cretica albo lineata, Pteris argyrea, out of small pots, 12s. per 100, 3s. per dozen.

GARDENIA INTERMEDIA (true), 6s. per dozen.

Packages and parcels post-free.

GARDENER, Holly Lodge, Stamford Hill, London, N.

S. BIDE begs to call special attention to his extensive stock of—

FRUIT TREES (Dwarf-trained)—Apricots, Nectarines, Peaches, Apples, Pears, Cherries, &c.

FOREST TREES—Larch and Scotch Fir, Ash, Hazel, &c.

ROSES—Standard and Dwarf. ASH—Seedling, 1-yr.

ASPARAGUS—For Planting; for Forcing.

The whole being second to none in the Trade. CATALOGUES of General Nursery Stock, with Prices, &c., on application to

S. BIDE, Alma Nursery, Farnham, Surrey.

SPECIAL OFFER.

Fine samples of

MYATT'S PROLIFIC EARLY ASHLEAF KIDNEY POTATOS, £5 5s. per ton. Where three or more tons are ordered, £5 per ton.

SUTTON'S EARLY ASHLEAF KIDNEY POTATOS, £5 6s. per ton. Nett cash. Free on rail here.

W. W. JOHNSON AND SON, Seed Potato Growers and Merchants, Boston, Lincolnshire.

SPECIAL CHEAP OFFER. — PINES, Austrian, from 2 to 6 feet; LARCH, from 2 to 4 feet; FIR, Scotch, 12 to 24 inches; ELM, 3 to 4 feet, 4 to 5 feet; ASH, Common, 2 to 3 feet, 3 to 4 feet, 4 to 5 feet; BIRCH, 1½ to 2 feet, 2 to 3 feet, 7 to 8 feet, 8 to 10 feet; CHESTNUT, 1 to 2 feet; HORNBEAM, 2 to 3 feet, 3 to 4 feet, 7 to 8 feet, 8 to 9 feet; MAPLE, 4 to 10 feet; OAK, English, from 1 to 10 feet. POPLARS, Lombardy, 7 to 8 feet, 8 to 10 feet, 10 to 12 feet. POPLARS, Americana, 7 to 8 feet, 10 to 12 feet; PRIVET, Evergreen, 2 to 3 feet, 3 to 4 feet, good; PRIVET, Oval-leaf, 2 to 3 feet, 3 to 4 feet, fine; QUICK, THORN, 4, 5, and 6-yr., fine; SYCAMORES, 3 to 4 feet, 4 to 5 feet, 7 to 9 feet, 8 to 9 feet. AUCUBAS, 2 to 3 feet; BERBERIS AQUIFOLIA, BOX, CUPRESSUS, various; ELDERS, Gold; CURRANTS, flowering; HOLLIES, in great variety; IVIES, in sorts; JUNIPERS, LABURNUMS, LAURELS, assorted; RHODODENDRONS, several hundred thousand of all sorts and sizes—beautiful stuff; RETINOSPORAS, YEWS, Common and Irish. For Price LIST, &c., apply to

I. AND C. MATTHEWS AND SON, The Nurseries, Melton, Stoke-on-Trent.

FRANCIS R. KINGHORN begs to offer, in splendid stuff and at low prices the following:—PLANES, 10 to 12 feet, straight stems and good heads; Canadian and Round-leaf LAURELS, 2 to 4 feet, bushy; Oval-leaf PRIVET, 4 to 5 feet, bushy; Irish IVY, in pots, 5 to 6 feet, many shoots; SWEET BRIER, in pots, 2 to 4 feet. Double GORSE, in pots, 2 feet, bushy; BERBERIS DARWINII, in pots, 2 to 3 feet, bushy; LILACS, 5 to 6 feet; RIBES, 4 feet.

Sheen Nurseries, Richmond, Surrey.

TELEGRAPHIC ADDRESS—"GILBERT, STAMFORD."

The gem of the season—Gilbert's Late White BROCCOLI, Victoria—in open competition beat all the Models, all the Giants, and all the Queens, besides seven dishes of Cauliflower, Awarded a Special First-class Certificate the Royal Horticultural Society. This Broccoli is without doubt pre-eminently the finest in commerce. Not thimblesful, but in ¼ oz. packets, 2s. 6d. each.

A. F. BARRON MELON, Green-flesh, First-class Certificate, and true TELEGRAPH CUCUMBERS, 1 dozen seeds, per packet, 1s. each

CHOU DE BURGHLEY, a pure stock, and Universal SAVOY, in ½ oz. packets, 1s. each.

Gilbert's selected ONION SEED, saved from all the best shaped and finest Bulbs, Magnum Bonum, White Spanish, and Bedfordshire Champion, 9d. per packet.

PRIMROSE SEED, crossed with Harbinger, from a very fine collection, 1s. 6d. per packet.

Border CARNATIONS, all colours, a very hardy and good stock, 5s. per packet.

Apply to R. GILBERT, High Park Gardens, Stamford.

### To the Trade.

ROBERT COOPER'S Wholesale CATALOGUE of Garden and Flower Seeds has been Posted to all their Customers. If not received, please inform him and another shall be sent.

90, South-wark Street, London, S.E.

Telegraphic Address—"ROBERT COOPER, LONDON."

### New Chrysanthemums.

G. STEVENS, F.R.H.S., St. John's Nursery, Putney, Surrey, S.W., is now Booking Orders for his New CHRYSANTHEMUMS, which will be sent out in February next, good strong Plants :—

MAIDENS BLUSH.—Fine Japanese, with broad flat florets, forming a full, large, handsome bloom. Fine for Exhibition. First-class Certificate Royal Horticultural Society, Nov. 10, and National Chrysanthemum Society, November 11, 1885. Price 2s. 6d. each. Cash with order from unknown correspondents.

MARTHA BEDDING.—A fine Japanese variety. Golden-yellow, shaded reddish-brown, large handsome flower. Fine for Exhibition. First-class Certificate National Chrysanthemum Society, 1885. Price 2s. 6d. each.

CHRYSANTHEMUM CATALOGUE of all the best Exhibition Varieties on application.

CUT FLOWERS.

LILY of the VALLEY (very fine).

ROMAN HYACINTHS.

TULIPS (in var.).

POINSETTIAS.

Can offer a regular supply at reduced prices.

Any quantity for Christmas.

TURNER BROS., Florists, Green Hill Nursery, Allerton, Liverpool.

CHRYSANTHEMUMS.—Five Hundred varieties, including the best of the Exhibition, Decorative, Early Flowering, and Single Varieties. Strong Cuttings now ready, buyer's selection, 12s. 6d. per dozen, 10s. per 100; Plants, 2s. 6d. per dozen, 18s. per 100; ready, end of December. Many of the best growers in the country are supplied from this collection. For the grand new sorts, see CATALOGUE, one stamp.

WM. ETHERINGTON, Manor House, Swanscombe, Kent.

### Fruit Trees, Grape Vines, and Roses.

HUGH LOW AND CO. offer, of fine quality and best varieties, Trained and Untrained APPLES, APRICOTS, CHERRIES, DAMSONS, NECTARINES, PEACHES, PEARS, PLUMS; ROSES, a fine collection, Dwarf on Manetti; ROSES Half Standards and Standards; ROSE GLOIRE DE DIJON, open ground, very strong, in pots; also ROSE NIPPERTOS, strong, in pots. VINES, BLACK ALICANTE, BLACK HAMBURGH, GROS COLMAR, and other fine sorts; Planting and Forcing Canes. Low prices on application.

Clapton Nursery, London, E.

SNOWDROP BULBS.—Double or Single. Special low offer on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

ANEMONE JAPONICA ALBA.—Having an immense stock can offer fine strong plants at 12s. per 100. Very useful for cut flowers. Cash.

G. PHIPPEN, Reading.

ASPARAGUS, 3-yr. old, extra strong stuff, 20s. per 1000. Sample free. Cash.

G. PHIPPEN, Reading.

OLD CRIMSON CLOVE, well rooted, with side shoots. 12s. per 100. Cash. Samples free.

G. PHIPPEN, Reading

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. Plants may *now* be knocked out of pots and sent by parcel post.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

LÉNAULT-HUET, NURSERYMAN, Ussy, Calvados, France, begs to offer the following FOREST TREES, FRUIT TREES, and EVERGREENS, in large quantities :—

Maple, Hornbeam, Quicks, Privet, Hazel, Beech, Ash, Holly, Oak, Lime, Spanish Chestnut, Quince, Cherry, Maha eb and Avium; Common Apple, St. Julien, Myrobulan; Spruce, Fir, Larch, Pine, Arbor-vitæ. Can be obtained as seedlings and transplanted from one to four years at the cheapest prices.

Samples and CATALOGUES free on application

SCANDINAVIAN TREE SEEDS FOR SALE

PINUS ALBA, of Danish Harvest 1885

PINUS MONTANA UNCINATA, of Danish Harvest 1885.

PINUS SYLVESTRIS, of Swedish Harvest 1883.

PINUS SYLVESTRIS, of Norwegian Harvest 1885.

First quality. Apply to

AUG. SOHT, Norregade 14, Copenhagen.

PONTEY'S SUPERFINE LATE WHITE BROCCOLI.—This is one of the finest stocks of Late White Broccoli ever offered, producing large heads of a creamy white colour, and coming in for use as late as June. See following extract :—

From the *Gardeners' Chronicle and Agricultural Gazette*, London :—"MONSTER BROCCOLI.—A few days since, Mr. Kessell, of the Combe, Penzance, who has been a Broccoli grower for upwards of half a century, and was one of the first to get the Early Broccoli of Cornwall into the London and Northern Markets, cut two monster Broccoli, which together weighed 30 lb. They were like Snowballs, as Pontey's Late White Willow. The huge scales at the smelting house had to be called into requisition to ascertain the weight of the plants."

Retail Price, 2s. 6d. per ounce. Special quotations to the Trade. Apply to

E. WILSON SERPELL, 21, Cornwall Street, Plymouth.

PINUS ARISTATA.—"A correspondent who has tried the nursery trade in vain" for the above Pine, may surely find it in many nurseries, but nowhere so cheap and so good as with

MORRISON BROTHERS, Aberdeen, who can give fine healthy plants, 6 to 9 inches, at 1s.; 9 to 12 inches, at 2s. 6d.; and 3 to 4 feet at 7s. 6d. each.

A LIST of all hardy Pines sent free on application.

ANDRE LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London is very moderate. Medal of Honour at the Universal Exhibition at Paris in 1878.

Orders must be addressed to Messrs. WATSON AND SCULL, 93, Lower Thames Street, London, E.C.

FOREST TREES.

To be sold a great bargain to clear the ground.

500 CHESTNUT TREES, 10 to 12 feet.

200 LIMES, 6 to 12 feet.

200 WALNUT TREES, 6 to 12 feet.

A few thousand strong MANETTI.

No responsible offer will be refused.

Apply to Mr. COOPER, Calcot Gardens, Reading.

TRAINED PEACH TREES.

Some of the best sorts, well trained and strong.

Apply to Mr. COOPER, Calcot Gardens, Reading.

PYRAMID APPLE TREES.—Fine grown Trees of the best sorts, including—Blenheim Orange, Cellini, Cox's Orange Pippin, Golden Reinette, King of the Pippins, Lord Suffield, Keswick Codlin, Warner's King, Wellington, &c.

Apply to Mr. COOPER, Calcot Gardens, Reading.

### The New Raspberry.

LORD BEACONSFIELD.

(A Seedling.)

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.

Strong Canes, £3 per 100; 9s. per dozen.

Usual allowance to Trade, 5 per cent. discount for prompt cash. A. FAULKNOR, Inkpen, Hungerford.

IMANTOPHYLLUM (CLIVIA) GRANDIFLORA.

Healthy 1-yr. seedlings, in twenty sorts of the best varieties—Lindeni, Van Houttei, maxima, robusta, Parkinsoni, &c.

**One Guinea.**

Delivered, free by Post, to all countries, for Cash with Order.

ED. PYNAERT, Ghent, Belgium.

CHOU DE BURGHLEY SEED for SALE —12 lb. of this year's saving. Price 2s. 6d. per pound. Smallest quantity sent out, 3 lb.
H. CHAPMAN, Linkfield Lane, Isleworth, Middlesex.

**To the Trade.**

HOME-GROWN VEGETABLE AND FIELD SEEDS.
H. AND F. SHARPE'S Wholesale CATALOGUE has been sent out, and they will feel obliged to any one in the Trade who has not received a Copy if he will inform them, in order that one may be forwarded.
Seed Growing Establishment, Wisbech.

LILIUM AURATUM, Special consignment. Splendid sound firm Bulbs, 6s., 9s., 12s., and 18s. per dozen, 45s. to 100s. per 100; Double TUBEROSES, extra fine, 10s. and 12s. 6d. per 100; Giant LILY of the VALLEY, Imported Crowns, 5s. 6d. and 6s. 6d. per 100; ditto, immense Clumps, 12s. and 15s. per dozen; SPIRÆA JAPONICA, 3s.; 4s. per dozen; GLADIOLUS BRENCHLEYENSIS, 8d. per dozen, 4s. 6d. per 100; AZALEAS and CAMELLIAS, English grown, from 18s. to 42s. per dozen. All other Plants and Roots equally cheap.
MORLE AND CO., 1 and 2, Fenchurch Street, E.C.

**New Chrysanthemums.**

MESSRS. W. AND G. DROVER are now Booking Orders for their Three New JAPANESE CHRYSANTHEMUMS. First-class Certificates, Royal National Chrysanthemum Society, December 9, 1885:
WHITE DRAGON, a pure white flower of the Dragon type.
BICOLOR, orange-red, the reverse orange.
GLORIOSUM, pale yellow, in the style of Agreements de la Nature.
Good EXHIBITION VARIETIES, price 5s. each, to be sent out in March. Orders filled in rotation.
W. AND G. DROVER, Florists, Fareham.

SPECIAL OFFER. — HORSE CHESTNUT, 2 to 3 feet, 3s. 6d. per 100; LEYCESTERIA FORMOSA, strong, 22s. per 100; ABIES DOUGLASII, 1 to 2 feet, 25s. per 100; PINUS CEMBRA, 2 to 3 feet, 25s. per 100; P. STROBUS, 3 to 4 feet, 30s. per 100; LAUREL, SPURGE, 9 to 12 inches, 16s. per 100; GOOSEBERRIES, fine sorts, 4 yr., 8s. per 100; PEARS, fine, 4 to 5 feet, 6s. per dozen; PLUMS, fine, 4 to 5 feet, 6s. per dozen.
MACLEOD AND CAMERON, Inverness.

EDINBURGH APPLE CONFERENCE.—Admirers of our splendid collection of Fruit at the above show are reminded that Trees in all forms can be supplied direct, or through the Edinburgh Nurserymen.
GEORGE BUNYARD AND CO., The Old Nurseries, Maidstone.

SEAKALE for Forcing. — Excellent large Crowns, 90s. per 10.0; under 500, 10s. per 100.
A quantity of strong 4-year-old Forcing ASPARAGUS, and 3-year-old Champagne RHUBARB Roots,.
Some thousands of strong 3-year-old Black CURRANT Bushes, of the best varieties.
Price on application.
Orders to be accompanied by cheque or P.O.O.
ALFRED ATWOOD,
Grower, 51, Shillington Street, Battersea, S.W.

## ORCHIDS A SPECIALTY.

The stock at the Clapton Nursery is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent. Inspection invited.
Three span-roofed houses of PHALÆNOPSIS in variety.
The Glass Structures cover an area of 246,000 super. feet.
HUGH LOW AND CO., Clapton Nursery, London, E.

## THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

*THE COMMITTEE beg to GIVE NOTICE that they have secured permanent Offices at*

**No. 50, PARLIAMENT STREET, WESTMINSTER, S.W.,**

*and it is respectfully requested that all communications may be addressed there.*

*By Order,*
EDWD. R. CUTLER, Sec,
*November* 3, 1885.

**FOREST TREES,**
**FRUIT TREES,**
**PARK TREES,**
**SHRUBS, ROSES, &c.**

One of the LARGEST and BEST-GROWN STOCKS IN THE KINGDOM. Price List and full particulars FREE on application.
*Special cheap quotations to large buyers.*

THOMAS KENNEDY & CO.,
SEED and NURSERY ESTABLISHMENT,
106 and 108, HIGH STREET,
DUMFRIES, N.B.

# GENUINE SEEDS.

## JAMES VEITCH & SONS

BEG TO ANNOUNCE THAT THEIR

**CATALOGUE of GARDEN and FLOWER SEEDS for 1886,**

CONTAINING

LISTS of CHOICE VEGETABLE and FLORAL NOVELTIES,

HORTICULTURAL IMPLEMENTS, AND OTHER GARDEN REQUISITES,

*Is now ready, and can be had, post-free on application.*

ROYAL EXOTIC NURSERY, CHELSEA, LONDON, S.W.

## HENDER'S STRAINS
OF
**PETUNIAS and BALSAMS**
are the finest offered.

HENDER'S SINGLE PETUNIA, 1s. and 2s. per packet.
" SINGLE FRINGED PETUNIA, 2s. 6d. per packet.
" DOUBLE FRINGED " 2s. and 3s. 6d. per packet.
" BALSAMS, 8 vars., separate, 2s. 6d.; mixed, 1s. 6d.

For nearly 40 years Petunias have been our special study, and we feel sure the Seed now offered will turn out even better than those in past years
HENDER AND SONS, The Nursery, Plymouth.
NOTE.—The above can be Ordered through any Seedsman.

# HOOPER'S NEW SPOTTED GLOXINIAS.



This splendid strain of Gloxinias we are quite sure is not surpassed, and we do not believe is equalled. We have received numerous prizes and awards for them, and the highest compliments of growers and the trade; and we are able to say that many Continental strains, now being offered at high prices, are every way inferior.

We refrain from saying much about the unparalleled beauty of the colours of these flowers—their novel and exquisite spottings, and their grand substance and finish. They must be seen to be fully appreciated.

**SEEDS,**
**2s. 6d. per Packet.**



HOOPER & CO., COVENT GARDEN, LONDON, W.C.

# FERNS A SPECIALTY.

THE LARGEST STOCK IN THE TRADE.

ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1s.

SMALLER CATALOGUE, of over 1200 species and varieties, free on application.

Special Descriptive "LIST OF NEW, RARE, AND CHOICE FERNS," free.

Descriptive "LIST OF HARDY NORTH AMERICAN FERNS," free.

## W. & J. BIRKENHEAD,

FERN NURSERY, SALE MANCHESTER.

# ROSES.

20 Acres of grand plants in best varieties.

BUSHES, H.P., 8s per dozen, 60s. per 100. } Packing and Carriage FREE
STANDARDS, H.P., 15s. per dozen, 105s. per 100. } for Cash with Order.

CLEMATIS (80,000), 12s to 24s. per dozen.
ROSES, in Pots (80,000) 15s. to 36s per dozen.
FRUIT TREES (74 Acres).
VINES (6000) 3s 6d. to 10s. 6d.
ORCHARD HOUSE TREES, "Fruiting," in Pots.
STRAWBERRIES, 4s. per 100; Forcing, 15s to 25s. per 100.
ASPARAGUS, 2s. 6d. per 100; Forcing, 12s. 6d. per 100.
SEAKALE, strong Forcing, 16s per 100.
EVERGREENS, CONIFERS ORNAMENTAL TREES (or Acres).
FLOWERING SHRUBS, 8s. per dozen.
FOREST TREES, HEDGE PLANTS, UNDERWOOD, &c.

# BULBS

Of Finest Quality.

*Descriptive LISTS of above and SEEDS free.*

## RICHARD SMITH & CO.,

WORCESTER.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

# EXPIRY OF LEASE.

In consequence of the Lease of 9 acres of our Nursery Ground being near an end, we beg to offer the following NURSERY STOCK at exceptionally low prices:—

LARCH, true native, 1-yr. 1-yr. transplanted, 9 to 12 inches, 12 to 18 inches, 18 to 24 inches, 2 to 3 feet, 3 to 4 feet
FIR, Scotch, true native, 1-yr. seedlings, 2-yr. seedlings, 1-yr. 1-yr. transplanted, 2-yr. 1-yr. transplanted, 3-year-old two ce transplanted, 2-yr. 2-yr. transplanted, 9 to 12 inches, 12 to 18 inches, 18 to 24 inches.
SPRUCE, 2 yr and 3-yr. seedlings, also 6 to 9 inches, transplanted.
ALDER, 1-yr 1-yr. transplanted.
ASH, 1-yr. seedlings, 1-yr. 1-yr. transplanted.
BEECH, 1 yr. seedlings.
BIRCH, 1 yr seedlings, and 12 to 18 inches.
BRIER, Dog, 1-yr. seedlings.
CHESTNUT, Spanish, 1-yr.
HAZEL, 1-yr. seedlings.
ELM, Scotch, 12 to 18 inches, 18 to 24 inches, 2 to 3 feet.
OAKS, 1-yr. seedlings.
PINUS AUSTRIACA, 1-yr. seedlings, 6 to 9 inches, 9 to 12 inches, transplanted.
,, LARICIO, 2-yr. seedlings, 6 to 9 inches.
,, MARITIMA, 2-yr. seedlings, 1-yr. 1-yr.
POPLARS, of sorts, 1½ to 8 feet, transplanted.
SYCAMORE, 1-yr. seedlings, 1-yr. 1-yr. transplanted, 12 to 18 inches, 18 to 24 inches.
ASH, Mountain, 18 to 24 inches, 2 to 3 feet, 4 to 5 feet.
LIMES, from Livers, 2 ft., 3 ft., 4 ft., 5 ft., and upwards
RHODODENDRON PONTICUM, 6 to 9 in. and upwards.
,, Hybrids, named, finest varieties, from 2-yr. grafted and upwards, in bud.
ABIES DOUGLASII, 1-yr. 1-yr. transplanted, 6 to 9 inches, 9 to 12 inches, 12 to 18 inches, 18 to 24 inches
,, MENZIESII, 2-yr. seedlings, and 2 yr. 1 yr. transplanted.
ARAUCARIA IMBRICATA, 4 to 6 inches, 6 to 9 inches, transplanted.
CUPRESSUS L. NANA COMPACTA, 6 to 9 inches, 9 to 12 inches
,, LUTEA, 6 to 9 inches, 9 to 12 inches.
PICEA NOBILIS, 6 to 9 inches, 9 to 12 inches.
,, NORDMANIANA, 12 to 18 inches.
TAXUS ELEGANTISSIMA, all sizes.
,, FASTIGIATA AUREA, all sizes
,, Irish, common, 12 to 18 inches, and upwards.
ROSES, Dwarfs, per 1,000 or 100.
FRUIT TREE STOCKS, seedling and transplanted.

*The above lots are in fine condition, and samples and prices, with specially low quotations for large quantities, may be had on application to*

R. & A. MORRISON,
THE NURSERIES, ELGIN.

# FRUIT. FRUIT. FRUIT.

*SEE NEW CATALOGUE.*

APPLES, PEARS, PLUMS, CHERRIES.—All the finest varieties.—Pyramids, 9s. and 12s. per dozen; Standards, 12s. per dozen; Dwarf-trained, 15s. and 18s. per dozen.

CURRANTS.—Black, Red, White, 12s. per 100, 2s. and 2s. 6d. per dozen.

RASPBERRIES, in variety, 12s. per 100; Northumberland Fillbasket, 6s. per 100.

GOOSEBERRIES, 15s. and 20s. per 100, 2s. 6d. and 3s. per dozen.

STRAWBERRIES.—All the most reliable croppers. Strong runners, 2s. 6d. per 100, in 3½-inch pots, 10s. per 100; in 5-inch pots, for forcing 25s. per 100; Laxton's New King of Earlies and The Captain, 2s. per dozen

# ROSES. ROSES.

*See our New Catalogue.*

The finest H.P. varieties, 6s per dozen, 40s. per 100.
Tea scented and Noisettes, 15s per dozen; 100s. per 100.
Beautiful Mosses, 6s. per dozen
Climbing varieties, for Rockeries, Arbours, &c., 6s p. doz.
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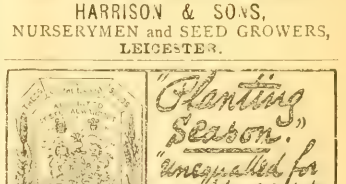
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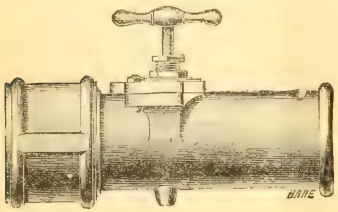
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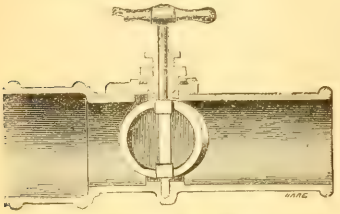


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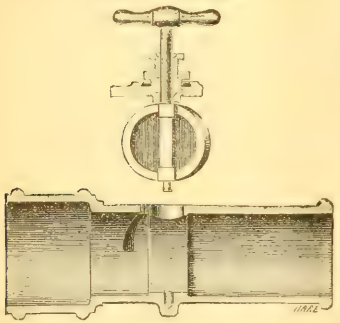
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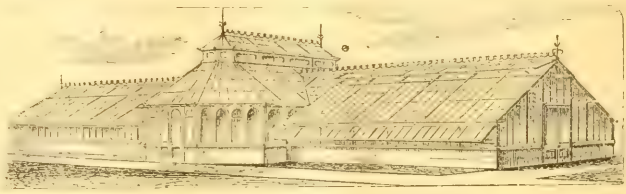
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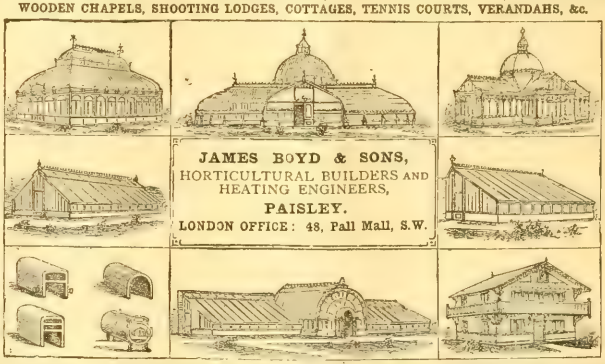
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THE

# Gardeners' Chronicle.

*SATURDAY, DECEMBER* 19, 1885.


## CHRISTMAS PLANTS.

THE use of certain evergreens in this country for Christmas decoration gives no general idea of the extent to which plants are associated with the great Christian festival. With us at the present time there seems to be no limit to the plants that may be used, and of late years almost anything and everything that happens to be green at this season of the year is pressed into the service for Christmas decoration. At one time, and this not so very long since, Holly, Ivy, and Mistleto were the principal plants used, the first and the last of these being considered absolutely necessary; now, however, the Laurel, the Fir, the Yew, the Laurustinus, and others are equally used, and flowers of any kind that can be persuaded to blossom at this period of the year vie with the Christmas Rose (Helleborus niger), always in great demand at this season. Though some plants are more especially dedicated to Christmas than others in consequence of their more immediate association with Our Lord or with the Virgin Mary, the tradition that all plants rejoice at Christmas in commemoration of His birth affords some reason for an indiscriminate use of such as are in leaf, flower, or fruit out-of-doors at this season.

The Christmas Rose just referred to is one of those which so flowers during the winter and early spring months. Its connection with Christmas, however, seems to be due to the period of flowering rather than to any relation with the Christian festival, notwithstanding that the plant is sometimes known as Christ's Herb, and in France and Germany as the Rose de Noel, and Christwurzel respectively.

The Rose of Jericho is a plant of a very different character and history from the Christian Rose. It is an annual plant, the Anastatica hierochuntica of botanists, and belongs to the natural order Cruciferæ. It inhabits the deserts of Arabia and Egypt, and, after withering, the spreading branches roll themselves up into a ball, and the whole plant is detached from the sand in which it grows and blown about by the wind, the branches expanding again with the first rainfall. At times these plants are blown out of the loose sand in such quantities before the wind that it is with much difficulty a horseman can proceed. The plant is sometimes called Rose of the Virgin or Mary's Flower, and it is said to have first expanded or blossomed at the birth of Our Lord; that it closed at the Crucifixion, opening again at Easter; in consequence of which it has been called Resurrection Flower.

Besides this, the capsular fruits of Mesembryanthemum trifolium, from South Africa, and the entire plant of Selaginella lepidophylla, are often called by the name of Rose of Jericho. In the case of the Mesembryanthemum the fruit, which is about three-quarters of an inch in diameter, opens in the form of a star when wet, closing again as it dries; and the Selaginella in its fresh state forms a flat rosette, which closes up in the form of a ball when dry.

Very few words need be said on the Holly, so well known is the plant in connection with Christ-

mas decorations. The common name Holly, or Holme, is derived from the Anglo-Saxon Holign, or, as some writers assert, from the old Norse Hulfr. It has also been called Holy tree, in consequence of its use at this time of year—a name easily corrupted from Holly. The use of Holly is said to have been "derived from the Romans, who were in the habit of sending boughs to their friends during the festival of the Saturnalia, which occurred about the same period; and, the Oaks being then bare of leaves, the priests obliged the people to bring in boughs of Holly and evergreens."

The practice of decorating houses with Holly seems to have been introduced by the early Roman Christians, and this practice became in course of time connected with the Christian faith. The prickly character of the Holly leaf is suggestive of its reputed power in driving away evil spirits, and in many parts of the Continent Holly branches are cut on Christmas Eve and hung up in houses and stables for this purpose. The prickles of the foliage, the blood-red colour of the berries, and the word "holy," from Holly, are all suggestive of Christian associations, and consequently opposed to the witches or evil spirits.

In Germany the Holly is known as Christdorn, as it is supposed to have formed part of the crown of thorns used at the crucifixion of our Blessed Lord. Many curious superstitions are connected with the Holly both in this country and on the Continent, and it is valued according to the abundance or scarcity of the fruits or berries. The present season is an exceptional one for its very large crop, many of the finest trees and even the clipped hedges in the Royal Gardens, Kew, being thickly studded, and in some cases laden with dense clusters of bright scarlet berries. The Holly, besides being found naturally in copses and woods in this country, is found also in other parts of Europe, from Southern Norway to Turkey and the Caucasus, and also in Western Asia.

The Sainfoin (Onobrychis sativa), though a plant that could not at the best of times be used for decorative purposes, still less at this time of year, is to some extent associated with the feast of the Nativity, for we read that in early times it was called Holy Hay, and a French legend says that whilst the infant Saviour was lying in the manger a spray of rose-coloured Sainfoin was found among the dried grass and herbs upon which he laid, when the Sainfoin suddenly opened its flowers and formed a wreath around his head, greatly to the surprise of the Blessed Virgin.

The Apple is connected with Christmas in many ways besides that of furnishing a dessert fruit for the Christmas table. A few notes on this head will suffice to prove this. In the West of England an ancient custom still prevails of saluting the Apple trees on Christmas Eve. The ceremony varies somewhat in different districts; processions, however, are mostly made to one of the principal orchards, where a representative tree is selected and saluted, cider being sprinkled over it, and some lines sung breathing hope in the full bearing of the tree in the coming year. At the conclusion a dance is made around the tree, and the party finish up at the farmhouse with draughts of cider. In Sussex on Christmas Eve, or between that and Twelfth Day, the custom still exists of wassailing the Apple trees, which proceeding is somewhat similar to the above, except that most, if not all, the trees are visited in turn.

In Derbyshire it is believed that if the sun shines through the Apple trees on Christmas Day an abundant crop of fruit is ensured:—"In a Roumanian legend, the infant Jesus, in the arms of the Blessed Virgin, becomes restless, will not go to sleep, and begins to cry. The Virgin, to calm the Holy Child, gives him two Apples. The infant throws one upwards, and it becomes the moon; he then throws the second, and it becomes the sun. After this exploit the Virgin Mary addresses him, and foretells that he will become the Lord of Heaven."

The Cherry seems to have been specially dedicated to the Blessed Virgin, for tradition says that before the Saviour's birth she asked St. Joseph to gather for her some fruits that hung in clusters on a tree, and being refused, the Cherry tree immediately bent its branches downwards to enable her to gather the fruits herself.

The tradition connected with the Glastonbury Thorn is so well known that it will be scarcely necessary to repeat the story in detail, it will suffice to say that, when St. Joseph of Arimathea arrived in this country, he selected Glastonbury as the site for a church, and while preaching there stuck his staff—a dried branch of Hawthorn—into the ground, whereupon it immediately grew, producing buds and flowers, and in course of time forming a large bush or small tree with a branching trunk which regularly flowered on Christmas Day, and thus commemorated the feast of the Nativity. The tree was mutilated by a Puritan in the time of Elizabeth, the man receiving as a reward for his bigotry an affliction of blindness in one eye, caused by some of the prickles thus striking him. A branch of the Glastonbury Thorn was often carried in procession at Christmas time, up to the reign of Charles I. The tree was, however, cut down during the civil war, but plants were raised from the branches.

Regarding the history of the Glastonbury Thorn since the middle of the last century, Folkard says:—"When the new style was introduced in 1752, the alteration, which consisted of omitting eleven days, seems to have been very generally disliked by the mass of the people, the use which was made of the Glastonbury Thorn to prove the impropriety of the change is not a little curious. The alteration in the Christmas Day, which was held that year and since on a day which would have been January 5, was particularly obnoxious, not only as disturbing old associations, but as making an arbitrary change from what was considered the true anniversary of the birth of Christ. In several places where real or supposed slips from the Glastonbury Thorn existed, the testimony of the plant against the change was anxiously sought on the first Christmas Day under the new style. As the special distinction of the Thorn arose from its supposed connection with the great event commemorated on that day, it was argued that it must indicate the true anniversary, and that its evidence would be conclusive on the subject. The event of one of the references (at Quainton, in Buckinghamshire) is thus recorded in the *Gentleman's Magazine* for 1753:—"Above 2000 people came here this night (December 24, 1752, N.S., being the first Christmas Eve under the new Calendar), with lanthorns and candles, to view a Thorn tree which grows in this neighbourhood, and which was remembered (this year only) to be a slip from the Glastonbury Thorn, that it always budded on the 24th, was full blown next day, and went off at night. But the people finding no appearance of a bud, it was agreed that December 25, N.S., could not be the right Christmas Day, and accordingly they refused going to church or treating their friends as usual. At length the affair became so serious that the ministers of the neighbouring villages, in order to appease the people, thought it prudent to give notice that the old Christmas Day should be kept holy as usual. The slips of the Thorn seem to have been everywhere unanimous in this opposition to the new style." Two trees that blossom during the winter months are said to still exist at Glastonbury Abbey.

A curious tradition is connected with the Juniper in relation to the infant Christ. The Virgin is said to have fled with the babe from Herod's soldiers, the rustling and crackling of the Chick Peas and Brooms during the flight betrayed them. A friendly Juniper tree extended its branches and gave shelter to the mother and child. A blessing was pronounced on the Juniper by the Virgin, while the Chick Peas and Brooms, being the objects of her displeasure have ever continued to rustle and crackle. In consequence of this blessing the Juniper is venerated in Italy, and branches of it are used on Christmas Day for the decoration chiefly of stables and cattle sheds.

Regarding the Star of Bethlehem (Ornithogalum umbellatum), though its common name would seem to associate it closely with the Nativity it would appear to derive its name from its pretty white star-like flowers, being likened to that star which announced the birth of the Saviour. It has been thought by some writers that the bulbous roots of this plant formed the dove's dung mentioned in the 6th chapter of the 2 1 book of Kings, the plant being abundant in Palestine, where, in spring, the white flowers are conspicuous on the hillsides. It is certain that the bulbs were at one time used for food in Syria, and also in early times in Italy, being dried, ground into meal, and mixed with flour for making bread.

It is unnecessary to lengthen this paper with mere references to plants which, though connected with Our Lord or the blessed Virgin, are not closely associated with the Nativity; but in conclusion we might add to those already mentioned the Galium verum, popularly known as Our Lady's Bedstraw, from the tradition that it was this plant that filled the manger at Bethlehem in which the infant Saviour was laid. *John R. Jackson, Museum, Kew.*

# New Garden Plants.

## SCHISMATOGLOTTIS NEOGUINEENSIS, *N. E. Brown. n. sp.*

This is the pretty foliage plant that was described and figured in *L'Illustration Horticole*, 188, vol. xxvii., pl. 380, under the name of Colocasia neoguineensis, Linden (to which genus it does not belong), and I find it cultivated at Kew under this name, as well as under that of Schismatoglottis variegata (which is a very different plant), so that it no doubt exists in other gardens under these names. Having examined the flowers I find it is a true Schismatoglottis, and although the name it will now have to bear is not an enticing one, yet from a gardener's point of view the plant itself is attractive. In habit it is not so closely tufted as some of the species, the rhizome being more creeping; the leaves are cordate ovate, and conspicuous by their cheerful bright green colour, handsomely blotched with pale yellowish-green. The following is a description of the plant:—

Glabrous. Rhizome creeping. Petioles 9—12 inches long, terete, sheathing at the base, light green, darker towards the base, with a very faint glaucous tinge. Blade of the leaf 8—9 inches long, 5—5¾ inches broad, ovate acute, deeply cordate at the base with a rather narrow sinus gaping outwards in a recurved line; the basal lobes are slightly unequal, one being rather more triangular in outline than the other, both are obtusely rounded; upper surface bright green, marked in a very irregular manner with large pale yellowish-green blotches. Inflorescence solitary in the axils of the leaves, the scapes are 1½—3 inches long, enclosed in the sheaths of the petioles. Spathe pale greenish, with a narrowly ellipsoidal obscurely trigonous tube 1 inch long, and an acuminate limb 1½ inch long. Spadix 1¾ inch long; female part cylindric, slightly tapering upwards, ½ inch long, ovaries pale greenish-white, oblong trigonous, one-celled, with 2—4 (usually 3) parietal placentas bearing several ovules, the upper ones much depressed, and passing into a few neuter organs at the constriction of the spathe tube, stigma sessile; the obconic male part and slightly tapering, obtuse, barren terminal portion, form together a stout milk-white clavate mass, ¾ inch long and 4—4½ lines thick at the middle; the barren portion is densely packed with smooth clavate neuter organs. A native of New Guinea, introduced into cultivation by Mr. Linden about the year 1879. *N. E. Brown.*

### CYRTANTHUS HYBRIDUS.

I learn from Mr. Bull that he has also raised this plant from a cross between the same parents, but that his plants are slightly different in colour from those raised by Sir Trevor Lawrence's gardener. It is interesting to find that a cross between the same two species, made in different places and by different persons, should have produced the same result. This is of course what one ought to expect, but I do not remember to have seen any similar case recorded beyond that of Tacsonia Andersoni given by the Editor of this paper, in vol. xxiii., p. 736 (June 6, 1885), though possibly others could be added. The name, by the way, was by some mistake published as Cyrtanthus hybrida on p. 391 of the present volume of the *Gardeners' Chronicle*; it should be C. hybridus. *N. E. Brown.*

## THE HOULLETIAS.

The species of Houlletia, although not requiring great heat, cannot be said to be cold-house plants in winter; it is therefore better to regard them as cool intermediate-house plants all the year round, and to select for them a moist shady corner of the Cattleya-house. The species are all showy and attractive when well-grown, the following being an enumeration of the species in cultivation:—

*H. Brocklehurstiana.*—This was the earliest introduced of the Houlletias, it having flowered with T. Brocklehurst, of Macclesfield, in 1842. It has the same habit as the variety here illustrated (fig. 173), but is a still stronger grower. Flowers yellow, barred and blotched with reddish-brown.



Fig. 173.—Houlletia odoratissima: flower of natural size, plant reduced.

*H. chrysantha* is also of the same habit as H. odoratissima. It is a beautiful species, with golden-yellow flowers, the sepals being yellow at the backs and blotched with brown on the insides; lip dark yellow.

*H. Lowii.*—This is very distinct, its flowers being very unlike the H. Brocklehurstiana section, and more resembling those of a Peristeria. They are white, and very wax-like in appearance. Flowered in October, 1874, by Messrs. Hugh Low & Co.

*H. odoratissima* (fig. 173).—The noble fragrant flowers of this species constitutes it one of the handsomest. They are often 3 inches across, sepals and petals yellow, veined with brownish-orange; lip white, tipped with yellow. Our illustration was taken from a plant in the gardens of Sir Trevor Lawrence.

*H. picta.*—This pretty species flowered with Bishop Sumner, at Farnham Castle, in 1876. Flowers yellow, barred with red; lip with two curved horns.

*H. vittata.*—Messrs. Loddiges, of Hackney, received this plant from Schomburgh, and it flowered with them in 1842. It resembles a smaller form of H. Brocklehurstiana. Yellow, streaked with deep chocolate.

*H. Wallisii.*—This, like H. Lowii, is unlike the rest of the species in appearance, as its flowers seem to partake of the cup-like form of the Acineta. In colour they are yellowish-white, often dotted with red. *J. O'Brien.*

## FERNERIES.

It is to be pitied that the houses used for growing Ferns are now filled with hardly any varieties except those adapted for cutting. In going through gardens you generally come across one house devoted to nothing else but Maidenhair Ferns. It surely ought to be a principle that every plant-house should be more or less of a conservatory—I mean, have some eye-pleasing grouping, something beyond mere rows of pot plants on ascending staging. In the case of Ferns particularly is any such nurseryman's arrangement annoying and quite unnecessary. The excellent and pretty method of growing Adiantums in soil held to the wall of a house by wirework is not so commonly adopted as it should be. Where walls have been thus covered there is usually so ample a supply of fronds for cutting that space can be given to the cultivation of many exquisite gems of Ferndom, which to a large enough proportion of utilitarian professional gardeners are unknown quantities. I do not know what Mr. Letts, Lord Zetland's gardener at Aske, thinks, but I question if, in his whole collection of show plants, there is anything prettier than a large Gleichenia rupestris glaucescens. To repeat the opening sentence, an employer is to be pitied who would rather have a row of table decoration plants in preference. Let the *dilletanti* turn their affections to the decoration of their fireplaces, where there is ample scope for dainty devices and conceits, and cease to make Ferns and Palms flaccid in an odour of luxury which they cordially hate.

Little ferneries, intended primarily to supply cut fronds, can be rendered very attractive by growing Ferns of quite a different habit among the Adiantums, such, for instance, are Osmunda palustris, the young sprays of which are very graceful and of a delightful ruddy tint; Woodsia polytrichoides, Goniophlebium appendiculatum, and Asplenium nobile and speciosum. The Goniophlebium has the young fronds beautifully veined, and the two Aspleniums are worthy of culture both on the grounds of uncommon growth and natural beauty. The fronds and pinnæ of speciosum are covered thickly with short hairs, and nobile is much prettier than the Fennel Fern, which it resembles. Lovers of the curious ought by no means to be without the rare Lomaria l'Herminieri; this is the Fern that makes such a feeble attempt to imitate tree growth, and looks by the side of even such as L. gibba a puny dwarf. A plant twenty years old in the nursery of Messrs. Veitch, of Exeter, is only now about a foot high; the fronds, notwithstanding, are very beautiful, the young ones assuming a crimson hue, much deeper than that of Osmunda palustris.

It is regretable that the subordinates in many gardens seem to think the same as their chiefs. Having remarked to one that his Ferns looked healthy, and asked why his master did not grow other kinds besides Adiantum farleyense and cuneatum, the reply was, "Not a bit of good to us; we only want those we can cut." But even if a gardener has an employer who is totally devoid of interest in his greenhouses, it is quite within his power to make his ferneries something above the average of what can often be seen in the houses of a working florist with little or no capital. *C. A. M. C.*

## BERRY-BEARING PLANTS.

(*Continued from p. 74°.*)

Several species of Vaccinium are sufficiently distinct and ornamental to justify their being recommended for admission to our gardens. Of these our native Red Whortle or Cowberry, V. Vitis-idæa, with its bright glossy leaves, terminal racemes of pale red or pink flowers, which, under favourable circumstances, are produced very abundantly, and succession of dark red berries renders it one of our prettiest and most desirable of carpet or marginal plants. The berries, when undisturbed, remain on the plant for several months after becoming ripe, their deep red colour contrasting strangely with the glossy green Box-like foliage. There is a variegated form in cultivation with pretty straw-coloured foliage, which is both a distinct and choice rock plant. V. myrtillus, the Whortleberry, or Bilberry; V. uliginosum, the Bog Vaccinium; and the Cranberry, V. oxycoccus, are all more or less ornamental native species, and whether in flower or fruit are worthy of a corner in the bog or American garden. The latter, with its slender, thread-like branches and conspicuous red fruit, when seen trailing over some damp rocky ledge is especially effective.

Shepherdia canadensis and S. argentea, the Buffalo Berry, are both ornamental-fruited shrubs, the latter in particular having such an intense silvery hue in its foliage as to be very striking, especially where associated with darker foliaged plants. The berries, which ripen in September, are in size about as large as our red Currant, of a deep scarlet, and produced in continued clusters along the branches and twigs of the plant. They are acid, but rich in taste, and are much relished in America, where they are known under the name of Buffalo Berries, Rabbit Berries, and, particularly by the Indians, Beef Suet. It should be remembered that, as the plant is dicecious, those of opposite sexes should be planted in close contiguity, or, better still, portions of the staminate engrafted upon the pistillate plant, thereby insuring the production of berries. This shrub delights in moist cool situations, although in soil of average dryness it succeeds well, and is dwarfer in growth; and for the foreground of ornamental shrub groups the light silvery foliage and edible scarlet fruits render it at all times a desirable plant. In S. canadensis the leaves are not so ornamental, and the yellowish flowers are succeeded by small orange-red berries.

The different Roses are all handsome in a berry-bearing stage, perhaps the finest in this respect being R. rugosa, whose large orange-red hips, that are produced freely enough during the autumn months, contrast strangely with the bristly stems and bold rugose foliage. In R. spinosissima there is a marked difference to the latter in colour of fruit, these being very dark; in fact, almost black when fully ripe. R. lucida and R. cinnamonea bear showy crimson berries; while R. villosa, with its long prominent bracts, is usually well covered with bright red fruits.

Aucuba japonica when laden with its large and conspicuous scarlet berries is at once one of our most beautiful as well as attractive shrubs. Until of late, in consequence of the absence of male plants the production of berries on the Aucuba was of rare occurrence, but now with care in placing plants of opposite sexes in contiguity heavy crops of fruit are produced year by year—indeed this regular production of berries is somewhat remarkable, its fruit-bearing propensity exceeding even that of the Pyracantha, and that is saying a good deal. The conspicuous mottled foliage also adds to the plant's beauty, and renders it a desirable acquisition for placing in good-sized clumps in front of Laurels or other dark foliaged and larger growing shrubs.

Of the Butcher's Broom, Ruscus, several species are well worthy of cultivation as ornamental-fruited plants, and of these R. hypoglossum, a South European species, when grown in a cool, half shady shrubbery recess, is a distinct and effective plant. The large red Cherry-like fruit, produced on the upper side of the flattened branches (cladodes), and supported by the slender thread-like stem, gives to the plant an appearance as uncommon as it is pretty. For mass planting this dwarf evergreen shrub should be used extensively, but being somewhat tender the more sheltered corners of the shrubbery will suit it best. It also grows luxuriantly when used as a carpet for half standard Rhododendrons, the amount of shelter thus afforded seeming to produce perfect development of both fruit and flower. The Alexandrian Laurel, R. racemosus, from the extreme grace and beauty of its foliage—indeed, of the whole plant—is also worthy of select situations. In this species the flowers are in terminal racemes, but the berries are seldom produced in such quantity as to render them an attractive feature of the plant.

Eugenia Ugni, a dwarf, branching, Myrtle-like shrub, when covered, as it usually is when favourably situated, with its showy red berries, is sure to attract attention. As a wall plant we have found it to do best, the warmth and protection thus afforded causing it to flower and fruit well. A variety with yellow or creamy variegation, and small delicate Peach-like flowers, is also worthy the attention of those looking out for ornamental, foliaged small-growing shrubs. *A. D. Webster.*

# FORESTRY.

## WORK FOR DECEMBER.

(*Concluded from p. 717.*)

THINNING.—General forest thinning may now be pushed on, hedgerow trees removed, and dead branches pruned from conspicuous trees in the park and grounds. In thinning trees a well-grounded knowledge of the principles of vegetable physiology, and the general habits of trees, is very necessary for the successful execution of this important branch of arboriculture. Than a thorough knowledge of the art of thinning there is undoubtedly no branch of forest management of greater importance in the successful rearing of timber trees for profit. When conducted on rational principles, and carried on gradually, timber rearing, even with the present low prices of wood generally, is fairly remunerative—at least, much more so than where a hap-hazard system of management is adopted. In thinning remove first of all the inferior and unhealthy trees, and in young plantations look more to the future value of the timber than to such as is to be taken down. In mixed plantations it is also well to retain, as far as possible, such trees as are found to be doing best on the various soils and situations for the permanent crop. Avoid, more especially in exposed situations, opening up the woods too much at one time, serious damage often resulting from a sudden rush of air in newly thinned plantations, and to prevent which it is always advisable to leave the outer row or rows of trees thicker than those in the interior. Judicious pruning may be said to be productive of similar results in our woodlands to that of timely thinning, and should in all cases go hand in hand. The removal of rival leaders and straggling side-branches which cause an undue preponderance of these on one side of the tree should therefore be corrected, dead or twisted branches removed, and unsightly wounds dressed over with tar or paint. As soon as felling is finished remove the timber to the sides of clearance roads, where it may be lotted for sale, each species of tree occupying a distinct lot, measured and valued, the particulars being recorded as a convenience at the time of sale. Firewood and branches should also be removed, the former lotted in about cartload size in each, and the latter converted into faggots for firelighting; or, should they prove worthless for such, burned on the ground, thus preventing the hibernation of injurious insects, and preserving a tidy appearance of the woodlands. When the plantation has been cleared of all these, broken walls and fences should be at once made right, ditches cleared of all fallen rubbish, and ruts and inequalities on clearance roads levelled down and sown with grass seeds in early spring.

### NURSERY WORK.

Few duties in connection with nursery management seem more simple and easily performed than the lifting of plants, yet how often do we find this done in a slovenly careless manner!—roots broken and strained, as well as unduly exposed to the drying influences of the atmosphere. In well-managed nurseries all these should be carefully avoided, the plants being lifted, not pulled, from the ground, and immediately "sheughed" until wanted for use. By careful attention to lifting, and never allowing the roots to become dry, the plants receive little or no check by transplanting, but soon become established in their new abodes and make rapid progress; whereas, on the other hand, when carelessly lifted, and allowed to become dust-dry before planting, their chances of success are limited to a very small degree, loss and disappointment being the result.

### GENERAL WORK.

Fencing, hedging, draining, and general ground improvements, may now, during suitable weather, be carried on, while the making and repairing of roads and walks will also require attention. Metalling that had been conveyed to suitable positions during summer may now be laid on, blinded over with a slight coating of gravel or screenings, and heavily rolled down after wet weather. Previous to putting on metalling it is in all cases advisable to have the surface of the road slightly loosened by picking, thus, as it were, forming a bed for the stones, and into which they soon become firmly pressed down and united by traffic and the timely application of a heavy roller. Pay attention to all tree-guards, as horses now become troublesome; and see that rabbit-proof nettings are serving the purpose for which they were intended, that vermin are not molesting specimen trees, or committing damage amongst the stock in newly formed plantations. Clear woodland drains and ditches, the shoals of flying leaves and broken twigs being apt to cause extra work during blusterous December. As faggots are made cart them home to the shed used for the reception of such; prepare firewood, and cart home all unsaleable wood for the manufacture of charcoal. *A. D. Webster, Penrhyn Castle, North Wales.*

### WOOD SALES IN KENT.

The great underwood and plantation sales now being held in Kent are going off very badly. The depression in prices is most severe in the better class of woods from which hop-poles are mostly supplied. The fall in the price of hop-poles in consequence of the low value of Hops is quite unprecedented. For the best woods of Mid-Kent the biddings have been extremely slow, and fully 30 per cent. under last year's prices. *Journal of Forestry.*

# THE PEAR CONFERENCE.

WE have received from the Secretary of the Royal Horticultural Society the following abridged statement taken from the full report of the Pear Conference recently held at Chiswick, and which is not yet sufficiently advanced for publication. This extract will, however, serve the purpose of disseminating useful information to intending planters during the present season, and it is with this object that the Council have decided upon giving it the earliest possible publicity. The report has been prepared by Mr. A. F. Barron, and we shall look forward with interest to its publication.

The selection of the present season for the holding of a great Exhibition and Conference on Pears in succession to that on the Apples in 1883 proved to be propitious, the crops of Pears throughout the country being in general very abundant and good. The cold, dry summer was not specially favourable for the growth and development of Pears, and in many instances the fruit was much smaller than usual, especially of the earlier varieties. The later varieties benefited greatly by the autumnal rains, and proved in general of a fair average character.

The response to the invitation issued by the Council proved of the most satisfactory character, the number of Pears sent in for exhibition far exceeding the most sanguine expectations of the committee, the exhibition being not only large in extent, but in all respects a truly representative exhibition of nearly all the varieties of Pears grown or cultivated in this country. The total number of exhibitors taking part in the Conference numbered 166, contributions being received from thirty-five of the English counties, also from Scotland, Ireland, Wales, and the Channel Islands, the total number of dishes or different lots of Pears staged numbering 6350. In addition several large and meritorious collections were received from France, which proved of great interest.

| Counties. | No. of Exhibitors. | No. of Dishes. | Counties. | No. of Exhibitors. | No. of Dishes. |
|---|---|---|---|---|---|
| Bedfordshire .. | 1 | 63 | Nottinghamshire .. | 4 | 173 |
| Berkshire .. .. | 4 | 66 | Oxfordshire .. | 1 | 41 |
| Buckinghamshire .. | 4 | 213 | Rutlandshire .. | 1 | 28 |
| Cambridgeshire .. | 1 | 11 | Shropshire .. .. | 1 | 63 |
| Cheshire .. .. | 3 | 82 | Somersetshire .. | 1 | 69 |
| Cumberland .. | 2 | 2 | Staffordshire .. | 2 | 53 |
| Derbyshire .. .. | 2 | 26 | Suffolkshire .. | 2 | 36 |
| Devonshire .. .. | 5 | 311 | Surrey .. .. | 17 | 622 |
| Essex .. .. | 5 | 294 | Sussex .. .. | 8 | 338 |
| Gloucestershire .. | 3 | 157 | Warwickshire .. | 2 | 42 |
| Hampshire .. .. | 2 | 111 | Wiltshire .. .. | 6 | 174 |
| Herefordshire .. | 7 | 330 | Worcestershire .. | 5 | 224 |
| Hertfordshire .. | 5 | 451 | Yorkshire .. .. | 2 | 69 |
| Huntingdonshire .. | 1 | .. | | | |
| Kent .. .. | 11 | 486 | Scottand .. .. | 10 | 415 |
| Lancashire .. .. | 2 | 83 | Wales .. .. | 6 | 103 |
| Leicestershire .. | 1 | 53 | Ireland .. .. | 2 | 30 |
| Lincolnshire .. | 4 | 121 | Guernsey .. .. | 2 | 33 |
| Middlesex .. .. | 10 | 638 | Jersey .. .. | 1 | 74 |
| Monmouthshire .. | 1 | 55 | Total .. | 166 | 6350 |
| Norfolkshire .. | 4 | 95 | | | |
| Northamptonshire .. | 2 | 72 | France .. .. | 2 | 362 |

The total number of reputedly distinct varieties of Pears exhibited subsequent to the corrections made by the committee amounts to 650.

An audit taken of the whole of the varieties exhibited gives the following result as to the most favoured or popular varieties, Beurré Diel, although only a second-rate Pear, standing at the top of the list, having been exhibited 194 times; Marie Louise being placed second, 155 dishes being shown; and Louise Bonne of Jersey third (132 dishes).

*List of the Fifty Pears Exhibited the Greatest Number of Times.*

| | No. of Dishes. | | No. of Dishes |
|---|---|---|---|
| Beurré Diel .. .. | 194 | Comte de Lamy .. .. | 73 |
| Marie Louise .. .. | 155 | Knight's Monarch .. | 73 |
| Louise Bonne of Jersey .. | 132 | Ne Plus Meuris .. .. | 73 |
| Duchesse d'Angoulême .. | 121 | Beurré d'Amanlis .. .. | 72 |
| Winter Nelis .. .. | 121 | Beurré Superfin .. .. | 71 |
| Passe Colmar .. .. | 118 | Pitmaston Duchess .. | 69 |
| Josephine de Malines .. | 110 | Uvedale's St. Germain .. | 66 |
| Bergamotte d'Esperen .. | 112 | General Todtleben .. | 63 |
| Beurré Rance .. .. | 108 | Conseiller de la Cour .. | 61 |
| Catillac .. .. .. | 108 | Beurré Bosc .. .. | 57 |
| Beurré Clairgeau .. .. | 106 | Thompson's .. .. | 56 |
| Doyenné du Comice .. | 104 | Napoleon .. .. | 55 |
| Beurré Capiaumont .. | 86 | Marie Louise d'Uccle .. | 54 |
| Beurré d'Aremberg .. | 80 | Glou Morceau .. .. | 53 |
| Vicar of Winkfield .. | 78 | Van Mons Léon Leclerc .. | 51 |
| Chaumontel .. .. | 77 | Huyshe's Victoria .. | 50 |
| Beurré Hardy .. .. | 74 | Gansel's Bergamot .. | 50 |
| Beurré Bachelier .. .. | 74 | Baronne de Mello .. | 50 |

In regard to nomenclature, each of the collections exhibited was carefully examined by the committee and corrections made where considered requisite. Errors of judgment may in some cases have occurred, due to the altered appearance the same fruits often assume under different conditions, &c. Some others may have been overlooked, or their proper labels have got misplaced. Every endeavour was, however, made to secure the most correct nomenclature possible. The corrections made by the committee have in all cases been sent direct to the exhibitors. A pleasing feature noted by the committee was the general correctness of the nomenclature.

On a general examination of the whole of the collections exhibited, and noting the more prominent varieties in each, the following list has been prepared, viz. :—

*Variety of the most Prominent Varieties of Pears Exhibited at the Conference.*

| | |
|---|---|
| Alexandre Lambre | Josephine de Malines |
| Bergamo te d'Esperen | Jersey Gratioli |
| Beurré Alexander Lucas | Louis Bonne of Jersey |
| ,, d'Amanlis | Madame André Leroy |
| ,, d'Anjou | ,, Treyve |
| ,, de Paris mpire | Marie Benoist |
| ,, Baltet | Marie Louise |
| ,, Baltet père | Marie Louise d'Uccle |
| ,, Bosc | Nouvelle Fulvie |
| ,, Clairgeau | Olivier des Serres |
| ,, Diel | Passe Colmar |
| ,, Hardy | ,, Crassane |
| ,, Rance | Pitmaston Duchess |
| ,, Spae | Princess |
| ,, Sterckmans | Souvenir du Congrès |
| ,, Superfin | Suffolk Thorn |
| Chaumontel | Trompsan |
| Comte de Lamy | Urbaniste |
| Conseiller de la Cour | Van Mons' Léon Leclerc |
| Doyenné Boussoch | Williams' Bon Chrétien |
| ,, du Comice | Winter Nelis |
| Duchess d'Angoulême | Zephirin Grégoire |
| Durondeau | *Stewing Pears.* |
| Easter Beurré | Bellissime d'Hiver |
| Emile d'Heyst | Catillac |
| Flemish Beauty | Gilles-ô-Gilles |
| Fondante d'Automne | Grosse Calebasse |
| Gansel's Bergamot | Uvedale's St. Germain |
| General Todtleben | Verulam |
| Gout Morceau | Vicar of Winkfield |
| Huyshe's Bergamot | |

Of modern Pears or varieties, although not new, which are not yet in general cultivation, the committee made the following selection of Pears, which are highly recommended for good quality, both in flavour and bearing properties, viz. :—

| | *Season.* |
|---|---|
| Beurré Giffard | August |
| Madame Treyve | September |
| Summer Beurré d'Aremberg | ,, |
| Clapp's Favourite | ,, |
| Pitmaston Duchess | October, November |
| Beurré d'Anjou | November |
| ,, Baltet, père | ,, |
| Emile d'Heyst | ,, |
| Marie Benoist | January |
| Nouvelle Fulvie | ,, |
| Beurré de Jonghe | ,, |
| L'Inconnue (Van Mons) | ,, |
| Duchesse de Bordeaux | February |
| Passe Crassane | February, March |
| Olivier des Serres | ,, |

Varieties recommended by the committee for growing for market purposes :—

| | *Season.* |
|---|---|
| Beason | August |
| Fertility | September |
| Souvenir du Congrès | ,, |
| Marie Louise d'Uccle | October, November |
| Durondeau or De Tongres | ,, |

Of new varieties, the Conference Pear exhibited by Messrs. Rivers & Son (season, October) was awarded a First-class Certificate.

In the collections of varieties exhibited from France, and not yet proved in this country, the committee recommended the following as worthy of introduction :—

| | |
|---|---|
| Beurré Dumont | October |
| Madame André Leroy | November |
| President Mas | ,, |
| President d'Osmanville | ,, |

No list of the worthless varieties has been prepared, it being deemed sufficient in this report to notify those that are worthy of cultivation.

Without entering into comparison of the merits of the different collections exhibited, it is important to notify this fact—that the cultivation of good Pears is not confined to any particular climate or district of the country. If we take the magnificent examples from M. Cornu, of Jersey, as the result of good and careful cultivation, we have their equals produced by Mr. Haycock and by Mr. Thomas, in Kent, and closely followed by Mr. Wildsmith, in Hampshire, and Mr. Breeze, in Sussex. Many other single examples throughout the exhibition were equally meritorious. No one failed to remark on the excellence of the examples from Lord Chesterfield, in Derbyshire, or those further north still from Mr. Dalrymple, St. Boswell's, Scotland, which were probably the most meritorious of all. Nothing contributed so much to these successful results as good and careful cultivation. As a general rule, the best fruits are produced where the greatest care is bestowed. An important factor in the successful cultivation of the Pear is, as gathered from the returns, in the use of the Quince stock, which, from its close surface-rooting character, is more directly amenable to the attentions of the cultivator.

A general detailed report is in course of preparation, but which will necessarily take some time. This will contain the cultural and other notes supplied by the various exhibitors, and the selections of varieties made by them; also a short descriptive catalogue of the whole of the varieties exhibited. *A. F. Barron, Secretary to the Committee.*

## A SYNOPSIS OF THE SPECIES AND HYBRIDS OF NERINE.

THERE are many genera of garden plants of which cultivators know far more about the characters of the species and their range of variation and mutual relationships than has ever been placed on record in botanical books. Nerine is such a genus, and as I have lately been attempting to work out a classification and definition of its types for the projected bulb volume of the *Flora Capensis* I wish now to lay the result before your readers, and to ask them to supply any deficiencies which they find. The great puzzle in determining the garden forms arises from the fact that so many of them owe their origin to hybridisation, and that the parentage of these hybrids has not been placed on record. I have already questioned about the matter several of my most experienced horticultural correspondents, especially Messrs. Leichtlin, Elwes, O'Brien, and E. G. Henderson & Son, and they have helped me very materially. What I wish to do is to define and classify in their proper position all the forms to which Latin names have been given, whether they are genuine species or of garden origin.

*Key to the Species.*

Peduncle long, slender. Perianth-limb erect. Stamens and style nearly straight.
- Leaves green, straight. .. .. 1. N. SARNIENSIS.
- Leaves glaucous, curved .. .. 2. N. CURVIFOLIA.

Peduncle long, slender. Perianth-limb slightly irregular. Stamens and style declinate.

Umbel centripetal.
- Leaves 4—6, linear-lorate.
  - Perianth-segments distinctly crisped. 3. N. FLEXUOSA.
  - Perianth-segments nearly plain. 4. N. PUDICA.
- Leaves 6—8, filiform .. .. 5. N. FILIFOLIA.

Umbel centrifugal.
- Perianth-segments about ½ inch long, much crisped. 6. N. UNDULATA.
- Perianth-segments 1—1½ inch long, less crisped. 7. N. HUMILIS.

Peduncle short, stout.
- Leaves linear, contemporary with the flowers 8. N. LUCIDA.
- Leaves ligulate, produced after the flowers 9. N. MARGINATA.

DESCRIPTIONS OF THE SPECIES.

1. N. SARNIENSIS, Herb. App. 19.—Bulb ovoid, 1½—2 inches diameter; tunics pale brown. Leaves about six, bright green, suberect, not curved laterally, developed with or a little after the flowers, linear, finally about a foot long, ½—¾ inch broad. Peduncle slender, rather compressed, 1—1½ foot long. Umbel 10—20 flowered, centripetal; pedicels 1—1½ inch long; spathe-valves ovate-lanceolate, 1½—2 inches long. Ovary green, globose-trigonous, ½ inch diameter. Perianth suberect, 1½—1¾ inch long, bright crimson; segments oblanceolate, ¾ inch broad, equally falcate, little crisped. Filaments erect, bright red, little longer than the perianth-segments; anthers oblong, ⅛ inch long. Style straight, nearly 2 inches long.—Kunth, Enum., v., 617. Amaryllis sarniensis, Linn., Sp., 421; Curt. Bot. Mag., t. 294; Red. Lil., t. 35; Jacq. Hort. Schœn., i., 34, t. 66. A. dubia, Houtt. Pflanz. Syst., xii., 181, t. 84, fig. 1. Hæmanthus sarniensis, Thunb. Prodr., 58; Fl. Cap., edit. 2, 293. A. Jacquini, Tratt. Gartenfl., 43. Nerine Jacquinii, Roem. Amaryll., 105. Imhofia sarniensis, Salisb. Gen., 118.

Var. *N. Plantii*, Hort.—Differs from the type in the colour of the flower being a duller crimson, the segments more distinctly unguiculate and the peduncle longer.

Var. *N. venusta*, Herb., App., 19.—Leaves green. Flowers bright scarlet, produced earlier than in any of the other varieties. Ker, in Bot. Mag., t. 1090. Imhofia venusta, Salisb. Gen., 118. N. profusa, Hort.

Var. *N. rosea*, Herb., App., 19.—Leaves darker green than in the type. Flowers rose-red. Seeds oblong. Bot. Mag., t. 2124. Imhofia rosea, Salisb. Gen., 118.

Var. *N. corusca*, Herb. App., 19.—Bulb tunics not chaffy. Leaves broader than in the type, bright green with distinct cross-bars between the main veins. Flowers large, bright scarlet, resembling those of N. curvifolia, Herb. Amaryll., 283; Kunth, Enum., v. 617. Amaryllis corusca, Gawl. in Bot. Mag., sub t. 1130. A. humilis, var., Gawl. in Bot. Mag., t. 1089. Imhofia corusca, Salisb., Gen., 118. N. Meadowbankii, Hort.

Hab., Southern Provinces, Thunberg, Burchell, 1816; Ecklon, Rev. Wm. Rogers. Commonly cultivated in European gardens under the name of the Guernsey Lily. N. insignis, Hort. Leichtlin, is also a variety of this species.

2. N. CURVIFOLIA, Herb., App., 19.—Bulb ovoid, 1½—2 inches in diameter; tunics pale brown. Leaves six, developed after the flowers, linear-lorate, curved laterally, thicker in texture than in N. sarniensis, glaucous, closely veined, a foot long, ½—¾ inch broad. Peduncle slender, glaucous, 1—1½ foot long. Umbel 8—12-flowered, centripetal; podicels 1—1½ inch long; spathe-valves about as long as the pedicels. Ovary globose-trigonous, ½ inch in diameter. Perianth erect, bright scarlet, 1½—1¾ inch long; segments obtanceolate, ¾ inch broad, equally falcate, but little crisped; stamens suberect, about as long as the perianth-segments. Style suberect, finally 2 inches long.—Herb. Amaryll., 283, t. 36, fig. 4, t. 45, fig. 3; Kunth, Enum., v. 616. Amaryllis curvifolia, Jacq. Hort. Schœn., i., 33, t. 64; Gawl. in Bot. Mag., t. 725; Red. Lil., t. 274. Imhofia glauca, Salisb. Gen., 118.

Var. *N. Fothergilli*, Roem., Amaryll., 104.—More robust in all its parts than the type. Leaf broader. Flowers in an umbel, more numerous, between crimson and scarlet. Amaryllis Fothergilli, Andr., Bot. Rep., t. 163.

Hab., Southern Provinces. Common in European gardens, where it flowers from the middle to the end of September.

3. N. FLEXUOSA, Herb., App., 10.—Bulb subglobose, 1½ inch diameter. Leaves 4—6, contemporary with the flowers, linear-lorate, arcuate, bright green, ½—¾ inch broad, sometimes, but not always, rough, with pustules. Peduncle slender, subterete, slightly glaucous, flexuose, sometimes 2—3 feet long. Flowers 10—20 in a centripetal umbel; pedicels slender, 1—2 inches long; spathe-valve lanceolate, as long as the pedicels. Ovary globose-trigonous, ½ inch in diameter. Perianth-limb generally pale pink, 1—1½ inch long, cut down very nearly to the ovary; segments oblanceolate, crisped, ¼ inch broad. Stamens declinate, the three longer ones rather shorter than the periantb-limb; anthers oblong, claret-red, ⅛—⅙ inch long. Style declinate, as long as the stamens.—Herb., Amaryll., 283; Kunth, Enum., v., 619. Amaryllis flexuosa, Jacq. Hort. Schœn., i., 35, t. 67; Willd. Sp. Plant., ii., 60; Ait., Hort. Kew., edit. 2, ii., 229; Ker in Bot. Reg., t. 172. N. excellens, Moore in Florist, 1882, 52, t. 567.

Var. *N. Sandersoni*, Baker.—Peduncle and pedicels more robust. Leaves an inch broad. Perianth 1¼ inch long; segments less crisped and more distinctly united in a cup at the base.

Var. *N. pulchella*, Herb., App., 19.—Leaves glaucous, firmer in texture than in the type. Peduncle not flexuose. Periantb-segments pale pink, with a rose-red keel. Stamens and style whitish.—Herb. in Bot. Mag., t. 2407 Kunth, Enum., v., 629.

Var. *N. angustifolia*, Baker.—Like the last, but leaves not above ⅛—⅙ inch broad, and pedicels pubescent. N. pulchella var. angustifolia, Baker in Ref. Bot., t. 329.

Hab., Southern Provinces, Burchell, 2989; mountains of Somerset east, 4000—5000 feet, Bolus, 2202; Natal, Wood, 157; Rehmann, 7320; McKen. Var. Sandersoni, Transvaal, Sanderson. Var. pulchella, Macowan, 1549. Var. angustifolia, Boschberg, 4000—5000 feet, Macowan, 1889; Orange Free State, Cooper, 3221.

*J. G. Baker, Kew Herbarium.*

*(To be continued.)*

## TREES AND SHRUBS.

TREES AND SHRUBS SUITABLE FOR THE SEASIDE.—In proceeding to consider the various trees and shrubs which experience has proved to be useful in resisting direct exposure to the sea blast, some of the principal difficulties with which the planter has to contend, and which occasionally frustrate his best attempts, may be briefly pointed out. The chief consideration in seaside planting is unquestionably shelter, for it may be noticed anywhere along our coast that wherever the direct force of the hurricane is broken there trees and shrubs are tallest and most luxuriant. Another, and perhaps the principal, evil with which one has to contend, is the injurious effect caused to trees, but more particularly evergreen shrubs, by the saline particles which are driven and deposited with such force on the leaves and branches as in many instances to give them the appearance of having been scorched or cut over when in full vigour by an untimely frost. Wind-shaking, although a minor evil, must also be carefully guarded against, so that at the outset it is well to have all trees, unless such as are of a dwarf size, securely staked and tied so as to obviate the dire results occasioned to the roots of newly-planted trees when the stems are allowed to rock to and fro with the wind. My object in the present paper is, however, not so much to point out the methods adopted for obtaining shelter, as to bring under notice such trees and shrubs as are well suited for seaside planting, and also to show that the monotonous repetition of some half-a-dozen kinds, which for centuries have been known as suitable, is

by no means necessary, there being numbers of plants equally well adapted for embellishing our seaside grounds and gardens—in fact that, with careful manipulation, there is scarcely a limit to the number of species that may be successfully cultivated. Before commencing planting operations on the seacoast (I am not here referring to drifting sands or large areas of ground, but principally to the smaller tenements that are so common along our shores), the preliminary step is to erect a barrier of some kind, which will intercept the violence of the wind and act as a screen or shelter to the young plants. For this purpose various kinds of erections are equally suitable, but that generally adopted, and which ultimately turns out the least unsightly, is a raised mound of turf and soil, of, say, 6 feet in height, and of sufficient width atop to allow of the planting of a double or treble line of Quicks. This is in most cases easily formed, costs but little, and if not equally efficacious, is certainly far more ornamental than a dead stone wall. Immediately behind this screen pits of not less than 2 feet in diameter, and about 18 inches in depth, may be opened, and all the better if so for a winter previous to being planted. The bottom and sides of each pit should be well loosened with a pick, and if the soil is found of inferior quality, or of an unkindly nature, it will be well, more especially where it can readily be obtained, to add a spadeful or two from some adjoining old hay-field.

March or April will be quite soon enough to commence planting operations, an early start at growth being much in favour of young trees that have but recently been transferred to the sea coast. The plants to be used should not exceed 3 feet in height, but should be of strong growth in proportion to their size, and supplied with an abundance of fibrous roots; lanky, ill-grown plants have but a poor chance of succeeding under such adverse circumstances. In planting keep the strongest roots seaward, and do not place the trees at a greater depth in the soil than they stood whilst in the nursery border, this latter being an oft-committed mistake, that is productive of anything but favourable results. A stout stake should then be driven close to the stem of each on the exposed side, and to which the plant is firmly united by strong matting or teased-out tar-rope, and in such a manner as to insure against chafing or rubbing.

In the first line or lines of pits next to the screen fence the trees best adapted for withstanding the first brunt of the sea breeze are the Elm, Sycamore, and Willow amongst hard-woods; while of Pines, the Pinaster and its smaller variety maritima, the Aleppo or Jerusalem Pine, insignis, Laricio, austriaca, and our native sylvestris, are decidedly superior to any others. Regarding the merits of the Pinaster for seaside planting it would be almost superfluous for me to speak, while the Elm and Sycamore send out their strong branches into the very teeth of the blast and are known as being particularly well adapted for such situations. On the Isle of St. Marguerite, opposite Cannes, the Aleppo Pine (P. halepensis) grows with its roots down even to the salt water, and there, without a shadow of harm, withstands the most terrific sea gales. Unfortunately, it is somewhat tender, but in many maritime situations along our coast line it would no doubt do well. *A. D. Webster, Penrhyn Castle.*

### STYRAX JAPONICUM.

The genus Styrax, which gives its name to the order Styraceæ, contains about sixty species, and is widely dispersed throughout both hemispheres. It is nearly allied to Halesia, the "Snowdrop tree" or "Silver-bell tree" of the Eastern United States. The greater number of species occur in the warmer regions of Asia and America, and so far none have been found in Tropical or Southern Africa or in Australia. S. officinale is a shrub or small tree from South-eastern Europe and Asia Minor, but is thoroughly naturalised in many places in the Mediterranean region. It furnishes storax, a fragrant resin which was known to the ancients. This and the three North American species which are mentioned in Loudon's *Arboretum*, are now rarely met with in English gardens. This is no doubt due to the fact that they cannot be counted upon as hardy except in favoured spots in the Southern Counties. In all probability S. japonicum is hardier than those just mentioned; at any rate it has grown for many years on a cold, gravelly, clayey bank in Messrs. Veitch's picturesque nursery at Coombe Wood. It also makes a fine object when grown in pots for cool conservatory decoration. A glance at the illustration given in *Gardeners' Chronicle*, December 12, 1885, will show what a beautiful shrub it is. The long-stalked, scented, snowy flowers are, when in bud, not unlike those of the Orange, but instead of being borne, as in that plant, on rigid erect peduncles, they are quite pendulous. When fully expanded the golden-yellow anthers form a pleasing contrast with the pure white corollas. In Siebold and Zuccarini's *Flora Japonica* it is stated that the species now under notice is one of the most beautiful of Japanese shrubs, and that it is abundant in South Japan, where it thrives on hillsides and on the borders of woods—attaining a height of about 6 feet, and flowering in May—at an elevation of from 300 to 1200 feet above sea-level. In the pleasure gardens and around the temples, where it is largely planted, it grows more vigorously and to a greater size than in a wild state. The hard white wood is used for turnery a and all sorts of carving purposes. S. japonicum, in the *Flora of British India*, is united by Mr. C. B. Clarke with Roxburgh's S. serrulatum, but it is a much handsomer plant, and for garden purposes abundantly distinct. S. Obassia, another Japanese species, recently introduced by Messrs. Veitch, is a vigorous growing large-leaved shrub with a racemose inflorescence; this will no doubt prove a great acquisition to British gardens. *G. Nicholson, Kew.*

## APOSPORY.

FOLLOWING up Mr. Charles T. Druery's exhaustive pamphlet on *Apospory in Ferns*, read before the Bristol Naturalists' Society (reprinted from the Society's *Proceedings*, vol. iv., part 3. 1884—1885), I am induced from sundry jottings over a period of hirty years to give the public the benefit of my observations on certain abnormal growths of some of our British Fern varieties. This prothalloid growth, very aptly referred to "apospory," is one of the most wonderful in which Dame Nature shows off her vagaries.

As long ago as May 4, 1855 (extract from my diary), I observed on Polypodium vulgare var. omnilacerum, Bennett, a very remarkable membranaceous or prothalloid growth from lash-like elongations on the apices of the serrate lobes, on the summits of which there were evident incipient germs in the form of discolorations of the tissue. Some of these I removed from the plant and layered in damp sandy soil under a bell-glass, but eventually no young Ferns were produced. On May 7 of the same year I communicated these facts to Mr. Thomas Moore, curator of the Botanic Gardens at Chelsea, and also to Mr. William Bennett, the finder of the Fern.

I mentioned this to show that the subject on which I am going to treat is not new to pteridologists but that it has been allowed to fall into abeyance until the present time, when this and other kindred anomalies are exciting great interest in the botanical world.

The Fern, the subject of this paper, is named Polystichum angulare var. pulcherrimum, Padley, and was discovered in North Devon by the Rev. Charles Padley more than twenty years ago. A specimen of it was first exhibited when I read the opening address of the first Pteridological Congress at Darlaston Hall, Co. Stafford, the seat of the late Swynfen Jervis, Esq., on August 23, 1865, when I made remarks on its specialties, such as the unusual form of cristation, this doubtless being what is now known as the prothalloid growth.

It will convey to general readers a better idea of the abnormal if I first give the characteristics of the normal plant. The plant attains the ordinary size of Polystichum angulare, and the frond is of the usual outline, as are also the outlines of the pinnæ, but the pinnules, which are generally normal on the upper or anterior side, are flabellulate and pedicellate on the under or posterior side; they are also greatly extended and curved upwards, giving the pinnule a falcate or sickle-shaped outline. The prothalloid growth about to be described obtains pretty equally on all parts of the fronds.

Fig. 174, which is full size, shows the general characteristics from a pinna with some of the prothalloid or aposporous growths, and the very beautiful habit on account of which the name of the variety, pulcherrimum, has been given. Figs. 175 and 176 are greatly enlarged pinnules, which show the prothalloid excrescences more fully. Fig. 177, being still more highly magnified, shows the remarkable and most interesting club-shaped form at fig. 175, B. This is composed of granular tissue, but at and towards the apex is covered with glands, leaf-like or scale-like appendages, as well as curiously noduled hairs. Fig. 178 is another form of prothalloid growth, showing seven or eight archegonia, and a thickening of the substance of the prothalloid growth, from which I have no doubt another prothallus would have been projected. Fig. 179 shows a triple prothallus from the tip of a pinnule. Fig. 180, the same greatly magnified at a rather later date, in which will be seen at E, the prothallus doubled, and at F, the commencement of a further growth. Fig. 181 is a pinna laid down by J. W. Morris, Esq. (mentioned in a letter May 7, 1885), on which will be seen three or more of the true Fern growth further advanced, and more so at fig. 182.

I must now thank my kind friends, Col. Jones, Charles T. Druery, H. M. Stoltenhoff, and J. W. Morris, Esquires, for the interest they have shown and the great assistance they have been to me in my experiments, more particularly the last named gentleman, who is the first and only person who has succeeded in raising the true Fern. *Geo. B. Wollaston, Bishop's Well, Chislehurst, Nov.* 12.

## Florists' Flowers.

### DAHLIAS IN 1885.

I THINK it was generally admitted that the Dahlias shown at the Crystal Palace in September were very much finer on the whole than could have been expected, regard being had to the prolonged drought which prevailed during the summer. In localities where the drought was most keenly felt, the flowers were undersized, and somewhat rough also; but the Northern flowers were as large as usual, although the dry summer was felt in many parts of the North as in the South. The usual mulching was never put upon the ground in which the Salisbury Dahlias were grown; a heap of manure was lying ready, but Messrs. Keynes & Co. waited for the rain which did not come until it was useless to apply it. They were freely watered, but the parched soil drank up eagerly any water that was poured over the plants, and in a few hours appeared to be as greedy for moisture as ever. Perhaps something was due to what is generally recognised by Dahlia growers as an acknowledged fact, that the improvement made in the newer varieties has also resulted in causing them to be "easier to get" than they were a few years ago.

In passing in review some of the Dahlias seen during the past season, it must not be forgotten, as previously stated, that it was a peculiarly trying one. Not only did drought affect the plants, but many of them were infested with the black-fly, and there was great need for drenching showers to cleanse them. When atmospheric conditions are favourable to the increase of this pest, and showers do not fall, it is hard and unceasing labour to keep the flowers clean; therefore, it may fairly be assumed that varieties that, despite adverse circumstances, were in good form during the summer of 1885, are those worthy of being cultivated.

That constant pure white flower, Annie Neville, must be set down as a very useful variety. Cardinal, rich scarlet, was a little undersized, but very bright and thoroughly constant, good outline centre and petal, and dwarf habit of growth; Condor is of a very peculiar colour—buff, shaded with orange, very fine and constant, good petal and centre, but small, owing to the drought; Constancy, yellow ground, deeply edged with lake, is both good and pleasing, and decidedly useful for exhibition purposes. Earl Radnor, an intense plum-coloured self, was very fine as usual. Georgina was very late, which should be noted—it was not even in bloom by the third week in August; it is a good useful creamy-white self when caught, dwarf habit, and the flowers thrown up well on erect stems. Henry Walton, yellow, deeply edged with vermillion, is very constant, and always useful to the exhibitor; Herbert Turner is a good white self, but apt at times to come with the petals somewhat curled; Hope, light rosy-lilac, was a favourite flower with the late Charles Turner: he could thoroughly appreciate its good constant qualities; Imperial is a good and useful deep purple self, sometimes lit up with a pretty shade of lilac; James Cocker, a large purple self, is




FIG. 174.




FIG. 175.



FIG. 177.



FIG. 176.



FIG. 178.



FIG. 179.

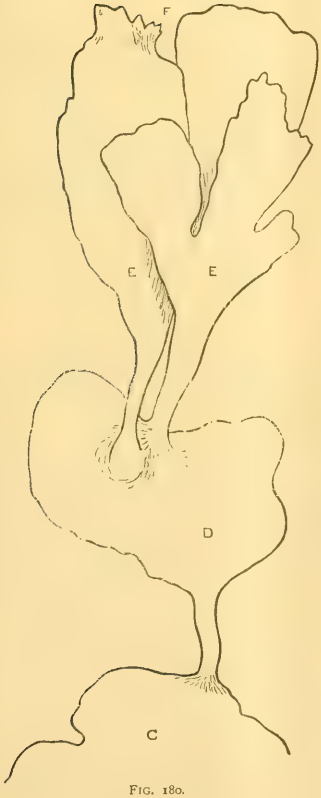



FIG. 180.



FIG. 181.



FIG. 182.

APOSPORY IN FERNS. (SEE P. 780.)

one of the most constant of Dahlias, and can always be depended upon; the same can be said of James Service, a rich dark crimson self. John Neville Keynes is certainly the best of all the older yellow selfs, if not the newer ones also, very fine and constant; Joseph B. Service, also a yellow self, is pure in colour, and very good and constant; Julia Wyatt is a very pretty creamy-white self, and a variety that can be depended upon to produce some good show blooms. Lady Gladys Herbert is always largely shown at a Dahlia competition, light orange, deeply edged with crimson; Lord Chelmsford is a fine dark maroon self, but shy; but when caught in good condition it makes a fine show variety. Miss Cannell is a very fine Dahlia, good in outline and centre, creamy ground, deeply ridged with purplish-crimson, and very constant; when sent out by Mr. Cannell this variety came single, but a cutting was obtained from Mr. Eckford, which produced double blossoms. It will sometimes produce some semi-double flowers, but such plants as this are never propagated from. Mrs. Gladstone was undoubtedly the finest Dahlia of the season, very constant and good, and a real model when in good condition. Mrs. Harris, light ground edged with pale lilac, is also a first-rate Dahlia, fine in shape and pleasing in character; Mrs. Stancomb, canary-yellow tipped with deep fawn, is very pretty indeed, and good and constant; Mr. Harris, one of Mr. Rawlings' seedlings, is a crimson-scarlet self of dwarf growth, and a good useful show flower; Mr. Spofforth, a large crimson self, is also a constant useful variety. Picotee is well named, because of its slight bright crimson edge on a golden-yellow ground; this season the lacing was very slight indeed. Prince Arthur is a very fine and useful yellow self, and makes an excellent show flower. Prince Bismarck should have a place in every collection of show varieties, because so good all round. Prince of Denmark, very dark maroon, shaded with bright crimson, has petals of the most approved form. It has an excellent centre and outline, but came small this year: it is very fine and bright. Royal Queen is also a purple-edged flower on a white ground, and something in the way of Mrs. Cannell. Shirley Hibberd, dark flushed with crimson, is a fine shaded flower, but apt to come a little quilled in the petals. Thomas Goodwin is a very dark and constant self, which can be relied upon. William Rawlings, rich crimson-purple, is a very fine self, of good size, full, fine petal and outline.

This list is intended, not so much to set forth all the good show Dahlias in cultivation, but those merely that stood the dry summer well at Salisbury. A season may be too dry or too wet—both have their disadvantages, and probably the first has the least where watering can be efficiently done. But let the prevailing character of the weather be what it may, Dahlia growers manage to produce good flowers at the time they are required: in the various tussles man has with Dame Nature the latter is not always victorious. *R. D.*

## THE BILLING ROAD NURSERY, NORTHAMPTON.

THIS old established nursery lays just out of the town of Northampton, and occupies about 115 acres of a gentle southern slope. Much of the soil consists of a reddish loam, moderately free, rather shallow, but well suited to the growth of trees and shrubs generally, and which do not make rank growth in it. This is no doubt attributable to the fact of the subsoil being of such a nature that the roots do not strike deep into it, but keep more to the surface. Coniferous trees do well, soil and situation alike favouring sturdy but somewhat slower growth than obtainable in places where the roots have a deeper run. All the leading fashionable kinds are grown in moderate quantities and in various sizes.

But it is in the way of what may be termed specialties that this nursery is remarkable, Messrs. Perkins finding it more to their purpose to cultivate a limited number of things in all but unlimited quantities, rather than to divide their attention equally between the thousand and one subjects for which there is comparatively little demand. Amongst the things grown extensively are Thorn Quicks. To those unacquainted with the demand that each succeeding year brings, a sight of the seed beds here in autumn would give an impression that there were more than enough to suffice for all the hedge-planting in the kingdom, yet each winter the whole of the stock that is big enough to plant is cleared off, the annual sale amounting to two and a half millions. Of these about two millions are raised by Messrs. Perkins, and the remainder, in the seedling state, procured elsewhere.

Of deciduous trees Oak and Ash head the list. Much as the present generation of planters run on quick-growing, soft-wooded species, there are evidently more than might be supposed who plant these representative hard-wooded trees, as seen by the quantities of seedlings annually raised in the Billing Road Nursery.

Of coniferous trees the Austrian Pine, Pinus austriaca, and the Corsican Pine, Pinus Laricio, now stand a long way ahead of all others in the quantity here grown. Mr. Perkins considers that the last-named is the tree more than any other which those who plant extensively for timber purposes would do well to use. It outstrips everything else amongst Conifers, wasting less strength in lateral growth, whilst the quality of its timber leaves nothing to be desired. Many have refrained from planting this Pine on account of its having the character of being a ticklish subject to deal with. Like most other quick-growing trees if allowed to stand any time without transplanting, it makes long coarse roots that do not like removal. Mr. Perkins' advice is to plant only stock that has been kept regularly moved from the seed-bed onwards, and not more than from 18 inches to 2½ feet high.

Elms and Limes, such as used for avenue planting, are made an especial feature, and unusually well done, the last named in particular, with stems as straight and even as possible. One essential in the cultivation of these trees when to be used in this way is, that all through the course of their preparation they should stand far enough apart. Where the reverse of this has occurred the trees make little progress for some time after planting where they are to remain permanently; the obvious cause being that the growth of which they consist is too soft to bear exposure to the wind. Here the trees are kept from the first well clear of each other. Green Hollies and Yews receive their full share of attention; immense stretches of these are present in all stages from a foot upwards.

The different kinds of plants used for covert planting occupy a large extent of the nursery. Of these Prunus Myrobalana is now much in favour both for game and fox covert. The plant, although not so generally known as it might be, will adapt itself to almost any kind of soil, however poor and sandy, making good progress where many things would starve. Of this, and the common Sloe, there is an immense stock.

Common Laurel, in hundreds of thousands, cover long stretches of ground, whilst the less known but better kinds, such as rotundifolia, caucasica, and a round-leaved form of the last-named, with much darker coloured leaves, are only somewhat less in quantity.

Mahonia (Berberis) aquifolium occupies several acres—nice young stuff, from a foot to 2 feet high.

The old evergreen Privet holds its own as a covert plant against all the other sorts, keeping closer to the ground, which it covers where many things could not grow. A large breadth of Gorse is sown annually so as to always have a supply in the right condition for planting.

Of Hazel and Hornbeam large breadths are grown to meet the demand where more of a mixed character of covert is required. Covert planting, where to be carried out on an extensive scale, is an operation that swallows up immense quantities of plants, necessitating the price being low; but it often happens that the stuff which, to the uninitiated in such matters, looks cheap, turns out to be the reverse, through being nothing more than the products of the seed or cutting beds, in which they have stood crowded together without ever being moved, until they are not worth planting, even if to be had for nothing. The character of growth present in the immense stock of these plants in this nursery shows at a glance that they are in right condition for moving.

Fruit trees are grown in immense numbers and very well done; all the best kinds usually asked for are represented, but the principal object is to meet the demand occasioned by the more sensible course which planters of fruit trees are at last beginning to follow, by confining their selection to a few of the heaviest bearers of good quality, with, amongst Apples and Pears, a sufficient number that are good keepers.

Gooseberries.—Of these London, Crown Bob, Roaring Lion, Rifleman, and Whinham's Industry, are the kinds most to be depended on, and most wanted.

Currants, black—Prince of Wales, Lee's Prolific, and Black Naples, are held as the best. Red—Wilmot's Long Bunch and La Versaillaise. White—White Dutch and Transparent White may be relied on as combining the best properties.

Of Raspberries the new Baumforth's Seedling has quickly established its reputation as one of the very best sorts; it is largely grown here.

Plums.—Of these Victoria, Pott's Emperor, Goliath, Pond's Seedling, Prince of Wales, and Rivers' Prolific, are most planted by many of the market growers, and they are equally worthy of the attention of those who cultivate fruit for their own use.

Apples.—The all but limitless number of varieties of this, the most useful of all fruits, perplexes ordinary planters to such an extent that in their bewilderment they hitherto have as often as otherwise got kinds that are little worth. But, thanks to the way in which the subject has been unceasingly ventilated in the gardening Press of late years, more light has been thrown on the matter, the result being that a few of the best proved varieties are now planted in the proportion of a score or a hundred to one of what they used to be. Here the principal run is on such sorts as Lord Suffield, Lord Grosvenor, Keswick Codlin, Stirling Castle, Blenheim Pippin, Dumelow's Seedling (Wellington), Cellini, Cox's Orange Pippin, King of the Pippins, Ribston Pippin, and Lane's Prince Albert.

Horse work is largely employed in preparing the ground, to facilitate the use of which the crops of the various trees and shrubs occupy long parallel stretches, which when cleared are manured and ploughed over deeply, harrowed, and brought into condition for the next crop. Potatos and Mangels as a change often occupy for one season the ground that has been under trees and shrubs.

Those who have not had an opportunity of seeing the amount of work that can be got through by a well-trained staff where systematic and cleanly cultivation is practised would be led to suppose that the transplanting of so many millions of plants annually could not be got through, but the land is of a nature such as admits of being got on to when the weather is not too wet to stand out. From eighty to a hundred thousand seedlings is the usual quantity planted per day. The work is mostly done by the piece. Altogether this is one of the best appointed and best kept nurseries I have seen. *T. B.*

## The Rosery.

### TEA ROSES IN POTS.

IF there is one flower more than another that the amateur longs to cultivate well it is the Rose, and preferably the Tea Rose, on account of its beauty and the delightful fragrance of the blooms. One amateur, writing some years ago in reference to Tea Roses, said he resided within a few miles of London, and was necessarily compelled to grow the Roses in pots, but after a season or two they turned out a complete failure. The blooms deteriorated after the first year, and the plants rapidly declined. The same amateur tried another plan. He planted out about fifty half-standards and dwarfs in well-prepared soil, and erected a low span-roofed house over them, with glass sides to the ground, and side windows for ventilation, and then the Roses looked remarkably healthy, the shoots most vigorous, and covered with buds. It would have been a wonder if Roses had not done well in such a happy state of things, planted out in suitable compost and protected from all inclement weather by a light screen of glass, which admitted ample light and sufficient ventilation. But if planted-out Roses succeeded well in such a house, why should pot Roses not do equally well? Given the best cultural requirements, it is quite certain that where planted-out Roses succeed pot Roses would not turn out a complete failure after a season or two. Very few amateurs can afford to plant out a bed of Tea Roses, and then, to make sure of success, erect a house over it.

Hundreds can afford to grow a few pot Roses, and

success is certain if the cultivator is sufficiently interested in the work to pay sufficient attention to the plants, and to keep them in a clean, healthy state. I do not know any plants more easily injured by the attacks of parasites than the Rose, especially Tea Roses. Mildew, orange fungus, red-spider, and greenfly attack the Rose by turns, or all at once. It is neglect of keeping the leaves and young shoots clear of these pests that causes debility and ultimately the death of the plants. Careful potting and repotting at the right time is a most important and necessary part of good culture, but good soil must also be used. Take, for instance, a Tea Rose growing in an 8-inch pot. Unless the soil in which it is growing is of the best quality, and also richly manured, the results cannot be quite satisfactory. A good compost for Tea Roses is formed of four parts good turfy yellow loam, one of peat, one of decayed stable manure, and a good proportion of white sand. An 8-inch potful of crushed bones should be added to each barrowload of loam. Drain the pots well and place over the drainage some decayed manure and turf from which the fibre has been shaken. A two-year-old plant may be flowered in an 8-inch pot; three-year-old in a 9 or 10-inch; the strongest plants the fourth year may be flowered in 11-inch. Again, whether the plants are to be forced or not, they must be placed in such a position when they are making their growth that they have a very large supply of light and air. They ought to be close to the glass, and when the flowers are opening the atmosphere must be dry and moderately warm. If they are forced early in the year the growth must be brought on gently. A little bottom-heat is excellent to begin with, and a temperature at night of about 45° to 50°.

During the last few years many new Tea Roses have been introduced, but some of the best of the old varieties are so popular that they will hold a high position for years to come. Niphetos, for instance, as a white kind, is not yet equalled. Devoniensis still reigns supreme in its lovely colour; Madame Falcot and Safrano are most beautiful in the bud state; Souvenir d'un Ami, too, has long been popular, and its popularity has not declined. Still, with all the good qualities belonging to these good old varieties, we cannot ignore the new and beautiful forms which have been so lavishly distributed in recent years. The best of them are Anna Olivier, flesh colour; Amazone, lemon-yellow; Belle Lyonnaise, Catherine Mermet, flesh-coloured or salmon-rose; Comtesse de Nadaillac, orange and coppery-coloured; Hon. Edith Gifford, beautiful in bud; La Boule d'Or, a fine pot Rose, golden-yellow flowers; Madame Jules Margottin, yellow with a pinky tinge; Madame Chedane Guinoisseau, sulphur-yellow, fine form; Madame Lambard, very distinct; Marie van Houtte, a very pretty yellow kind; Perle des Jardins, canary-yellow; Rubens, white, rose-tinted, fine. The above are not strictly new, and we must add to them the lovely Souvenir d'Elise. *J. Douglas.*

# Orchid Notes and Gleanings.

## CATTLEYA LUTEOLA.

This distinct and very pretty species is now in flower in Messrs. Veitch's nursery, King's Road, Chelsea. It is not only distinct in itself, but it is also valuable from being an early winter flowering species. It is not such a handsome plant as C. citrina, the shade of yellow is paler, the lip is orange with a rosy tint at the throat. There were several plants in flower. This species has several synonyms—C. modesta of Meyer; C. Meyeri, Regel; and C. flavida, Klotsch. It was described by Dr. Lindley as C. luteola in *Gardeners' Chronicle*, 1853, p. 774, and I believe recognised by Reichenbach fils under that name. It has also been grown under the name of C. Holfordi, but on what authority I am not able to say. It is a Brazilian species, and probably requires to be grown in the warmest end of the Cattleya-house. It is well figured in the *Botanical Magazine*, t. 5032, from a specimen with five flowers on a spike grown in Messrs. Rollisson's nursery in November, 1857.

## CYPRIPEDIUMS.

*C. vexillarium* is also very nicely in flower; it is, perhaps, not such an elegant plant as one of its parents, C. Fairrieanum, but it has a considerable resemblance to that fine species, showing just a trace of its seed-bearing parent, C. barbatum.

*C. Leeanum superbum* is plentifully in flower, and is remarkably beautiful; the difference between this and C. Leeanum, raised at Burford Lodge, is very striking. The highest prize fell to Messrs. Veitch, owing to the use of the pollen from C. insigne var. Chantini. The variety from which Sir Trevor Lawrence's plants were raised was evidently not so good as C. insigne Chantini. The other parent is C. Spicerianum.

In Messrs. Veitch's nursery there are also groups of Lælia autumnalis and L. anceps. There are many spikes, and amongst them some handsome varieties. The recently introduced white forms of L. anceps have so far been a failure. I do not hear of any one having it in flower. In some cases the plants have made a second growth, but even these do not seem to show flowering-sheaths. A number of distinct white forms intermixed in such a group as that in Messrs. Veitch's large Cattleya-house would be charming.

## CATTLEYA MAXIMA (*Lindl.*) DOCTORIS, *Rchb. f.*

The Hon. and Rev. J. Townsend Boscawen kindly sends me a two-flowered raceme of this Cattleya. Though it is very meritorious in its deep bright rose tints, yet it appears to be even more remarkable in the dark reticulations of the lip, which are much more conspicuous underneath than is usual. It is a very fine thing. *Reste à prouver* whether it is an accidental sport, or a constant individual, or a variety. *H. G. Rchb. f.*

## AËRIDES LEONAEI.

The *Bulletin of the Royal Tuscan Society of Horticulture* for November contains a coloured figure of this beautiful species, in which the flowers are more loosely arranged than usual in the genus, and the segments as well as the lip tipped with rosy-lilac.

# The Flower Garden.

The sharp frost has made it impossible to proceed with ground work of any kind or the replanting of trees and shrubs for the present; but there are many jobs that can be done nevertheless. Conifers would be better if they were looked over annually for the purpose of pinching out the points of any branches that are making excessive growth, and in any case where more than one central leading shoot has been formed, the best placed one should be retained, the others being cut away. Due attention to these matters assists to keep the trees in symmetrical form. The Coniferæ would be greatly benefited by a good top-dressing of light rich mould or sandy loam, or any other similar material at hand, as no other kind of ornamental trees sooner repay labour and attention than Coniferæ, and now is the best time to perform this kind of work. If weather permits, all leaves now having fallen, every corner should be raked out, all dead wood cut out, and all rubbish collected into heaps and burnt. The ashes make excellent manure for lawns and for the flower-beds. The high winds and storms of late will have broken many of the old tree stakes, which should have attention at once, and have new stakes put to replace them and firmly tied—such as standard Roses, shrubs, and deciduous trees. *W. Smythe, Basing Park, Alton.*

# Fruits Under Glass.

## LATE GRAPES.

Experience has shown that no advantage, as far as the Grapes are concerned, is obtained by keeping them on the Vines after the end of December, although in some cases, to economise time and labour, it may be more convenient to extend this limit a little longer; but even under such circumstances the cutting of them should not be deferred beyond the end of January, because if after this date the Grapes are left on the Vines, it interferes with the proper course of pruning them. This should be done in dead winter, in order to ensure a simultaneous break, and to avoid the risk from bleeding, which would ensue afterwards if the pruning was long deferred. For these reasons I therefore recommend, as far as practicable, to cut the bunches at the earlier date if possible. As the time for this operation is drawing near, any preliminary requirements should be attended to forthwith, and in the meantime, should unfavourable weather prevail, advantage could be taken of such an opportunity to prepare the utensils for their reception. If bottles are to be used, these will require to be well cleaned, and a few pieces of fresh charcoal be put into each, and then be filled with pure water. In cutting the shoots off the Vines let them be cut back as far as the spur will admit, so that a good length of shoot is available to insert into the water; this will diminish the risk consequent upon inattention to filling with water, as the lack of it is fatal to good keeping, and results in much loss of fruit.

In the case of shoots with but little wood below the bunch it is not possible to put them far into the water; these will consequently require much more frequent attention as regards a supply of this element, and therefore should be placed together. When the Grapes are placed in the room, attend regularly to giving the needful supply of water; remove decayed berries from the bunches at short periods of time; keep an equable temperature of 40° or 45°, and use no fire-heat unless actually required at any time. Our ventilators open into a space beneath another roof, and therefore can be left partially open at all times.

After the Grapes are cut proceed to prune the Vines at once, and enforce this rule in respect to this important matter in earlier compartments, if not already done. At this season of the year the necessary cleansing of the houses should also be completed with the utmost despatch. *G. T. Miles, Wycombe Abbey.*

# The Hardy Fruit Garden.

## MANURING THE TREES.

Advantage should be taken when the weather is frosty to wheel manure into the fruit tree plantations. All kinds of trees should not receive the same treatment as to manuring. Dwarf trees on the Paradise stock can hardly have too much manure, as it is only by judicious feeding that good results can be expected. Trees grafted on the free stock require more care, for, as a rule, they are more inclined to grow to wood than to form fruit-buds. By manuring these we often do more harm than good. As an instance, we have here a number of trees of that very handsome Apple, Peasgood's Nonsuch, on the Paradise stock, which bear yearly fine crops of large well-coloured fruit. Now, these trees bearing heavily, can hardly have too much manure given them in the growing season. We have also a number of trees of the same variety on the free stock which hardly ever bears any fruit, although the trees are very healthy and grow vigorously. The fruit produced is also small and badly coloured; all the strength of trees seems to go to produce wood instead of fruit. This is a point that ought to be noted by all growers if they wish to be successful. These trees will now be root-pruned, but no manure will be applied.

## POOR KINDS OF FRUIT.

Another important matter which ought to engage the attention of growers is the large number of worthless varieties of both Apples and Pears. It would be much better, both for nurserymen and growers, if half or more of our present varieties were exterminated.

## PRUNING AND TRAINING.

The pruning and nailing of wall-trees should be pushed on when the weather is favourable. Our chief aim should be to get the walls covered as quickly as possible; and if the cordon system of tree training is adopted this can soon be accomplished. Should any of the trees not be making satisfactory progress, I would advise their being placed perpendicularly up the walls for a season. I have often seen this simple plan improve the trees in one year.

Any vacant space on south walls might be filled by planting Vines of Royal Muscadine, a variety which I consider the best for outdoor cultivation. When pruning Apples, grafts should be saved of any varieties that it is desirable to increase. I should always recommend a few varieties of Crabs to be planted in fruit gardens. The trees are very handsome in spring when in bloom, and also in autumn when covered with bright little fruit. One of the prettiest and freest bearers is the old Siberian Crab. There is also a new variety, very handsome, and larger, called the Dartmouth Crab, which ought to be planted by lovers of ornamental trees. *J. Smith, Mentmore, Bucks.*

APPOINTMENTS FOR THE ENSUING WEEK.

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| MONDAY, | Dec. 21 | Sale of Dutch Bulbs, at Protheroe & Morris' Rooms<br>Sale of Azaleas, Roses, &c., at the City Auction Rooms, by Protheroe & Morris |
| TUESDAY, | Dec 22 | Sale of 5000 Lilium auratum, from Japan, Excelsis, Dutch Bulbs, &c., at Stevens' Rooms<br>Special sale of Orchids in Flower, at Protheroe & Morris' Rooms |
| WEDNESDAY, | Dec. 23 | Sale of Lilium auratum, Shrubs, and Plants, at Protheroe & Morris' Rooms.<br>Sale of Hardy Plants and Bulbs, Roses, and Fruit Trees, at Stevens' Rooms. |

TWO letters, and as yet two letters only, have appeared in our columns with reference to the question of HONOURS FOR HORTICULTURE. They are, in tone and substance, diametrically opposite. For our purpose that is just as they should be. Our readers like, and we like, to see both sides of a question; nay, more, as it is very rarely that we have to do with a flat plane of two surfaces, but more generally with a polygon or many-sided matter, we prefer to lay before our readers all that can be said on one side or the other. For ourselves, we have the advantage of knowing our correspondents, and the point of view from which they respectively regard the question. We are not about to reveal anything that has been entrusted to us confidentially, nor intentionally to mislead by any pretence of exclusive information. It will suffice to say that the burning desire of one writer is to advance horticulture in public estimation; the ardent endeavour of the other to promote its welfare by every means in his power. The one thinks that stars, and ribbons, and gewgaws, and arrangements of initial letters appended to a man's name are matters to be ridiculed or even despised. The other feels that horticulture "wants a lift," and is really not particular in what way the rise comes, so long as the craft prospers in public estimation; and, moreover, considers the prospects of the proposed International Exhibition to be more or less directly concerned in the matter. The ultimate desire of both is the same. This being so, the only question between them would seem to be one as to the proper means of effecting what they both are yearning for; but really the question is not so simple. Are our two correspondents likely to agree upon the main point at issue—What is advance in horticulture? As it seems to us the one sees in it material prosperity for the individual—a big business, a large capital, a satisfactory balance at the banker's, an unclouded trade reputation—all excellent things no doubt. The other looks abroad and sees successful traders and honourable men of all callings decorated with this or that or the other Order. He feels that the whole class is honoured by the selection of special representatives as recipients of State honours. He sees that the colleagues of the recipient take occasion to celebrate the event with congratulatory banquets and the like; and if—poor human nature!—there should be some envies, and jealousies, and heart-burnings, at least they are kept out of sight. Again, he looks at home, and what does he see? Honours and State recognition accorded to military and naval men, to Government servants generally, and in most cases most deservedly—honours and State recognitions to politicians as a reward, not for services to the State, but as an acknowledgment of loyalty to party—honours and State recognition to hereditary grandees whose claim to such honours is mysterious to all save, perhaps, the recipient—honours and State recognition to ladies, not only of the FLORENCE NIGHTINGALE type, but to ladies who take part in petty party political warfare. This is what he sees, and he naturally thinks, Why should not horticulture participate in these good things? Surely its claims are as great as those of many others among the classes above mentioned? And to this question we can but answer in the affirmative. But, as things go in this country, where the conditions are so different from those which obtain on the Continent, we may ask, Would horticulture be benefited by such honours paid to its representatives? Was literature or poetry in any degree benefited when ALFRED TENNYSON became Lord TENNYSON? Was electrical science or the progress of telegraphy in the slightest degree enhanced when Professor WHEATSTONE became Sir CHARLES? Or, to come nearer home, was horticulture materially benefited when PAXTON became Sir JOSEPH? Is railroad engineering or steam navigation a bit the worse because WATT or GEORGE STEPHENSON remained Commoners to the end of their days?

To turn to individuals—who is there that thinks NEWTON is in any way glorified because he was knighted? Who thinks any the more of MACAULAY because he became Lord MACAULAY? Who



FIG. 113.—HISTORY OF MACAULAY. (SEE P. 786).

thinks any the less of FARADAY because he remained plain MICHAEL FARADAY? Upon the answer to be given to these questions depends, we think, the solution of the problem—Should horticulture receive State recognition? Looked at in this way, we can but think the respect and honour a man gets from his own fellows is the highest boon that can be conferred upon him *a fortiori*, and that to confer a State honour upon him—always excepting Government servants—is to reduce him to the level of successful party politicians, successful party politicians' wives, and successful municipal dignitaries. We would not be supposed to undervalue such distinctions when honestly won and appropriately awarded. Human nature hankers after such things, and the feeling is not necessarily ignoble nor unworthy. We are merely urging that the distinction, whatever it be, should be one appropriate to the individual and specially calculated, not merely to honour the man, which is the smallest part of the matter, but to give an impulse to the progress of the particular department of which the individual is the representative.

We agree therefore with the one correspondent that horticulture would be the better for a lift. We agree with the other correspondent that State honours, except under special circumstances, are of no benefit to the community, but only to the individual.

It does not, however, follow that State aid of another character might not give the fillip which is required to advance horticulture. A Ministry of Agriculture and Horticulture, to look after our material interests—a National School of Agriculture, Forestry, and Horticulture, to secure adequate training in the principles and practice of our profession—laboratories, libraries, experimental gardens, facilities for research of all kinds—these are things which, it appears to us, are far more urgently needed and far more likely to give the profession the desired impetus, than honours paid to successful individuals, however worthy.

We are trenching on a well-worn theme, but it is incumbent on us to do so at the risk of telling thrice-repeated tales, when we point out our own deficiencies in the matter of technical education as compared with the continents of Europe and America. We have perhaps fuller opportunities of seeing the results of the educational system adopted in other countries than many of our readers. We see men occupying only equivalent positions to our "young gardeners" coming here from Germany, from Denmark, from Belgium, and from America, to complete their practical education. Many of these men are not inferior in point of general education to the average of our University undergraduates, and they have this great advantage over our undergraduates in that they are not only capable of manual labour, but think it no derogation to undertake it at the lowest remuneration. These are the men who will give a lift to horticulture, and they will give it at our expense if we do not follow their example.

—— THE CHRISTMAS SEASON.—We must request our correspondents to send all matters intended for insertion in our next issue on, or previous to, Tuesday, December 22.

—— DR. PATERSON'S TESTIMONIAL. — We are informed the subscription list will close on Christmas Day, therefore intending subscribers to the fund will greatly assist the movement by sending early to Mr. R. P. CAGIE, Bridge of Allan, N.B.

—— ROYAL APPOINTMENT. — We learn that Messrs. WEBB & SONS, of Wordsley, Stourbridge, have recently been appointed Seedsmen to the QUEEN.

—— THE NEW MAYOR OF CHESTER.—Mr. G. A. DICKSON, senior partner in the old firm of JAMES DICKSON & SONS, Dolgelly, gave a supper on December 12, in commemoration of his being made Mayor of Chester this year, to all those employed at these nurseries, at the "Angel" Hotel, Dolgelly.

—— HERITIERA MACROPHYLLA.—We are indebted to the courtesy of Professor MAXIME CORNU, the Director of the Jardin des Plantes at Paris, for a magnificent specimen of the Looking-glass tree, mentioned in our last issue. The largest leaf sent measures upwards of 18 inches in length, and 8½ inches in breadth. The silvery colour of the under-surface is very beautiful. But what is of more interest is a raceme of the curious seed-vessels, resembling the samaræ of the Maples, but in fives instead of in pairs, and little less in size than native specimens. The flowers are unisexual; whether in the Paris specimen, the flowers were artificially fertilised we do not know.

—— JARDIN D'ACCLIMATATION OF GENEVA.—We have received from M. CORREVON a catalogue of seeds of alpine plants, which may be had from the Director of the garden, and which is well worth the attention of those interested in such plants. Copies may be had on application to M. H. CORREVON, Jardin d'Acclimatation, Plainpalais, Geneva.



FIG. 184.—PINUS TUBERCULATA. (SEE P. 786.)

—— THE "BOTANICAL MAGAZINE."—The following plants are figured in the December number :—

*Aloe Bainesii* (t. 6848).—This is one of the Tree Aloes figured and described in our columns in 1874 by Mr. DYER. It forms a tree with stout trunk, 40—60 feet high, branching in a forked manner near the top, each branch bearing a number of recurved, channelled, lanceolate, remotely toothed leaves. The flowers are very numerous, and arranged in dense cylindrical erect racemes; each flower rosy-pink, oblong cylindric, with a short six-parted limb, the segments of which are green. It is a native of Natal and Kaffraria.

*Raphithamnus cyanocarpus* (t. 6849).—A Chilian evergreen tree, 15—20 feet high, conspicuous for its small ovate bright green leaves, gold-coloured spines, and numerous small tubular lilac flowers, with an irregular spreading 5-lobed limb. The flowers are succeeded by small bright blue berries. *Verbenaceæ*, t. 6850.

*Rhododendron javanicum var. tubiflora.*—A form of javanicum with paler flowers and longer calyx-tube. Introduced from Sumatra by Mr. CURTIS for Messrs. VEITCH (t. 6850).

*Pogonia pulchella.*—A curious terrestrial Orchid from Hong Kong, with globose annulate tubers, cordate ovate leaves, bronzy-green above, red beneath, with prominent convergent nerves, studded with whitish hairs. The flower-stalks leafless, 4—5 inches high, and bears two flowers near the top, each about 1½ inch across, with linear yellowish segments, and a scoop-shaped rose-coloured lip (t. 6851).

*Crocus Korolkowi and C. aerius* (t. 6852).—Two spring flowering Crocuses. C. Korolkowi is like the common yellow Crocus, but has the segments of the perianth flushed with brown at the back. It is a native of Turkestan, and has recently been discovered in Afghanistan. C. aerius is like C. biflorus, but is not feathered on the back of the segments. It is a native of Asia Minor.

—— "THE CITY DIARY FOR 1886."—The public will much appreciate this useful publication, containing as it does, besides blank pages for entries for every day in the year, a great deal of information about matters connected with the City proper, and with larger London as well.

—— CALVERT'S "MECHANICS' ALMANAC."—An almanac and something more, there being a miscellaneous collection of facts of service to workers in metal, wood, and other materials; and as being of service to horticulturists may be mentioned measurement of areas of solids, the preservation of materials from the effects of the weather, cost of buildings by cubical contents, strength of boiler-plates, colours and the eye, &c.

—— PEAR GILOGIL.—The origin of this name has been asked for by a correspondent. The French way of calling this Pear is Gilles-ô-Gilles, and no doubt the word Gilogil is merely a corruption of the foreign one. According to *Le Dictionnaire de Pomologie*, the Pear received this name from the following circumstance :—A bishop was inspecting his espaliers in company with his gardener, and being struck by the beauty and size of this Pear, exclaimed, "Gilles! ô Gilles, what fruit!" The author of *Le Dictionnaire* says he made the extract from a book on fruit trees without the author's name, in the library of the Jardin des Plantes, and cannot give a nearer clue.

—— VINE DISEASES.—The Italian Ministry of Agriculture has authorised the formation of an International Exhibition in the Royal School of Vine Culture and Œnology (wine making) at Conegliano, near Venice, for the special purpose of getting together a collection of implements and machines destined for the application of lime and other remedies for mildew and Peronospora, in Vines. The implements, such as pumps, syringes, spray producers, will be tested practically, and prizes awarded as follows :—One Gold Medal and 500 lire (francs); three Silver Medals and 150 lire with each; five Bronze Medals. The Government will also purchase premiated instruments to the value of 1000 lire, for the purpose of distributing them in agricultural schools. Applications for permission to exhibit should be sent to the "Direzione della R. Scuola di Viticoltura ed Enologia in Conegliano, Italy," before February 22, 1886, and all machines must be sent to the model farm of the School before March 1, 1886. The trials will commence on March 2.

—— COVENT GARDEN MARKET AND CHRISTMAS SUPPLIES.—The market is now showing the approach of the Christmas season by the quantities of Christmas trees and decorative material, such as Mistleto, Holly, Ivy, Laurel, Privet, &c., within its boundaries. For some days past Mistleto has been arriving in waggonloads, and doubtless will continue to do so until the 25th. Of Holly entire trees of 8—10 feet or so in height, and covered with berries, besides large quantities of cut branches (which are also full of berries) have been received at Covent Garden for about an equal time; both these plants appear to be more rich than usual in berries, which form the real decorative feature. Oranges and Lemons are arriving in large consignments from abroad, chiefly Spain, and from there also come various nuts and other fruits, as Barcelonas, Chestnuts, Pomeloes, Melons, and inferior Grapes. Home-grown Grapes, of very good appearance, such as Lady Downe's Seedling, Black Alicante, &c., are rather plentiful. Some Oranges, besides Apples, may be seen from America. Nuts from other parts than Spain consist of Cocoa-nuts, Brazils, Lee Chees, &c. Custard Apples, principally from Madeira, are very plentiful. Salads of a nice size are now in, and consist of Lettuce, Endive, Celery, Radishes, &c. In the way of cut flowers, Azaleas, Violets, Narcissi, Gardenias, various Orchids, and Eucharis, are the leading things, and a few Roses are seen here and there. Lilies of the Valley in pots have begun to come in, chiefly in combination with Tulips and Ferns.

—— HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* took place on Tuesday, December 8, at the rooms, 1, Henrietta Street, Covent Garden. Amongst those present were Mr. John Lee, Chairman; the Hon. and Rev. J. T. Boscawen, Dr. Masters, and Mr. C. Eliot, Boston, U.S.A.; Dr. Hogg, Rev. F. H. Gale, Rev. T. Flintoff, Messrs. C. T. Druery, Collings, Upcott Gill, G. Bunyard, H. Turner, and the Secretary. The discussion was opened by Dr. Masters on "Town Gardens and the Plants most Suitable for them," and a very interesting discussion arose on the subject, many of the facts and illustrations brought forward by Dr. Masters being evidently new to most of those present.

—— THE DIRECTORATE OF KEW.—We believe that Mr. W. T. THISELTON DYER, who has acted for some years as Assistant Director, has been appointed Director of the Royal Gardens, Kew, although no official announcement has yet been made. As to the propriety of this appointment there cannot be a dissentient voice. Mr. DYER has shown himself a competent and zealous administrator; he has not only a wide knowledge of botany, but has the tact and instinct of a good cultivator and the eye of a landscape gardener. The duties of the office are now so multifarious, and involve so many important interests, colonial as well as domestic, beyond the mere supervision of the gardens, that the selection of an assistant to Mr. DYER must needs be a matter of serious consideration. Formerly, before the work undertaken at Kew had become so extensive and laborious, a clerk or two could do the work of Assistant Director, but under existing circumstances the appointment of Assistant Director, and the duties to be fulfilled by him, become almost as serious matters for determination as the Directorate itself. It would seem to us that the requirements of the case demand a man of administrative ability, one with a special knowledge of economic botany, familiar with the natural resources of our colonies, tropical and otherwise, and of the best means of promoting their development—one competent to deal with the requirements of Indian and colonial plantations.

—— BOOKS, &c., RECEIVED.—*The Golden Gate and Silver Steps.* By SHIRLEY HIBBERD (E. W. ALLEN, 4, Ave Maria Lane, E.C.).—*Transactions of the Royal Irish Academy of Science* (Academy House, 19, Dawson Street, Dublin). — *Orchid Growers' Manual.* By B. S. WILLIAMS, 6th edition (London: Victoria and Paradise Nurseries, Upper Holloway, N.).—*Convention Phylloxerique de Berne: Execution en Belgique de l'Article 9, § 6, de la Convention du 3 Novembre, 1881 (2me liste)* (Brussels: V. MONNOM, Rue de l'Industrie 26).—*The Vegetable Garden.* By MM. VILMORIN-ANDRIEUX. English edition. (JOHN MURRAY.)—*Physiological Botany.* By GEORGE LINCOLN GOODALE. (IVESON, BLAKEMAN, TAYLOR & Co., New York)—*Report of the Board of Control of the New York Agricultural Station.*—*Arbres, Arbustes et Plantes Ornementelles, cultivés . . . dans la région . . . entre Cannes et Menton,* &c. Par F. FORCKET.—*The Date Palm in India.* By E. BONAVIA, M.D. (Calcutta: THACKER, SPINK & Co.)—*The Praise of Gardens.* By ALBERT F. SIEVEKING and E. V. B. (ELLIOT STOCK, 62, Paternoster Row.)

—— GARDENING APPOINTMENTS.—Mr. CHAS. HEWETT has been appointed as Head Gardener to E. C. BARING, Esq., Daylesford House, Chipping Norton.—Mr. WILLIAM THORNHILL, of Holker Gardens, has been appointed Head Gardener to CHARLES T. HOARE, Esq., Bignell, Bicester, Oxon.

## PINUS TUBERCULATA.

THE specimen from which our illustration (fig. 184) was taken was obligingly furnished us by Mr. Baker of Bayfordbury. In his rich pinetum the plant forms a bushy tree of medium height, with rough brown bark. The smaller branches spread horizontally, and turn up at the tips. The young herbaceous shoots are greyish-green, destitute of leaves at the base. The buds are cylindric, pointed, purplish, covered with whitish resin. The foliage is of a greyish-green colour. The leaves are in threes, each 4—6 inches long, 3-sided, saw-toothed, and pointed at the top. In cross-section the hypoderm cells are seen to encircle the whole leaf, and to wrap round the resin canals, of which latter there are two near the lower epidermis. The male catkins (observed on a tree at Pampesford in 1883) are in dense cylindrical masses, each about half an inch long, rich chestnut-brown in colour. The young cones are in whorls, each stalked, erect, or slightly inclined downwards, oblong-obtuse, purplish-green, with the scales strongly spine-pointed. As to the matured cones, we may refer to Mr. Smith's drawing, which shows their appearance better than words could do. The botanical history is so well known, that happily there are few synonyms to record. It is not necessary either to give a full botanical description of the tree, which may be found in the recognised text-books, but the following particulars, taken from an article in *Harper's Magazine*, may appropriately be given. The sketch of the tree, obligingly furnished by Sir Joseph Hooker (fig. 183), will show one aspect of the tree in its native home on the Californian Sierras :—

"PINUS TUBERCULATA.—This curious little Pine is found at an elevation of from 1500 to 3000 feet, growing in close willowy groves; it is extremely slender and graceful in habit, although trees that chance to stand alone outside the groves sweep forth long curved branches, producing a striking contrast to the ordinary grove form. The foliage is of the same peculiar grey-green colour as that of the Nut Pine, and is worn about as loosely, so that the body of the tree is scarce at all obscured by it.

"At the age of seven or eight years it begins to bear cones, not on branches, but on the main axis, and as they never fall off, the trunk is soon picturesquely dotted with them. The branches also become fruitful after they attain sufficient size. The average size of the older trees is about 30 or 40 feet in height and 12 or 14 inches in diameter. The cones are about 4 inches long, exceedingly hard, and covered with a sort of silicious varnish and gum, rendering them impervious to moisture, evidently with a view to the careful preservation of the seed.

"No other Conifer in the range is so closely restricted to special localities. It is usually found apart, standing deep in 'chaparral' on sunny hilland cañon sides, where there is but little depth of soil, and where found at all, it is quite plentiful; but the ordinary traveller, following carriage roads and trails, may ascend the range many times without meeting it.

"While exploring the lower portion of the Merced Cañon I found a lonely miner, seeking his fortune in a quartz vein, on a wild mountain side, planted with this singular tree. He told me he called it the Hickory Pine, because of the whiteness and toughness of the wood. It is so little known, however, that it can hardly be said to have a common name. Most mountaineers refer to it as 'that queer little Pine tree covered all over with burrs.' In my studies of this species I find a very inte-

resting and significant group of facts, whose relations will be seen almost as soon as stated :—

"1. All the trees in the groves I examined, however unequal in size, are of the same age.

"2. Those groves are all planted on dry hill-sides, covered with 'chaparral,' and therefore liable to be swept by fire.

"3. There are no seedlings or saplings in or about the living groves, but there is always a fine hopeful crop springing up on the ground once occupied by any grove that has been destroyed by the burning of the chaparral.

"4. The cones, all of which are persistent through life, never discharge their seeds until the tree or branch to which they belong dies.

"A full discussion of the bearing of these facts upon one another would perhaps be out of place here, but I would, at least, call attention to the admirable adaptation of the tree to the fire-swept regions where alone it is found. After a grove has been destroyed the ground is at once sown lavishly with all the seeds ripened during its whole life, and which seem to have been carefully held in store with reference to such a calamity. Then a young grove immediately springs up out of the ashes—beauty for ashes. *The Coniferous Forests of the Sierra Nevada.*

## PLANT PORTRAITS.

ANDROMEDA FASTIGIATA, *Garden*, September 19.
EPILOBIUM OBCORDATUM, *Garden*, September 5.
MUSCARI AZUREUM, *Gartenflora*, t. 1199.
MUSCARI HELDREICHII, *Gartenflora*, t. 1199.
PRIMULA ARCTOTIS, *Gartenflora*, t. 1198.
PRIMULA MINIMA, *Garden*, September 5.
PRIMULA PUBESCENS, *Gartenflora*, t. 1198.
RHODODENDRON DALHOUSIANUM, *Garden*, September 26.
RHODODENDRON DENNISONI, *Garden*, September 26.
VERONICA PINGUIFOLIA, *Garden*, September 19.

## Notices of Books.

**The Orchid Grower's Manual.** 6th edition. By B. S. Williams, F.L.S., F.R.H.S. London, 1885.

Orchidists, wherever they may be, will hail with pleasure Mr. Williams' new work, which in every respect far excels the former editions of the *Orchid Growers' Manual*, which have hitherto been so useful as a reference for the identification of Orchids, and a guide to their culture in every part of the world where the English language is spoken, indeed its usefulness has not been limited to those regions, for it has been translated into Russian by Mr. Wolkenstein, and published in that language—a fact which gives one of the highest possible testimonials to the esteem in which the author's vast knowledge of Orchids and their culture is held by Orchid growers in all parts of the world. In the handsome volume before us Mr. Williams has succeeded in producing a work well worthy to bear his name, and with what care and research it has been produced a perusal of its contents discloses, for in addition to the description of each species, the country from whence it comes, its commonest synonyms and references where figured are given, the last item being the chief new feature in the edition, and one likely to be of inestimable service to those who wish to make acquaintance with the plants before they see them in flower.

The volume of 660 pages commences with the introduction, followed by exhaustive articles on all the important operations connected with Orchid culture, such as potting, watering, resting, temperature, &c., also pleasant and instructive matter on the habitats of tropical Orchids, the collecting of Orchids, and the treatment of those newly imported, raising Orchids from seeds, &c. Then follows an alphabetical list of genera, species, and varieties, each carefully described, and many illustrated by cleverly executed engravings; the whole being brought up to date by an addendum and completed by an index of all the plants enumerated. The work is profusely illustrated, the larger number and the most striking of the illustrations having appeared in our own columns—well printed, and elegantly bound, and, considering the amount of accumulated knowledge requisite to produce such a work, and the time and patience necessary for the verification of the references given, it is a marvel how it can be published at the price. We are surprised to see little or no reference to our Orchid Supplements of this year, which contain a greater amount of original matter within the necessary limits than has ever before been got together. The *Orchid Grower's Manual* is published by Mr. B. S. Williams at the Victoria and Paradise Nurseries, Upper Holloway, London, N.

**"Brownsmith's Boy."** By G. Manville Fenn. (Blackie & Son.)

Mr. Fenn in this work shows himself to be a good practical gardener as well as a first-rate writer of books for the amusement of boys. The story is that of an orphan lad who is adopted as an apprentice by a kindly market gardener, and who goes through many stirring adventures in what might have been expected to be a hum-drum profession. We feel inclined to quarrel with the concluding chapter, in which the hero deserts the pruning-knife for the sword. The proper ambition for a gardener is well put by the charmingly described "Old Brownsmith": —"A man who has brains may go on learning and making discoveries, not discoveries of coutries and wonders, but of little things that may make matters better for the people who are to come after him. Then he may turn a bit of the England where he works into a tropical country by covering it over with glass and having a stove; then some day, if he goes on trying, he may find himself able to write F.R.H.S. at the end of his name." But though there is, perhaps, rather a superfluity of fisticuffs, the book is as thoroughly sound in moral tone as in horticultural common sense, and we can cordially recommend it as a present for boys generally or for juvenile gardeners in particular.

## NURSERY NOTES.

CYCLAMENS AT MESSRS. PAGE'S, TEDDINGTON.—In an age that has seen more improvements in horticulture than any time previous, one is not surprised to find a class of plants only a short time back looked upon as "very bad to do," and even when successfully cultivated hardly repaying for the labour, &c., expended on them, now grown in vast numbers and brought to a degree of excellence by the skilful and patient crossing of the best types, and weeding out of the poorer varieties, that must surprise even the cultivators themselves. Several firms have become famous for their own particular strains, and it would be almost an impossibility to mention one strain and affirm its superiority over the others, although some strains are better known and brought vividly before the public by continual advertising. While writing of advertising we must admit that as yet we have not come across a flower in any way resembling the "fearful and wonderful" woodcuts of Cyclamens (?) that one sees in catalogues, &c., and which many people would fail to recognise as a Cyclamen if it were not named as such. We trust that the flower (?) represented by the above-mentioned woodcuts is not the type that specialists are aiming at.

At Messrs. Page's nine houses are devoted to the culture of this flower, and over 30,000 are grown. The plants for the most part are fifteen months old, and for vigour, compactness of habit, and abundance of excellent flowers are well able to compare favourably with other well known strains.

The fifteen-months old plants are all in 4½ to 5 inch pots, and their flowering qualities may be estimated when we state that three dozen fully-expanded blooms are a fair average; and from this statement some idea can be formed of the imposing spectacle of a houseful. As may be supposed, there is a great diversity of colour, but even in such a grand even strain some plants are conspicuous by their superior blooms, one variety in particular, named Albion, a massive ivory-white, could easily be distinguished amongst two or three dozen other good types of white, by even an ordinary observer. The petals of this flower were 1⅛ inch in breadth, and nearly 2 inches in length. Two other plants could not fail to be recognised, both good forms—one the colour of a bright Phalænopsis Schilleriana, and the other just the colour of a La France Rose. From a florist's point of view, any flower that deviates from its true points would, of course, be condemned, but we think exception may be taken to a "break" that has its petals neatly twisted over, so that they form a level surface; plants of this description have a striking appearance amongst the others. The persicum type is the more largely grown, in fact some of them are so large as readily to be confounded with a giganteum. Other things besides Cyclamens are well done here, including Odontoglossums, of which a nice batch were looking very vigorous. Gardenias and Camellias, too, are largely grown, and look in the pink of condition.

MESSRS. CLARKE, TWICKENHAM.

The collection of Cyclamens grown here has been before the public for some time, in fact we believe it is one of the oldest strains, and the fact of holding its own for so long says much for it. A great number were not in flower at the time of our visit lately, but judging from their appearance expectations formed of their success will not be misplaced. Amongst those in bloom no colour could be said to predominate very largely, as the shades of colour were most numerous, and all good, no "washy" ones being visible. The various colours of the eyes of flowers, with the rest of the petals white, was remarkable, nearly every possible shade, from almost purple to the most delicate blush, was to be found. Some very fine salmon-tinged blooms could not but be observed in passing, and of the whole collection, in flower, nothing but the highest praise could be accorded. When the main part of the collection is in bloom it must present a fine appearance as the plants are well shown off on sloping stages.

MESSRS. WALKER, TEDDINGTON.

Here, too, Cyclamens have found a congenial home, and thrive and bloom luxuriantly. A large portion of this collection is yet to bloom, and as the part in bloom is used for cutting from, one cannot expect too much; but notwithstanding, an opinion highly in their favour could not but be formed. In this collection, too, were to be found specialities, the best in our opinion being a spendid white with greenish stems—a real gem; a semi-double persicum, lightly tipped with carmine, was very telling; also some very good darks, salmons, and pinks, made a fine contrast. The flowers in this collection are for the most part nice and short in the petal, and consequently are broader than usual, giving the plants a very robust appearance: the foliage, too, is correspondingly "stocky." *C. I.*

## THE ORIENTAL PLANE TREE.

PLATANUS orientalis [and its varieties], that ornamental introduction of 300 years ago, native to the Levant, Asia Minor, and Persia—not the American or Western Plane tree, P. occidentalis—has been largely planted in recent years in situations where, as on the Thames Embankment, the million can admire it, and where, as time passes, our Planes, like our Oaks, will inspire veneration, and elevate the thoughts.

Referring briefly to the Planes of history, among the many famous trees growing on the shores of the Mediterranean, one of the greatest antiquity, most justly venerated, grows in the pass of Thermopyle. None of the Planes of our own country have yet lived long enough to have attained old age, according to the period of their existence in the East. There are, for example, the so-called "Seven Sisters" growing on the shores of the Bosphorus whose age has never been discovered, and no remaining record is likely now to reveal it; but they are known as a matter of undoubted history to have sheltered a party of English Crusaders in the eleventh century. They are believed to be the oldest Planes in the world.

Such was the beauty of a large Plane tree standing in its prime on the soil of Greece, on land which was no doubt sheltered, watered, drained, and fertile, that Xerxes, on his invasion of that heroic little country, was fascinated by it, and remained chained to the spot for a whole day. A Napoleon or a Gladstone would have cut it down and marched on, but Xerxes remained quite entranced gazing upon the tree and sitting down beneath it. In war and gardening delay of this kind is fatal, and so it proved to the luxurious monarch, who passed on at last and was completely beaten by the Greeks. Among other famous and historic Planes Pliny mentions an aged tree which he himself had seen in Phrygia, and among whose boughs the vain musician Marsyas, as the story ran, had been suspended by Apollo when he flayed him alive after his defeat, the unhappy mortal having challenged Apollo to a trial of skill. Another Plane of romantic interest was that which

Helen of Troy planted in Arcadia, and which Pausanias described as a tree of great beauty, as well as size, at the age of 1300 years.

Interesting notices of another tree were successively published by the three travellers, Hobhouse, Buckingham, and Chandler, who each described a noble Plane growing on the banks of the Selinus, near Nostizza. To this tree has been assigned a diameter of 15 feet, a deceptive measurement, which must have included spurs at the base, and which conveys to the mind no idea of the size of the tree. In Persia this stately tree, called there the Chinar, is frequently met with in avenues, or in company with the Lombardy Poplar, affording shade and ornament to the dwellings of the peasants, or along the margins of the streams and watercourses.

Planes may readily be found in England 14 feet in circumference, measured fairly at 5 feet from the ground, and reaching a height of 80 feet. They require suitable soils and situations for their greatest growth. They are not perhaps fastidious, but there are two or three essentials to their most successful cultivation, which must not be overlooked in planting them.

Unlike the Sycamore, an Acer which was dubbed Pseudo-Platanus, and which runs over the hills of Europe, a native of Italy, Switzerland, and Germany, and doubtfully indigenous in Britain, a hardy tree, with stout twigs bearing storms well, the Plane loves shelter. It is a tree for vales rather than hill-tops, and requires proper soils, while the Sycamore can accommodate itself to a variety of soils as well as sites. The Plane cannot endure a clay soil, and the shade of other trees proves obnoxious to it. It also requires good land, light rather than heavy, with natural drainage, but at the same time moisture at the roots, and a deep, free soil. In proper situations, in short—and, it may be added, wherever the Lime grows best, as single specimens or as groups upon the lawn, where it spreads itself wide and may be distinguished from the Maples at a glance by the scaling off of the bark and the round rough fruit—the Plane may be often observed. I noticed some very noble specimens last summer at Hursley in the shrubbery among other trees, all favourites of the late Sir William Heathcote. The Plane is a common ornament of English parks and gardens, as any observer of trees may know if he consults his memory (having travelled much), or Mr. Loudon, if he has read that delightful writer.

An enthusiastic admirer of the Plane has said of it that there is a mild majesty in its aspect and a grace in its form and in the disposal of its foliage, which admits light playing amongst its leaves and creates shade beneath the canopy of its branches, and renders it one of the best models of elegance which the vegetable kingdom can exhibit. Owing to its great beauty, therefore, as well as its tolerance of smoke, the Plane is obviously the best tree for the embellishment of great cities, the best for populous and conspicuous places for the improvement of public taste. *H. E.*

## PROLIFERATION IN FERNS.

(*Continued from* p. 505.)

ROOT proliferation, too, which is generally gemmiferous, but occasionally tuberous, as before described, is among the most prolific forms of reproduction, though from its nature not so obvious as are the other forms, and unless closely examined likely to be passed as ordinary cases of spore production. The species possessing this form of proliferation spread something after the manner of the stoloniferous and radicant species, covering, however, less ground, and form large or even extensive masses, in proportion to the stature of each, by proliferous reproduction alone. The foregoing instances are sufficient to show that proliferation acts as a very considerable aid to reproduction in many of the species in which it occurs, and to some extent in all. It also operates as an aid to diffusion. This diffusion, so far as we can observe, is relatively limited, but extending over many years or generations would, no doubt, be considerable; in some it is automatic, performed by the plants themselves, which stretch their fronds to their farthest limit, there root and form a plant, and repeat the action indefinitely. This may be described as rambling by regular strides. In root proliferation, where the threads are extended through or along the surface of the ground, the locomotion is of a more humble character, and may be called creeping, being more decidedly in character with the snail's pace. These methods of spontaneous volition are best described as migrations. In other cases the process is involuntary, and results from the ordinary operation of external agencies, of which water is the principal. The disconnected buds are carried along by the rills, which are formed on sloping ground in heavy rains, or floated in the water which accumulates and often floods more level surfaces. Rivers and their tributaries aid the dispersion, carrying the buds of the aquatic species which grow on their banks often miles in their course. Indeed, it is quite conceivable that but for the destructive influence of sea-water some of these buds, with their acquired strong vitality, might be carried by currents, when washed out to sea (as the buds of the Guiana plants often are), and landed on other shores, just as seeds frequently are, there, should fortune strand them in a favourable spot, to become established. Newly formed islands acquire their vegetation in this way, but on such Ferns are rare. This rarity is, perhaps, as much due to the absence of the humid and sheltered situations of growth on the shores of such islands that the majority of Ferns require, as to the inimical effects of salt-water on spores or buds in their transition from one land to another. It is probable, in fact, that the spores, of some species at least, will bear immersion for a time, for it is most likely to this manner of distribution, carried adhering to, or embedded in, other floating material, that Acrostichum aureum, Lin., which grows in the brackish water in river estuaries, is found in most warm temperate and tropical lands. Even within the limits of immersion they will bear there is doubtless much sacrifice of life, incidental to the varied fortuitous circumstances of such a mode of transference, among the buds which are dependent on water for their dispersion, but those that survive are enough to make the means as a distributive agency a success.

We have now seen that proliferation is a successful agency both in reproduction and distribution; in the former more or less largely in the several species affected, and in the latter to a limited but decided extent, with the possibility of great effect in the long course of time. Let us now enquire whether there exists any defect in the ordinary generative condition of the proliferous species that makes this supplementary form of reproduction necessary. As an evolutionary result so greatly assisting reproduction it seems remarkable that in the majority of instances, or almost all, proliferation is accompanied by abundant spore fecundity. The reverse of this one might have expected would obtain—that is, that this vegetative form of propagation would prevail, if not exclusively, at least most in plants with a restricted spore fecundity; just as certain mosses, which infrequently fruit, possess the facility of propagating otherwise; or, as I have several times witnessed, Fourcroyas retrieve the loss of their failure to produce fruit in flowering, by developing an aërial bud-plant in the place of every flower; and instances of somewhat similar propagation, apart from the normal generative method common to nearly all other forms of organic being, might be drawn from certain protoplasmic states of life. But this is not the case, and I have observed nothing to indicate that nearly all the proliferate Ferns could not maintain their own in every way in the competition of life with the non-proliferate if they were destitute of this aid. They are equally as prolific of spores, and generally exist under conditions equally, if not, as a rule, more, favourable for the generation by spores to succeed. As to the latter it is just possible that the conditions of life which in rare cases have been adopted may operate unfavourably, as, for instance, when the plants grow in or over running water, and the greater part of the spores as they fall are carried away by the current, and fail to reach any place in which they could succeed.

I must guard myself here, parenthetically, from the possible imputation of having overlooked numerous plants in which it may be urged analogy to this subject exists, which habitually reproduce their kind from buds, such as bulbs and various arundinaceous subjects, while still, in nearly all cases, retaining and exercising undiminished sexual generation; but a little consideration will show that this form of bud production, while of a character to afford an assured permanence to the species (in cultivation, at least), as is shown by the Banana, Plantain, Sugar-cane, Bread-fruit, &c.—plants which have abandoned the exercise of generative functions—is radically distinct. But beyond the fundamental difference of character of the budding in those cases alluded to, it is an integral and uniformly constant feature, common to large assemblages, while in Ferns it is limited to relatively few species, and fortuitous and acquired where it exists, as its presence or absence among the individuals of a species—of which I have before given instances, and shall have occasion to mention others presently—is proof. But now to return from this explanation.

I have before said that I write merely as an outdoor observer, not an experimental investigator, and consequently I may be in ignorance of facts which close investigation and experiment could alone reveal; which facts might possibly show that some of the proliferous species, from some condition of impotency in the spores, are not so fertile as their prolific spore production seems to indicate. But any general participation in such a condition, if it exists and operates at all, is exceedingly improbable. To determine it a series of careful experiments in cultivating the spores of the different species, with full knowledge of all the circumstances necessary to success, would be required.

I have, however, in mind a few cases, which may be taken as probably indicative of all, observed in their wild state, that are undoubtedly produced prolificly from spores. Such are Ceratopteris thalictroides, Brong.; Aspidium vivarum, Fée; A. Plaschnictrianum, Kze.; Nephrodium scolopendrioides, H. K.; Polypodium reptans, Sw.; Gymnogramma schizophylla, Baker; Hemionitis palmata, L., and others. These I have noticed springing up plentifully on the rocks and banks, or other surfaces on which they grow, under and about the old plants from which the spores had been shed. Some of these species, it may be objected, are not very freely proliferous. That is true, but then it must be acknowledged that, on the other hand, others of them constantly and abundantly are so; and for these reasons I cite them as, on the whole, average examples, not sought, but casually observed, where doubtless others might have been detected if examined with this view, which prove that proliferated Ferns are not generatively sterile. I admit, as just before suggested, that physical conditions of growth may in rare cases make this reproductive agency more or less ineffective. Ceratopteris presents an instance of how such a result does in its case to a very considerable extent occur. This is an aquatic species, and during the rainy season in Guiana it vegetates in far greater profusion than elsewhere from spores on the moist surfaces about the lakes and trenches in which the plants live, perishing to the same extent as the water shrinks with the advent of dry weather. The bud-produced plants, however, nearly always succeed, as, springing from the prostrate leaves of plants that from their favourable location have reached maturity, their permanent aqueous circumstances insure their survival. The aquatic state of Aspidium macrophyllum, Sw., in which most of the spores fall on running water, and are carried away, is a nearly similar instance, the bud-produced plants supplying the loss of spores. But there are exceptional cases in which proliferation seems to meet accompanying exceptional physical disabilities, and that do not affect the unquestionably favourable and successful general rule.

If, then, they possess no general countervailing defect, the proliferate species have a great reproductive advantage over the non-proliferate. I cannot assert, however, that the result which might be expected to follow this, viz., a greater preponderance in individuals of these species, obtains. Some of those which possess this reproductive advantage exist no doubt in large communities and vast abundance, but so also to an equal extent do others in which it is never found. Possibly there is some equalising law ruling the matter not readily detected or easily observed, when known, in its operations. Over-production in relation to area would defeat itself, and area is more or less restricted by the operation of the necessary atmospheric, physical, and mechanical conditions, beyond which, each according to its needs, these plants cannot extend.

The conclusions, then, these observations lead to are—that proliferation is a great aid in reproduction, but except, possibly, in some unusual instances in which the conditions of the environment are unfavourable, and which are very rare, there is no evidence that it is essential to the purpose which it

serves so greatly. This, however, does not cover the whole scope of its potential and operative agency.
*G. S. Jenman.*

(*To be continued.*)

## RARE OLD GARDENING BOOKS.

(A.D. 1612 TO A.D. 1641.)

One sunny Saturday in November last, having a leisure hour to spare, I wandered down by the side of the silvery Liffy in that particularly literary locality in Dublin known as the Essex Quay. It is a place thickly besprinkled with second-hand book-shops, into one of which I was tempted by seeing in the dusty window a thin octavo volume ticketed "*The Complete Herbal*, price 1*s*." The book proved to be full of small figures of plants copied from those in Gerard, Parkinson, and other works, "curiously engraved on 176 copper plates." It was, moreover, "a new edition," printed in London by J. D. Dewick, of Aldersgate Street, for Lackington, Allen & Co., Temple of the Muses, Finsbury Square: 1805. The published price, as stated on the plainly printed titlepage, was "Fourteen shillings, boards." In turning over the leaves of this little volume, after glancing at the portrait of the author or compiler —"James Newton, M.D."—as it appeared opposite the title, I found it contained "an alphabetical table of the names of such authors, both ancient and modern, as are often cited in this volume, their principal botanic writings, the year they were published, and the number of their icons [or plates] of plants, and also the country the authors were of." This list of old authors tempted me to buy the book, and one of the first entries to catch my eye was this: —"Joh. Theodorus du Bry wrote *Florilegia*, 1612, enlarged by Matthias Merian, 1641, folio." The principal reason why this particular entry appealed to me was the fact, that but a short time previously Canon Ellacombe, of Bitton, had very kindly lent me a copy of Merian's *Florilegium Renovatum* (1641), and in the absence of the original, by Du Bry (which, by the way, I should be very glad to see) this is the work to which I shall first refer. The book was published at Frankfort, and is a small folio about the size, and, say, half the thickness of Parkinson's well known *Paradisus, or a Garden of Pleasant Flowers*. In the beginning are various designs, plans, &c., and thirty-two plates, and after these come 142 plates of old garden plants, beginning, as do so many of the old works of the fifteenth and sixteenth centuries, with a plate of the "Crown Imperial," and ending with a double plate of what appears to be Yucca gloriosa. The last plate is unnumbered, and represents a leafy branch protruding through the centre of a flower of a double Rose, this, no doubt, being thought a very singular freak of Nature at the time. Merian tells us at the end of his preface that he has re-edited the work of Bry, and added more than thirty plates, these being those previously alluded to at the commencement of the book.

The plates represent, for the most part, the then popular garden flowers, such as Lilies, Tulips, Narcissus, Iris, Crocus, Pæonies, &c., and the beginning of the passion for "florists' flowers" is shown in the illustrations of Primulas, Auriculas, French and African Marigolds, double Roses, Poppies, Pinks, and Carnations, which, with Stocks single and double, Anemones, Ranunculus, and Sweet Williams, are scattered here and there through these pictured pages. I commend this old work to the attention of the ever-increasing lovers of Queen Iris, since many English, Spanish and German forms are figured, as also the great speckled flowers of S. susiana major (t. 50), and S. susiana minor (t. 60) (? = I. iberica). The Carnations have fringed edges, but some are very remarkable in size, those figured on pp. 52, 53, and 54, being nearly 4 inches in diameter, and very double.

Personally I am more interested in the Narcissi here represented than in the other flowers, and so in the main purpose to devote my more critical remarks to these lovely flowers of the springtide days. Plate 12 is devoted to three forms of N. Tazetta. On plate 13 is a four-flowered scape of Musart's orientalis, the "double Roman," the Jonquil both single and double (the latter being a peculiarly small variety), N. odorus, and N. serotinus, the small white autumnal species. Plate 14 shows N. poeticus, two forms of N. Tazetta, N. bulbocodium, and the small single-flowered Jonquil. On plate 15 are three or four forms of the Daffodil, single and double, a curious form of N. incomparabilis, having a wrinkled yellow cup like that of N. montanus, and a smaller variety of Hooped Petticoat or Corbularia. A very curious semi-double form of N. poeticus is figured on p. 16. The smallest flowered single Jonquil is figured on p. 117, and a form of N. "double Roman" on plate 123. On plate 134 is a fine seven-flowered spike of Musart's orientalis, also a three-flowered scape of a similar variety with larger flowers, and two forms of N. poeticus, one the late and the other the early-flowering stellate flowered kind.

Plate 135 shows three very singular long-crowned Daffodils resembling N. muticus, one yellow, and a larger and a smaller white. "Narcissus anglicus albus calice luteo," on the same plate, may be a deep cupped N. Tazetta; and there are also two figures of double flowered kinds, one, if not both, being N. poeticus fl.-pl.

Plate 136 contains figures of a large double Daffodil, also of a fine form of N. incomparabilis, a double yellow Daffodil called "double yellow Trombon," the cup only being double. On this plate, also, is the small white Hooped Petticoat, and three varieties



Fig. 185.—Narcissus hispanicus minor luteus amplo calice foliis reflexis.

which are called "Narcissus de Campe," and may possibly be wild hybrids near N. Bernardi. One has two flowers on a scape, the other two have larger stellate perianth lobes, the one white with a yellow cup, the other white with an orange-rimmed yellow chalice as crown.

All these plates, more especially the two last-named, are worthy of the attention of those interested in the early history of the Narcissi.

There are one or two double-flowered varieties of Iris illustrated in this book, also a giant form of the Lily of the Valley on plate 132. The Passion-flower is illustrated as a great rarity, and there are two engravings of the Mexican Tiger Iris, which, however, had not been introduced to gardens.

In Johnson's edition of Gerard's *Herbal*, p. 121, chapter 83 is devoted to figures and descriptions "of two feigned plants." One appears to be a Barbacenia, and the other is, without doubt, intended for Tigridia pavonia. Old Gerard did not believe there were such plants, or as he puts it (v., p. 122) "we assuredly persuade ourselves that there are no such plants but meere fictions and devices as we terme them to give his friend a gudgeon!"

Johnson, however, has appended a note in which he says, "These two have been thought commenticious or feigned, yet Bauhinius seemeth to vindicate the latter, and John Theodorus de Bry in his *Florilegium* hath set it forth. He gives two figures therof, this which we here give you being the one, but the other is far more elegant and better resembles a naturall plant . . . All that De Bry saith thereof is this: 'Flos Tigris ruber egregie, circa medium tamen pallet, albusque et maculatis: ex Mexico a Casparo Bauhino.' That is, 'Flos Tigris is wondrous red, yet it is pale, and whitish about the middle, and also spotted. It came from about Mexico; I had it from Caspar Bauhin.'" All of which proved to be quite true, seeing that the Mexican Tiger Flower is one of the most gorgeously beautiful realities in our gardens to-day!

In this fine old book we see that the English Iris were as fine then as now, particularly the large white variety, which has for many years existed as a great favourite in old gardens in the North of Ireland, to which tradition says it was brought by the Huguenots, who brought also the art of damask weaving, when driven from their homes in France. Double Anemones were also many and various, and the great-flowered Iris susiana also seems to have been a favourite of the time.

Another interesting old folio is the *Jardin du Roy*, by Pierre Vallet, Brodeur Ordinaire du Roy: 1623. It has a fine architectural frontispiece, having a view of a formal garden of the epoch in the centre, and effigies of Clusius and Lobel, one on either side. The plates are etched on copper, the short descriptions being in French at the commencement of the book. There are several plates of Narcissi, some original and the others for the most part copied from the *Florilegium* of Du Bry. The first Narcissus illustrated in this work is a most singular one. It is called "N. hyspanicus minor amplo calice, foliis reflexis," and has the reflexed perianth of N. triandrus, with a long trumpet like that of a Daffodil. Fig. 57 represents N. triandrus pulchellus, several N. Tazettas from Du Bry's book being also arranged on the same page. Fig. 65, "N. totus candidus patulo calice major," is a singular variety, unknown to-day, having four-flowered scapes of N. Macleayi-like flowers. Nos. 67 and 68 represent two fine large-flowered forms of N. triandrus.

The last work I shall now mention is *Theatrum Floræ*, folio, published in 1637. Both the frontispiece and ornate titlepage are well designed and beautifully etched on copper, flowers and figures being combined in a pleasing manner. The full title is as follows:—"*Theatrum Floræ*. In quo ex toto orbe selecti mirabiles, venustiores ac præcipui Flores, tanquam ab ipsius Dei sinu proferuntur." The imprint is, "Lutetiæ Parisiorum, apud Petrum Firens, A.D. 1637." It is a very interesting book, the plates being both faithfully and artistically drawn evidently by some masterly hand. The Narcissus plates commence at t. 15, on which page there are shown two forms of the "double Roman" variety, as also the single N. poeticus and its double variety. Plate 16 shows three forms of N. Tazetta, including a very fine form of the "paper-white" variety, so much esteemed as a forcing bulb in our gardens to-day.

Two varieties of N. Tazetta (and a good specimen of the mole cricket) are illustrated on plate 17, and so also the eighteenth plate shows us forms of N. Tazetta large and small, both yellow and white. Plate 19 is interesting as containing one or two varieties not often seen in modern gardens. One of these, called "N. omnium maximus sub albus, calice luteo," is as large as Sir Watkin or the Welsh Peerless, but is, as I imagine, in reality the same as a yet rarer kind which our good friend Mr. Walker has introduced to notice recently under the name of Dr. Gorman. Another peculiar variety, called "N. candidus medio luteus, patulo calice," looks very much like a small broad-petalled variety of N. Nelsoni—say N. pulchellus of our friend Mr. Barr. Another, "N. pyrenæ (?) flore albo amplo calice," resembles N. Macleayi, and there is on the same plate a two-flowered scape of a similar variety. Plate 20 shows us figures of seven or eight Daffodils (Ajax), both single and double. "N. hyspanicus, pumilus, flore luteo amplo calice," is either a small N. minor or N. minimus. Another, this time a giant variety, is called "N. luteus hisp. major amplo calice," and if not really the N. maximus of our modern gardens (Dutch form), it closely resembles that variety. The lovely white, or "Silver Trumpet," N. cernuus, is well figured under the name of "N. silvestris lotus albus amplo calice," and a yellow variety, quite like Mr. Barr's N. princeps, is called "N. luteus hyspanicus amplo calice flore nutante." A form of the common

double Daffodil is also shown along with a good figure of N. Eystetensis (= N. capax). Here again we find a figure of the extremely singular "Narcissus hyspanicus? minor luteus amplo calice foliis reflexis," having a long drooping crown or trumpet like a Daffodil, and reflexed narrow perianth lobes like some forms of N. triandrus. This is such a curious thing that I give a small tracing of the flower (fig. 185) in the hope that some modern groper after old Daffodils may recognise this as an old friend if he should perchance meet with it in his rambles during the next spring. On plate 21 are figures of three or four "Snowflakes" and of the "Snowdrop," also two forms of N. bulbocodium (Corbularia). A small variety, perhaps N. nivalis, is called "Pseudo-Narcissus montanus hyspanicus flore-aureo," being a small golden Hooped Petticoat. A very large variety, which I take to be the giant N. citrinus, or "straw-coloured Hooped Petticoat," is called "Pseudo-Narcissus Pyræneus flore subluteo, amplo calice juncifolius." As figured in this old *Theatre* it is evidently a large, bold flower, of good substance. On plate 22, N. odorus (Campernelle), N. odorus heminalis; the true Jonquil, single and double, are shown, and also the late-blooming white N. serotinus of Tangiers, under the name of "N. albus medio obsoletus autumnalis." Or is it N. elegans? At any rate, the leaves are shown as synchronous with the flowers, so that the last-named may, after all, be the one intended. On this same plate is a faithful figure of N. triandrus var. albus, so that one looks on the curious little "reflexed Daffodil" on plate 20 with all the more interest, seeing that this one is so truly drawn.

Of the many other garden flowers alluded to in this old work I need say but little. The Tulips were as good, perhaps, then as now. Not so the Hyacinths, which were thin and spire-like in spike.

Ornithogalums, Alliums, the "St. Bruno's Lily," and true Lilies are well represented. There is on plate 33 a sketch of the bulb of Lilium canadense most beautifully drawn; so, too, the bulb and inflorescence of Lilium chalcedonicum on plate 36. The "Chequered Daffodils," or Fritillarias, Crocus, Dog's-tooth Violets, Colchici and Iris "of sorts," as the bulb lists say, are also gracefully shown. That the Anemone was then a most popular "florists' flower" these old folio volumes amply prove, and the sketches of the Asiatic Ranunculus, of Cyclamens, of Roses, Carnations, Hepaticas, Primroses, and Bell-flowers, are enough to make one take up the ardent culture of hardy flowers as a very labour of love. One thing these old works put clearly before us, is the fact that the modern liking for hardy flowers is a *renaisance*, seeing that they were thus popular two centuries and a half ago. *F. W. Burbidge.*

## A SELECT LIST OF THIRTY PEARS, SUITABLE FOR GENERAL CULTIVATION.

(*Concluded from p. 527.*)

16. *Maréchal de la Cour* (syn. Conseiller de la Cour).—Large, handsome, and good, is the general verdict given of this Pear. Although handsome, it is singular how diverse and irregularly shaped they generally are, no two fruits being quite of the same form. When well grown the fruits are often very large—long pyriform shaped, skin uniformly freckled, greenish-russet, flesh tender, melting, very juicy, with a fine brisk acid flavour; should be gathered beginning of October, becoming fit for use middle of November. Tree of free growth, only moderately fruitful.

17. *Doyenné du Comice.*—Unquestionably the finest Pear in cultivation. Fruits large, roundish turbinate in shape, skin greenish-yellow, sometimes splashed with netted russet on one side and frequently coloured on the exposed side. Flesh white, buttery, extremely tender and juicy, sweet and richly flavoured. Fit to gather in the beginning of October, becoming fit for use during November. The tree is a free grower, succeeding well on the Quince. A moderate cropper: should be grown in every garden.

18. *Beurré Diel.*—This is one of the oldest of the good French Pears, and still one of the finest in certain situations. The fruits are large and handsome, turbinate in shape, and covered with freckled russet throughout. Flesh somewhat gritty, but sweet and pleasantly flavoured. Ripens generally at the end of November. Tree, a great bearer and a free grower.

19. *Fitmaston Duchess.*—One of the largest and handsomest of Pears in cultivation, and although not of the first quality it is held in the highest repute by growers for market. The fruits are very large, of regular pyriform shape, greenish-yellow in colour, becoming bright yellow when fully ripe. It bears some resemblance to examples of Marie Louise, both in appearance and the texture and quality of the flesh, although inferior to that variety. It requires to be grown on a wall to secure it in the best condition. It should be gathered early in October, and ripens towards the end of the month or in November. It was raised by Mr. Williams, of Fitmaston, and sent out under the name of Williams' Pitmaston Duchesse d'Angoulême—which name, being too long and misleading, was subsequently altered to Pitmaston Duchess.

20. *Glou Morçeau.*—A general favourite. This is one of the standard Pears in cultivation, of large size, fine handsome appearance, of excellent quality, and a free and constant cropper. When grown against a wall the fruits grow to a large size, and have a very clean skin, but they are not equal in quality to the smaller and rougher examples grown on pyramid or standard trees. The flesh of the Glou Morçeau is particularly tender and buttery, and sometimes richly flavoured, but is somewhat uncertain. The fruits should be allowed to hang on the trees until the end of October—as late as possible, or if gathered in succession a supply from the middle of November until Christmas may be maintained.

21. *Winter Nelis.*—By many this is considered to be the very best of Pears, and in its season it has certainly few rivals in point of quality. One great merit it possesses, that is, in being uniformly good, every fruit grown being of uniform quality. In regard to size it is wanting, for, excepting it is specially well grown, the fruits are small. The skin is greenish-yellow, almost entirely covered with rough brown russet, and the eye is nearly always wanting. The flesh is greenish, very melting, juicy, sweet, and richly flavoured. The tree is a tolerably free bearer, and the fruit requires to be gathered late in October, becoming fit for use about Christmas. It succeeds best on a wall or sheltered pyramid.

22. *Passe Colmar.*—In some situations there is no finer Pear grown than Passe Colmar. In others it is wanting in flavour somewhat. The fruits are generally below medium size, but where well cultivated they are sometimes large. Skin greenish-yellow, flushed on the exposed side with crimson. Flesh white, firm or crisp, juicy, and richly flavoured. Tree a great bearer. The fruit should be gathered at the end of October; fit for use during December.

23. *Zephirin Grégoire.*—This is by no means so generally cultivated as it deserves to be. The fruits are a little below medium size, roundish, skin pale green or greenish-yellow, somewhat uneven surface. Flesh white, melting, very juicy, and almost always richly flavoured. Tree a moderate bearer on the Quince, and requires a wall. The fruit should be gathered at the end of October; it becomes fit for use at the end of December and January.

24. *Beurré Rance.*—An old, greatly valued, and truly excellent Pear, but somewhat varied and uncertain in regard to quality. A good warm season is required to secure it in the very finest condition, and then it is extremely rich; at other times it is very watery and insipid. Fruit large, pyriform; skin green, rough, occasionally flaked with russet, and flushed bronze on the exposed side. Flesh green, somewhat granular, very juicy or watery, sometimes very richly flavoured. Tree a great bearer, requires a wall or sheltered bush or pyramid. The fruit should be allowed to hang late on the tree before gathering; it is fit for use December and January.

25. *Beurré Steckmans* or *Doyenné Steckmans.*—This fine Pear is slowly gaining reputation. It is of the Passe Colmar type. Fruit of medium size, pyriform shape, flattened at the apex, skin greenish-yellow, beautifully streaked and flushed with crimson on the exposed side. Flesh white, firm, crisp, moderately juicy and sweet, and pleasantly flavoured. Tree a very free bearer on the Quince as a pyramid. Gathered late in October, becomes fit for use in January.

26. *Josephine de Malines.*—This is a universal favourite, being uniformly good at all times and in all places. The fruits are only of medium size, of a flattened pyriform shape, and very regular; skin smooth, greenish-yellow, with small patches of russet near to the eye and stalk; stalk long, flesh buttery, melting, and juicy, of a reddish tinge, very richly flavoured. Tree a moderate cropper; requires a wall. Comes into use from Christmas to February. A very valuable Pear.

27. *Beurré de Jonghe.*—This is comparatively a new Pear, but one which is destined to become largely cultivated. The fruits are of medium size, long, pyriform in shape, very short, with a thick stalk, skin thick, greenish yellow, with patches of dull russet; flesh white, buttery, melting, juicy, and rich. Tree a free bearer, succeeding well as a pyramid on the Quince. The fruit becomes fit for use during the month of January.

28. *Bergamotte d'Esperen.*—A very fine and useful late Pear, becoming pretty generally cultivated. Fruits of medium size, roundish, Bergamot shape, with a very long stalk. Skin thick, green, very profusely spotted with dull russet; flesh white, buttery, melting, juicy, and very pleasantly flavoured. Tree a most profuse bearer, succeeding well as a pyramid on the Quince. The fruit is fit for use during January and February.

29. *Easter Beurré.*—One of the oldest and best known Pears in cultivation, a variety that cannot readily be dispensed with, although it is extremely uncertain in regard to quality in many places and in some seasons. Fruits large, obovate, skin smooth, greenish-yellow, sometimes flushed on the exposed side. Flesh white, very buttery, melting, and of fine flavour. Becomes fit for use in December, and continues ripening in succession through the winter.

30. *Olivier de Serres.*—A comparatively new Pear, but very highly esteemed by those who have cultivated it. Fruits of medium size, round or oblate. Eye very large, skin thick, coated with a uniform dark brown russet. Flesh white, buttery, melting, and very pleasantly flavoured. Tree a very free bearer, succeeding well on the Quince. A first-class late Pear, in season during January and February. *A. F. B.*

## FERN CULTURE.

FERNS are so universally popular, and are now used in such a variety of ways, that the demand for plants of all sizes has considerably increased during the last few years; and it requires some skill and management to keep up a supply throughout the year; especially of small plants suitable for the fancy pots which are now so much used. For this purpose the plants must be of a limited size, and to have nice healthy plants it is necessary to make successive sowings. Although the spores germinate most freely during the spring and summer, yet, under favourable circumstances, they may be induced to grow at any season of the year, even during the dull months of November and December.

To ensure success in raising Ferns from spores it is of the first importance that the fertile fronds should be collected at the proper time, and they should always be selected from plants grown in isolated positions as far as possible; as, where several sorts come in contact with one another the spores, which float about freely, will often settle on the fronds of different sorts, and it becomes difficult to ensure a crop of the particular sort that is desired. Nephrodium molle, Pteris longifolia, and some of the Gymnogrammas, are among the most troublesome Fern-weeds, and should never be allowed to come in contact with those that are required to be increased. The best time to collect the fertile fronds is just as the spore-cases begin to open; as soon as the fronds are taken off they should be folded up in paper, and if put in a warm dry place, in a few days there will be plenty of spores ready for sowing; or they will keep in good condition for a very long period. As good fertile fronds of many sorts are only to be had at certain seasons, it is necessary to be on the look-out so as to secure them when they are obtainable, bearing in mind that it is better to have a little extra stock, rather than to run short of any particular sort.

### SOWING THE SPORES.

The plan we adopt is somewhat different to that which is usually advocated—viz., we usually use 48-size pots, which are filled firmly to within about an inch of the top with good loam, using no drainage whatever, and after the pots are filled they are thoroughly watered. Before sowing the spores, we sprinkle a little burnt ballast over the surface of the soil, or potsherds powdered fine and sifted through a fine sieve. As soon as the spores are sown, each pot is covered with a piece of glass and stood in a saucer of water; the saucers are not kept constantly filled with water, but sufficient is given to prevent the pots

requiring any surface watering; the pots are placed under a stage near the hot-water pipes, where they remain until the spores begin to germinate, they are then removed to a lighter position, and the glasses are taken off every morning until the prothallia are well developed, when the glasses may be dispensed with altogether. As soon as they are sufficiently developed we prick them off into pots or boxes, the compost for which consists of equal parts of loam and peat, with a liberal allowance of sand added: plenty of drainage is also used.

Ferns, when pricked off in a small state, must be lifted and replanted in patches, and these require dividing again when potted off into small pots, though in some cases they are not divided singly, as when grown in tufts of three or four together they are more useful, and are useful much sooner; this especially applies to Adiantums of different kinds, Pteris serrulata and its varieties, P. hastata, P. cretica and its varieties; while such sorts as P. tricolor, P. argyrea, P. tremula, Cyrtomium falcatum, or any of the Gymnogrammas, are better grown singly. *H.*



## Home Correspondence.

**Honours to Horticulture.**—Your correspondent "X." is, I think, ungenerous in assuming that I am seeking my own gratification rather than the advancement of the profession in public estimation. My letter certainly affords no just grounds for such an assumption, which is altogether contrary to fact. "X." seems to me to set too low an estimate on the intelligence of the horticultural body, and moreover shows a want of kindly feeling towards it by insinuating that there would be a "general scramble" for what he calls the "glittering baubles" of honours. Why here more than elsewhere? His letter recals to my memory a passage from the writings of one of the sages of the seventeenth century, Sir Thomas Browne: "Diogenes I hold to be the most vain-glorious man of his time, and more ambitious in refusing all honours than Alexander in rejecting none." *F.R.H.S.*

**Odontoglossum crispum.** — In your issue of the 5th inst. I am glad to see "T. H. A." commence a discussion in connection with Mr. O'Brien's writings upon "the genus Odontoglossum." I hope it will be joined in by many writers who have had longer experience than myself, though, with all due deerence to Mr. James Anderson, "growers in their long clothes" now and then do pick up some experience after they have paid for it. I think there is no need to "endeavour to find out the so-called species of Odontoglots that grow in company with the varieties of O. crispum." My experience is, that this is found out easily enough without any "endeavours," as O. Lindleyanum blooms out of all importations of bad and good varieties alike. I should be far more satisfied in one way, had I only to believe these two grew "in company" and not see it, but as a point in deciding the parentage of a hybrid it is of course valuable. I have had large batches, which in one case failed to bloom a single thick-petalled round form, and in the other failing to bloom, a single thin-petalled stellate form, both producing O. Lindleyanum. Personally, I do not think the other species growing "in company" with it, therefore, have the slightest influence over the varieties, but the hybrids out of that batch are their progeny. I cannot agree with "T. H. A." that "O. odoratum or O. gloriosum is the male parent of many of the narrow reflexed-petalled crispums." What does he do with all the spots and colour of these two species? Again, they both have a habit the reverse of "reflexed." I consider that the reason for "locality" of bad O. crispum producing thin flowers is as Mr. O'Brien says on p. 588, or it may be as explained by the Editor's note. I always find that in the bad thin forms there are no hybrids (at least such is my luck), therefore I think they are not influenced by their "companions." O. gloriosum, if you buy it in a batch of O. crispum, is ready enough to bloom; being a good grower, you find out fast enough if it is one of the "companions," but out of the finest importations that I know of, I have not yet bloomed one. It is impossible for a collector, no matter how good a judge he may be, to discern and discard every O. gloriosum, as the bulbs occasionally are indistinguishable. I was once given a magnificent plant, with ten large bulbs, by one who, I suppose, sees more O. crispum than anybody else, with the words, "You may have that for nothing; that is only an old gloriosum." It bloomed a very fine crispum with a heavy pendulous spike, flowers as white as snow; a ready-made bridal wreath. Again, if O. crispum does "readily cross-fertilise" with companion species, we should get far more hybrids were the "seeds matured proving very fertile," but hybrid seeds are seldom very fertile. On the other hand, it is out of the fine crispums that the greater majority of hybrids come, thereby showing that the fine varieties "cross-fertilise" with their "companions" far more than the bad ones. "T. H. A." in the end of his letter says, "The thinly-grown plants will produce the fine flowers . . . . for a time after being imported," therefore he infers that culture after a time will mar the form of the fine flowers. If this is his own experience, I am sorry for him. I think I am not alone in enjoying just the reverse, and in one case, the second year of blooming, one of my fine varieties developed into the form O. c. Rothschildianum described on p. 589, having had the previous year *no spots at all*; it has never lost these spots since, as some people fancy the spots come and go. Does "T. H. A." think the wretched thin form will ever grow into its more valuable *confrere's?* If so, I shall be glad to let him have my poor ones as I bloom them at cost price. One word more as to the cross-fertilisation, and seeing the parents' features in the progeny if "T. H. A." will look at the figure, on p. 681, of O. Andersonianum lobatum, the crest and column must remind him of O. Lindleyanum, as also the wretched shape of the flower. *De B. Crawshay.*

**The White Hoop-Petticoat Daffodil.**—This elegant little flower, which comes out at a time when flowers are scarcest, may be successfully raised by any one possessing a greenhouse, for I am quite sure that the conditions of climate in Cheshire are as unfavourable for it as those of any part of England. I potted fifty bulbs in the summer of last year in rich light soil, and a seed-pan a foot square and 4 inches deep. Most of them flowered about Christmas. They were left in the greenhouse where they had flowered until about the end of April, when the leaves began to wither. After this they were put in the sunniest position I could give, either on a south shelf in the greenhouse or beneath a light under a south wall, and not a drop of water was given for five months, but the pot and bulbs were left to be baked. About the beginning of October they were well watered and brought into the greenhouse, and since then the soil has never been allowed to dry. They were not repotted or even dressed on the surface, but are now flowering well, most of the bulbs making two flowers. I find this drying and baking in the sun in summer by far the best treatment for all these Mediterranean bulbs, including Anemone fulgens, which is greatly improved by being dug up in May and left baking in all the sun there is till the end of September. Turning pots on their side under a stage may do as a makeshift where sun is plentiful, but here I never waste a sunbeam if I can help it. *C. Wolley Dod, Edge Hall, Dec.* 14.

**Pruning and Planting Fruit Trees.**—Mr. G. H. Richards says in the middle of his article on this subject at p. 758 that "As to trees planted in good and deep, well-drained soil, and in favourable localities, very few remarks are necessary as to their ultimate management either in respect to pruning root or branch. Fibrous roots and firm wood well set with flower-buds will develope simultaneously," adding, "and only after several years' barrenness will it be necessary to sever a few of the strongest roots in order to restore the balance of root and branch." But why allow an interval of "several years' barrenness" to elapse before taking steps to "restore the balance of root and branch, and the fertility of the trees"? By way of supplementing Mr. Richards' remarks, I would advise that corrective measures be taken as soon as possible after any tree or trees, indicate by scantiness of crop not attributable to meteorological influences, an unmistakable proof of waning fruitfulness. And the earlier in the summer that these remedial measures are carried out the better chance will there be of securing a full crop of fruit from the trees operated on the following year. A trench should be opened to the depth of 3 or 4 feet, and a like distance from the trunk of the trees more or less, according to the size of the latter—working the soil partly out from underneath the ball of earth and roots, and cutting all the latter that the operator comes in contact with outside the prescribed space with a sharp knife, afterwards replacing the soil. The check thus given to the trees will prevent them from making an over-luxuriant growth, but on the contrary it will induce them to make short consolidated wood thickly set with fruit-buds. *H. W. Ward.*

**The Past Season—Storing Gladioli (hybrids of gandavensis).**—I cannot remember any season in which these have been so late—as a rule—in ripening their foliage, and, I ought to add, their flowers. Some well-known varieties, no matter what time planted, will rarely bloom before October. I have had Duchess of Edinburgh (Kelway) in bloom in mid-November, but this year it got seriously checked by the 8° of frost (24° Fahr.) we had on September 24, and did not bloom, but the corms continued to grow on vigorously. The same misfortune happened to Le Vesuve, Mrs. J. Eyton (Kelway) Marquis of Lothian (Campbell), Maggie (Dobree), Marica (Kelway), Sir Stafford Northcote (Kelway), and, if I remember rightly, Campbell's Tel el Kebir. Fortunately Mr. Thornton, James McIntosh, and Sam Jennings (Kelway's), and as I recollect, four of Souchet's, were opening the lower blooms on the spikes that evening, and seeing the threatening for frost, I cut them 8 inches below the first bloom—this is important—kept some in vases in clean water, and gave away others. Every bloom on the spikes of those opened magnificently during the ensuing month. Chrysanthemums, especially those grown in the open air, will do this, but no other flower I know to compare with the Gladioli. The end of the stem in the water must, however, be occasionally dressed and pared—in fact some growers think they open even better indoors, and cut favourite flowers for the purpose. I should certainly do this if a storm threatened, as it makes sad havoc among tall-growing varieties like Lady Bridport, Mr. Derry, Anthony Waterer, and others, that often, with good treatment, attain a height of 6 feet, and open blooms as brilliant as the showiest Cattleya or Odontoglossum among Orchids, and so large that you could stuff your closed hand into them. The blooming period continues for fully four months: if any one doubts this they can turn to your columns of the last day in October and see Mr. Dean's description of Mr. Campbell's 168 spikes at Kensington, after travelling 400 miles from Gourock. A short time previous to that date I had seen a large collection with Mr. Dickson at Newtownards in the North of Ireland, and they must have been in full bloom in October also. Making every allowance for the ripening advantages of the south of England as compared to Scotland, and the same of Ireland, south and north, it has been the latest season in lifting I can recollect. This is taking it for granted that proprietors of collections have left them in the ground until ripened, or otherwise until growth ceased, though both expressions are not synonymous. I take it after the 1st of December in almost all parts of the British Isles growth, or maturation, for the Gladiolus has ceased. If lifted before this occurs, degeneracy and a corm of stunted size is the inevitable result. Mr. Douglas, if I remember right, to obviate this and the immense trouble incidental, such as trying to keep collections true to name, proposed leaving them in the ground. I am now speaking, of course, of the best "hybrids of gandavensis;" all others may safely be left out during the winter. I have frequently been tempted to do this, but my love for the flower overcame the great trouble of lifting, naming, or labelling and storing. There are at least three objections to allowing them to winter in the beds or borders:—1, the risk from frost; 2, the tendency to rot; and 3, imperfect maturation, and, I might add, premature growth in the spring, if the corm survives, and the great check sustained by having the young stem killed to the soil. Just a word on each point. In nine cases out of ten our

winters may come so mild as that frost may not penetrate the several inches of soil over the corm, but individually I plant rather shallow. There is more risk from the saturation of the soil incidental for several months, and consequent rotting. If rotting does not take place, then premature growth commences, and that growth, as observed, is burned back, and a check sustained that is never overcome, and in no case subsequently does perfect flowering take place. I maintain, lastly, as I have before maintained in your columns, the completion of the maturation—indispensable to success the following year—takes place after lifting, and especially in such a season as this, when two-thirds of my thousand corms had to be stored in sand with green, or partially green, stems attached. I frankly say I would willingly have avoided the trouble of naming and tying the labels to both stems and corms, if I ran no risk, but there is even a further disadvantage in doing that. To give them fair play and attain the best results, the ground must be manured and prepared for them; this can only be done by storing. They could not be lifted in spring, even though you knew where to find them, as the slightest movement of spade or trowel breaks off the young roots. Except to be occasionally looked over, mine will be stored in sand and require no further trouble until February. *W. J. Murphy, Clonmel.*

**Bracts Falling from Poinsettias.**—In reply to the enquiry by "Toki" in last week's *Gardeners' Chronicle* on this subject, I surmise it to be caused by too much guano-water being given, or given too strong, and perhaps at too early a stage of growth of the plants. I have seen these ill-effects more than once from guano-water when used of too great a strength, or too often. The manure is more beneficial if used very weak, and at the proper time, that is, when the plants have made their growth, when, to assist the bracts to develope to perfection, it should be given in a weak state, just enough guano to cover the water. *Wm. Smythe.*

—— A correspondent last week, signing himself "Toki," says all his Poinsettias are gone blind, and he judges it may be through using guano during their culture, and I think his conclusion is quite the right one. The Poinsettia being a very rank grower in its young state does not require any stimulant. If for market use they should be shifted into 6-inch pots in July or beginning of August, using two-thirds good sound unsifted loam, one-third finely-sifted rotten manure, and a little sharp sand, well mixed, and grown on during August and September in a warm greenhouse near the glass, giving sufficient air to keep them short-jointed. Give enough tepid water to keep them growing, but not to saturate the soil. Put them into a warmer house in October, where they will get from 60° to 65° of heat, with a little air in the daytime; by the first week in November they will show their bracts, and will be well in bloom by Christmas. If required before that time stand them on the tank, not plunged, which will get them ready a fortnight earlier. If larger sized plants and larger sized bracts are required, shift them into 8 or 9-inch pots in September, using the same compost; increase the tepid water as the pots fill with roots, to enable the plant to hold its lower leaves; when the bracts begin to show, and if the plants are pot-bound, a little very weak liquid manure may be given twice a week, which will help them to retain their bottom-leaves, and give more intense colouring to the bracts, taking care not to overdo the liquid manure, or more harm than good may ensue. A tablespoonful of guano to 3 gallons of water will not hurt them, or, what is still better and safer, is the drainings of the heap of horse-dung, using one part to three of water. By similar treatment to this we have a splendid lot of saleable plants in full bloom at the present time. *A Grower.*

**Quince Roots as Stocks for Pears.**—A large amount of valuable information has recently been given in your paper in reference to Pears and their culture, and the Quince stock generally and deservedly recommended to graft them upon; but perhaps it may not be generally known that Quince roots will answer the purpose just as well. Wishing to increase a variety last spring, and having no Quince stocks, I took off the extremities of some roots, and put on the grafts where both were nearly of a thickness. These were exposed to considerable warmth, for I put them into vacant spaces at the foot of a south-west wall; yet one has made a sturdy shoot 18 inches long, others varying between that and mere spurs, but I hope to see the latter make up for it next year. I have been a reader of one or other of the leading gardening periodicals for more than forty years, but cannot recollect having seen such a practice alluded to, so that possibly my experience may be of service to others. *R. Pickering.*

**Artificially Coloured Potatos.**—Like Mr. Harrison I was surprised and disgusted to see Potatos at the Birmingham Cattle Show artificially coloured. Not only were the red varieties so outraged, but all the coloured and parti-coloured kinds were so treated. What they were coloured with I cannot say, but speaking roughly, the red kinds, which included Prizetaker, Mr. Bresee, Reading Russet, Red Emperor, &c., looked as though they were coloured with red lead, and the purples—which included Vicar of Laleham, The Dean, Edgcote Purple, &c.—with black-lead. I need hardly say that they presented a most unnatural appearance. I noticed that one or two exhibitors at the late International Potato Exhibition used some greasy substance to improve, as they thought (but which I think detracts from) their appearance, but never before have I seen such a manipulation of the useful tuber as at Birmingham. *J. H.*

**The Allotment Question.**—Because of the unfortunate party political aspect given to the subject of allotments, whether in the form of tenancies or ownerships, one very important aspect of the matter has been unwisely overlooked. I refer to the subject of labour in the winter months. It is an unfortunate fact that throughout the entire kingdom work in both garden and field, as, indeed, in many other outdoor occupations, becomes slack always in the winter months. Very much of this lack of labour is due to the objection of employers, always anxious to get as long a day's work as possible, to give employment during the short days of winter. Still farther does it arise from the undoubted fact that such an element in good cultivation as trenching is neglected. Were that not so, and employers would cover several acres of land which needed trenching every winter with long manure or other refuse material, many thousands of able-bodied men might be profitably employed during the winter in piecework, with corresponding benefit to those who employed them at such labour in years to come. But because not so employed many thousands of hard-working industrious men have to be idle for several weeks in the short days of the year, and their labour so far is thus absolutely lost to the country. But when it is contended that poor men could not cultivate plots of land at a profit, those who take this pessimist view quite forget that the time now wasted might thus be profitably employed in deep cultivation of their own plots, and thus not only would that labour be absolutely saved, but it would give profitable results during the following season, indeed the small holding or allotment system would thus tend to solve one of the most troublesome problems of the age, viz., finding employment during the winter season. Even now some will plead that such employment cannot provide a livelihood because there will be no one to furnish a "Saturday night." But then it may be replied, neither is there such "Saturday night" for men who have no employment of any sort. On the other hand a few weeks spent in trenching allotment ground in the winter would be more than amply repaid during the following summer, and thus the "Saturday night" would come inevitably, if late. The best solution of the question is to afford to all industrious working men an opportunity to purchase or rent land cheap, and having done so to leave them to fight their own battle with it. If they win the demand has been more than justified; if they fail, then the experiment has proved a failure and it can hardly be revived, at any rate with success. As to the much derided cow, there is one phase of that matter which so far has found scant attention. All familar with our rural districts know that literally thousands of acres of good pasture is let run to waste annually, for the simple reason that it is not enclosed but it is found on the margins of our lanes and highroads. Were that vast area of pasture properly utilised many thousands of labourers' cows might be maintained during the summer months, and a portion of the allotment ground might grow food for the remainder of the year. I hope that when the stupid prejudice of political partisanship which this question—one of vital interest to the welfare of the labouring population of the rural districts—has passed away that it will be taken in hand in a practical, statesmanlike way, and something useful and profitable accomplished. Many a noble idea has been killed by ridicule: it is to be hoped that this one may be rescued from such a fate, and that the proposition, made in the interest of labour, may by-and-bye bear good fruit, good alike for the rich as well as for the poor. *A. D.*

**Florists' and Fruiterers' Christmas Supplies.**—At no season of the year do our metropolitan florists' and fruiterers' present a more gay appearance than when decked out with their Christmas stores. It is really remarkable the variety of cut bloom that is to be seen exposed for sale at this season of the year; as an instance of this, not later than last Saturday beautiful Rose-buds were being hawked in the City by "costers," and were selling at two and three a penny. Our growers are unable to raise Roses now, and these are grown in the South of France and Italy; but in spite of this foreign competition English-grown buds always fetch a good price. Amongst the large shops can be found in large quantity Azaleas, Bouvardias, Mignonette, Primulas, Lilac, Roman Hyacinths, Tuberoses, Violets, Lily of the Valley, Gardenias, Eucharis, Carnations, Polyanthus Narcissus, Lapagerias, Callas, Poinsettias, Pelargoniums, and various varieties of Orchids, Odontoglossums and Dendrobiums predominating. There cannot be said to be as much variety in the fruit department, but the quality as a rule is excellent, so are the prices for the most part. *C. J.*

**Decorations.**—For the next month or so the decoration of churches, ball-rooms, mansions, &c., will be an important item in the work of the garden staff. Although church decoration has made rapid strides of late in original and elaborate ideas at the various seasons when the proper decoration of the church is considered a very important item in the celebration, the decorations of ball-rooms, &c., in "out of the way places" still consist of, in a great measure, festooning of evergreen wreaths, plentifully besprinkled with various coloured tissue-paper rosettes intended to represent Roses; often, too, corresponding chains of tissue-paper are used, and with great effect; but it matters not how effective it may appear, when the same plan is continued year by year it gets stale, and any change is hailed with satisfaction, however small it may be. Where such a thing has not been attempted before, a light trellis arbour at the entrance to the ball-room, neatly covered with evergreens, has a telling effect, and besides, if provided with seats, forms a pleasant retreat to those couples who are always to be found at any ball. Another good thing in its favour is that it has a beneficial effect if there is a draught from the door. Of course this can only be introduced where there is plenty of room. I recollect once seeing the band platform of a ball-room so decorated as to represent a small thicket of Fir trees, &c., which had a most pleasing effect. Where large masses of evergreens are unavoidable, every endeavour should be made to give it a light appearance. This can be most easily effected by the plentiful use of trailing Ivy, Periwinkle, and, where not too far gone, the long shoots of Bramble with their many-hued leaves give a charm to an otherwise stiff piece of work. The careful use of Pampas and other grasses is of great benefit in producing a finish. Many gardeners are rather curtailed in the way of evergreens, and, as a rule, these are to be congratulated, as they have to "cut their coat according to their cloth," consequently the wreaths, &c., are light and thin, which always looks better than great heavy ones. The careful use of pieces of virgin cork, &c., sprinkled with water in which alum has been dissolved, which when dry has the appearance of a "frosty bit," adds a great charm by reason of the contrast with the dark evergreens and by its natural associations. *C. J.*

**Tree Carnations.**—It is at this season of the year, and on till March, that these charming flowers are found most useful. Time was when but few blooms could be had until spring, but then the varieties were limited in number, and their culture not so well understood as at the present time. Not only have the varieties greatly increased in number, and

especially so in the habit of growth being dwarfer and much freer, but they flower much earlier than they used to do, and with greater profusion. Just now the collection at Slough well repays a visit. There are a very large number of plants in an airy house, and a great many of the varieties are blooming freely. It is but few gardeners, however, who can devote a house entirely to Tree Carnations; therefore they are grown very frequently with other plants, or in a frame, and under manifest disadvantages. At this season of the year sufficient heat is necessary to induce the buds to expand. Water should be given sparingly, but in sufficient quantities to insure vigorous development. The following fine varieties may be set down as earlier bloomers, as some are much later than others, viz., Burgundy, Cardinal, Countess, Enchantress, Field Marshal, Helena, Huntsman, Invincible, Juliette, Jubilee, a fine variety with dark stripes on a red ground; Lady Bramwell, Mrs. Maclaren, crimson bizarres; Negro, Seraph, Vivid, and Volunteer, all of Mr. Turner's raising. *R. D.*

## THE NORTH-WEST OF NEW ZEALAND.

AN interesting pamphlet on the North-west of New Zealand as a new field for emigration has recently been published by Messrs. Bean, Webley & Co., of Foster Lane, Cheapside. The author, Mr. Alfred Cooke, Yarborough, says that he does not believe "there are fifty people in England who know anything whatever, definite or indefinite, of the present state of the extreme north-west of the colony." Regarding the culture of the Olive and Mulberry, both are said to be as yet only in their infancy, and it is to be regretted that the early settlers introduced wrong descriptions of both these trees, the result being that though the plants have grown well, and shot up into large trees, they are not adapted for the orchard, or for successfully rearing silkworms. On the subject of Orange culture the necessity of securing a site which can be readily drained, and which is not too much exposed to the westerly winds, is pointed out. "A thoroughly good site of land for an orangery is a fortune to a man, while an unsuitable locality may be the means of causing irreparable failure. With a suitable site, and other favourable circumstances, the Orange crop will pay four times better than any other crop; seventy trees should grow to the acre, and providing that the grower sells his crops at even 6*d.* per dozen (a very low estimate), a large sum per acre is obtained. A single tree in New Zealand has been known to yield 3000 oranges. The Vine, Peach, and various other well known fruits, grow to perfection." The following account of Kauri gum from Dammara australis will be interesting.

The Kauri tree is described as the most valuable and finest trees in the Southern hemisphere, and from it exudes a soft gum, which hardens on contact with the atmosphere, and fossilises in the ground in the course of years. How long it may have been in the ground no one can say, but it is found on the sandhills where no trace of a tree remains, in the coal-beds in a district where the Kauri tree does not now exist, and in large tracts of country from which evidently the forests have been in ages past burned from off the face of the earth. The discoloured condition of some of the gum dug up from several feet below the surface of the ground indicates that the trees were at one time exposed to the action of fire. The gum-fields are partly in the hands of the natives and partly in those of Europeans, but they are mostly the property of the Government, who have hitherto been in the habit of putting up to auction the right to dig gum on these fields. It is out of the power of a working-man to bid a lump sum for the right to dig gum over an area of 20,000 acres of land for a term of two years, and the result is that the right of digging for gum falls into the hands of some merchant or storekeeper, to whom all who dig on the land are compelled to sell at a price fixed by the lessee. This method of leasing these lands is not by any means an equitable one. The first thing a gum-digger has to do is to purchase a spear—that is, a piece of round iron pointed at the end, about 3 feet 6 inches in length, fixed into a wooden handle; this he can get on credit from the storekeeper, as likewise a spade, knife, some flour, sugar, and necessaries, on the condition that he sells his gum to him. If the storekeeper is the lessee of the gum-land this is a matter of course. Thus provided the digger proceeds to the gum-field (a sort of moorland it would be called in England), builds a shanty of Raupo or Palm Fern, and commences to spear the country for gum. An experienced digger will know the likely spots for a good find, and can tell by the feel of his spear as it touches a hard substance underground whether it is gum, wood, or stone. If he thinks it is gum he digs it up, puts it in his kit or basket, and goes on. The gum as it comes from the ground is covered with dirt and rust, and every piece has to be scraped with a knife until the gum is fairly clean. A good deal of judgment has to be exercised in this matter, because if too much is scraped away the digger loses weight, and if not enough he receives a less price on account of bad scraping. Gum is also obtained in the forest from under the trees, and even from the tree itself. The best gum is very clear, like amber, and hard, but there are many sorts and varying prices. Though the average earnings per week of the gum-digger is from £3 to £4, a man has been known to earn as much as £20. He has to work very hard, exposed to all sorts of weather, digging all day, scraping his gum at night, and cooking his meals between while.

The trade in Kauri timber is also very important, and gives employment to a large number of hands. The Kauri forests in the district are of very large extent, and it is stated, at the present rate of supply, will last about another 200 years. The timber is of very great value, and is recognised in New Zealand and Australia as most useful for all sorts of purposes—house-building, ship-building, masts and spars, railway sleepers, furniture, &c. It is very durable, and easily worked. The tree grows to a height of 100 feet without a limb, and measures an average of 5 feet in diameter. Trees have been found measuring a chain in circumference, but such trees are of no value to the purchaser, as they are too unwieldy to handle and cut up. In all Kauri forests there are found at intervals trees of enormous size, which stand alone in their grandeur as parent trees to the less unwieldly generation around them. In the forest the young trees grow readily, but so soon as the parent trees are felled and removed a fire sooner or later clears the ground, and they perish. Altogether the Kauri is perhaps the most important tree in New Zealand.

The exportation of the fungus, Hirneola polytricha, from New Zealand has frequently of late been commented upon. Mr. Yarborough speaks of it as a branch of industry only entered upon by children, who make a good deal of pocket-money by it. The fungus is bought from the collector, after being dried, at prices varying from 4*d.* to 5*d.* per pound, and is exported *viâ* San Francisco to China, to be used by the Chinese as an ingredient for soup. In 1882 the export of fungus was 400 tons weight, valued close upon £19,000.

# Reports of Societies.

## EDINBURGH BOTANICAL: Dec. 10.

THE Society met this evening at 5, St. Andrew Square: Professor Dickson, President, in the chair.

Dr. J. T. Boswell, Bilmuto, was elected to a vacant place amongst the six British Honorary Fellows. The following were added to the list of twenty-six Foreign Honorary Fellows:—Fred. Delpino, Professor of Botany, Genoa; P. Duchartre, Professor of Botany, Paris; Grand'Eury, St. Etienne; Dr. F. Hildebrand, Professor of Botany, Freiburg; Dr. S. Schwendener, Professor of Botany, Berlin; Ph. Van Tieghem, Professor of Botany, Paris; Dr. E. Warming, Professor of Botany, Stockholm.

Professor Dickson gave his presidential address, which, after some remarks on the healthy state of the Society's funds, and on the work of last session, was devoted to a subject connected with the morphology of the leafy Jungermanniæ. On the motion of Dr. Cleghorn, he was awarded a hearty vote of thanks.

Mr. Taylor read an obituary notice of the late Dr. W. B. Carpenter, who was amongst the most prominent contributors of papers to the Society at its first session in 1836. Indeed the germs of his celebrated work on *General and Comparative Physiology* were first given to the Society.

Dr. Macfarlane contributed a short paper on a "Fossil Microscopic Fungus in Stigmaria, from Bowling," at the same time exhibiting the specimen.

Mr. Robert Lindsay gave in his report on the 'Progress of Vegetation at the Royal Botanic Garden, Edinburgh."

The past month of November has been generally dry and cold. A series of low readings of the thermometer were registered from the 15th till the 19th of the month. Since then, open-air vegetation has gradually declined, and at the end of the month had nearly reached its lowest ebb. On nine occasions the thermometer fell below the freezing point, indicating collectively 65° of frost, as against 64° for the corresponding month last year. The lowest readings were, on the 15th, 23°; 16th, 19°; 17th, 18°; 18th, 15°; 19th, 28°. The highest morning readings were, on the 3d, 56°; 7th, 51°; 8th 48°; 27th, 45°. The lowest day temperature was 31°, on the 17th, and the highest, 63°, on the 3d. The rainfall has been very light, there were no fewer than twenty-two dry days during the month. Rain fell more or less daily, from the 25th till the 29th. Very few plants are in flower out-of-doors. On the rock-garden only one species came into flower, viz, Crocus hadriaticus, and with the exception of Jasminum nudiflorum and Hamamelis virginica, which came into flower in other parts of the garden, no others have been observed as having come into blossom during November. Although there are still a few left, which had opened previously, vegetation generally has gone sooner to rest this season than was the case last, and there are fewer plants in flower. This result is mainly due to the distribution of cold having been different. The aggregate amount of frost registered during this November, is nearly the same as was registered during last November. Still, during this November the individual minimum readings have been lower in consequence of the distribution of frost having been confined to a less area, which shows that in dealing with this subject, average temperatures are apt to be misleading. For all outdoor work the month has been, on the whole, a favourable one.

Mr. Robert Bullen reported on "Temperature, Vegetation, &c., in the Botanic Garden, Glasgow, November, 1885."

During the month the temperature has been at or below the freezing-point nine times, giving a total of 61° for the seven times on which the thermometer was below 32°. The lowest temperatures registered were during the nights of the 14th, 15th, and 16th, when 13°, 14°, and 15° of frost respectively were recorded. The day temperature has been much above the average. On three days only the thermometer was at or a little below 32°. The rainfall has been light, and we have had an unusual number of fine open days, favourable to all kinds of outdoor garden work.

Amongst the miscellaneous contributions was the exhibition of a branch of a tree through the Rev. Mr. Tenant, in which chips of stones were enclosed in warty protuberances. This had been found at a considerable depth in a cutting of the recently formed Edinburgh suburban railway.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,* FOR THE WEEK ENDING WEDNESDAY, DECEMBER 16, 1885.

| Month and Day. | Barometer. Mean Reading Reduced to 32° Fahr. | Barometer. Departure from Average of 18 years. | Temperature of the Air. Highest. | Lowest. | Range. | Mean for Day. | Departure of Mean from Average of 50 years. | Hygrometrical Deductions from Glaisher's Tables 7th Edition. Dew Point. | Degree of Humidity. Sat. = 100 | Wind. Average Direction. | Rainfall |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dec. | In. | In. | ° | ° | ° | ° | ° | ° | | | In. |
| 10 | 30.22 | +0.44 | 33.6 | 26.5 | 6.5 | 29.6 | −11.4 | 26.4 | 84 | N.W.; N.N.W. | 0.00 |
| 11 | 30.33 | +0.51 | 32.0 | 21.0 | 11.0 | 27.3 | −13.5 | 21.4 | 78 | N.W. | 0.00 |
| 12 | 30.19 | +0.40 | 37.0 | 27.0 | 10.0 | 33.4 | −7.3 | 29.4 | 85 | S.W.; N.W. | 0.00 |
| 13 | 30.08 | +0.28 | 42.1 | 34.2 | 7.0 | 39.2 | −1.4 | 36.0 | 89 | W.; SW. | 0.01 |
| 14 | 30.22 | +0.42 | 46.5 | 38.0 | 8.5 | 43.1 | +2.4 | 41.8 | 95 | S.W. | 0.00 |
| 15 | 30.31 | +0.50 | 47.6 | 38.0 | 9.0 | 42.6 | +1.9 | 38.9 | 87 | S.E.; S.S.E. | 0.00 |
| 16 | 30.32 | +0.49 | 45.6 | 31.0 | 14.0 | 38.7 | −2.0 | 35.8 | 91 | N.E.; E.S.E. | 0.01 |
| Mean | 30.23 | +0.44 | 40.8 | 30.8 | 9.6 | 36.3 | −4.5 | 32.8 | 87 | Variable. | 0.02 |

Dec. 10.—Very fine cold day.
" 11.—Dense fog in early morning; dull day.
" 12.—Very dull day.
" 13.—Very dull day; slight rain in afternoon.
" 14.—Very dull day.
" 15.—Very fine day and night.
" 16.—Very fine day.

LONDON: *Atmospheric Pressure.*—During the week ending December 12, the reading of the barometer at the level of the sea decreased from 29.65 inches at the beginning of the week to 29.52 inches by 9 A.M. on the 6th, increased to 30.34 inches by 1 P.M., and decreased to 30.26 inches by 5 P.M. on the 9th, increased to 30.50 inches by 9 A.M. on the 11th, and was 30.32 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.16 inches, being 0.25 inch higher than last week, and 0.20 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 40°.2, on the 6th; on the 11th the highest temperature was 32°. The mean of the seven high day temperatures was 35°.7.

The lowest temperature was 21° on the 11th, on the 7th the lowest temperature was 34°.5. The mean of the seven low night temperatures was 27°.6.

The greatest range of temperature in one day was 11°, on the 9th and 11th; the smallest on the 7th was 5°. The mean of the seven daily ranges was 8°.1.

The mean temperatures were, on the 6th, 36°.9; on the 7th, 36°.6; on the 8th, 22°.9; on the 9th, 30°; on the 10th, 29°.6; on the 11th, 27°.3; on the 12th, 33°.4; and these were all below their averages by 4°.7, 4°.9, 11°.5, 11°.2, 11°.4, 13°.5, and 7°.3 respectively.

The mean temperature of the week was 32°, being 11°.6 lower than last week, and 9°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 49°, on Dec. 10. The mean of the seven readings was 44°.4.

The lowest reading of a minimum thermometer placed on grass, was 18°.8 on the 11th. The mean of the seven readings was 23°.8.

*Rain.*—Rain fell on one day, to the amount of 0.05 inch.

ENGLAND: *Temperature.*—During the week ending December 12, the highest temperatures were 49°.2 at Plymouth, 48° at Truro, 47° at Liverpool; the highest at Cambridge was 39°, at Wolverhampton 39°.9, at Sheffield and Hull 40°. The general mean was 42°.8.

The lowest temperatures were 18°.9 at Wolverhampton, 19° at Cambridge, 20° at Truro; the lowest at Liverpool was 27°.4, at Brighton 23°.3, and at Bristol and Leeds 23°. The general mean was 21°.8.

The greatest ranges were 28° at Truro, 26°.7 at Plymouth, 21° at Wolverhampton; the least ranges were 19° at Sheffield and Hull, 19°.2 at Blackheath. The general mean was 21°.

The mean of the seven high day temperatures was highest at Truro, 43°, at Plymouth 41°.4, at Liverpool 38°.7; and was lowest at Newcastle, 34°.8, at Wolverhampton 34°.9, at Hull 35°.6. The general mean was 37°.3.

The mean of the seven low night temperatures was highest at Plymouth and Liverpool 30°.5, at Truro 29°; and was lowest at Wolverhampton, 23°.1, at Hull 24°.7, at Cambridge 25°. The general mean was 26°.9.

The mean daily range was greatest at Truro, 14°, at Wolverhampton 11°.8, at Bradford 11°.5, and was least at Brighton, 7°.6, at Blackheath 8°.1, at Liverpool 8°.2. The general mean was 10°.4.

The mean temperature was highest at Truro, 35°.9, at Plymouth 35°.8, at Liverpool 34°.5; and was lowst at Wolverhampton, 28°.9, at Newcastle 29°.9, at Hull 30°.1. The general mean was 32°.

*Rain.*—The largest falls were 0.97 inch at Plymouth, 0 64 inch at Bristol, 0 41 inch at Bolton. The smallest falls were 0.01 inch at Brighton and Nottingham, 0 03 inch at Wolverhampton. The general mean fall was 0.21 inch.

SCOTLAND: *Temperature.*—During the week ending December 12, the highest temperature was 47°.3, at Paisley; at Perth the highest temperature was 42°. The general mean was 44°.3.

The lowest temperature in the week was 14°, at Perth; at Aberdeen the lowest temperature was 23°.2. The general mean was 19°.6.

The mean temperature was highest at Greenock, 32°.7; and lowest at Glasgow and Perth, 29°. The general mean was 30°.5.

*Rain.*—The largest fall was 0.44 inch, at Aberdeen; the smallest fall was 0 05 inch, at Dundee and Paisley. The general mean fall was 0.16 inch.

JAMES GLAISHER. F.R.S.

SUMMARY OF TEMPERATURE, RAINFALL, AND DURATION OF BRIGHT SUNSHINE in the United Kingdom, for agricultural and sanitary purposes, for the week ending Monday, December 14, 1885, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The *weather* was generally fine and frosty during the earlier part of the period, but at some of our northern and eastern stations rather heavy falls of snow were experienced. Towards the end of the week the conditions underwent a change, and mild, dull weather, with showers of rain became prevalent.

The *temperature* has been below the mean in all districts, the deficit ranging from 2° or 3° in Scotland to 5° or 6° over the greater part of England. During the earlier days of the period the readings were very low, minima between 14° and 19° being recorded over England and Ireland, and between 19° and 22° in Scotland, while in the "Channel Islands" the lowest reading was 32°. As the week progressed, however, the thermometer rose rapidly, and on the 13th or 14th maxima between 49° and 53° were registered.

The *rainfall* has been less than the mean in all districts; over Ireland, southern, and central England, and the east of Scotland the fall has been very slight.

*Bright sunshine* does not differ greatly from that reported last week, the percentages of the possible amount of duration varying from 11 in "Scotland, N.," to 31 in "England, S.," and "Ireland, S.," and 36 in "England, S.W."

*Depressions Observed.*—During the greater part of this period the distribution of barometric pressure over the United Kingdom was anticyclonic. No depressions (excepting a small subsidiary, which brought snow to our northern and eastern stations on the 8th or 9th) came sufficiently near us to materially influence our winds or weather until towards the close of the week, when the high-pressure area moved southwards, and some large and rather deep disturbances passed eastwards or north-eastwards outside our northern coasts. Moderate to fresh breezes from between north-west and north-east were general till the 11th, when they gave way to westerly or south-westerly winds, moderate in the south, but fresh or strong in the north.

## Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

RHODODENDRONS FOR FORCING. — A Dutch florist wishes to know which sorts of Rhododendrons are used for forcing in this country. Will some correspondent kindly enumerate some suitable kinds?

## Answers to Correspondents.

*** OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARLICHRON, LONDON." GARLICHRON *being written as one word. Telegrams (but not letters) thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

BIRD'S-NEST FERN: *E. H.* We cannot indicate the remedy for the malady affecting the Fern. Could you not send a frond, with samples of the soil and roots? If 67°–70° be the minimum temperature of your stove, it is much in excess of what the Fern and the generality of stove plants require during the winter months.

CAMELLIA LEAVES: *Young Foreman.* It is an oozing of sugary juice from the substance of the leaf. The cause is not definitely known. It may be the consequence of too rich living.

CUCUMBER LEAVES SPOTTED: *W. M. D.* The appearance is quite consistent with scalding, and is due doubtless to incautious airing the Cucumber pit during sunny parts of the day, and possibly the glass is not of good quality.

DENDROBIUM NOBILE, &c.: *W. Smyth.* The specimen forwarded to us is proof sufficient that fine spikes can be obtained without the wholesale pruning recommended by some, and without the consequent hard-forcing so detrimental to the well being of a plant. Your method may not result in a glut of bloom, but there is enough to satisfy any reasonable person, and the pseudobulbs and blooms are of great strength and substance. The Calanthe Veitchi and Zygopetalum Mackayii, each of much usefulness at this season, are remarkable for robustness, and in the case of the former for length of spike.

NAMES OF PLANTS: *Keynes, Williams & Co.* Buddlea madagascariensis.—*P. W.* Odontoglossum Insleayi splendens.—*E. Thrupp.* The light coloured flower is Zygopetalum Mackayii, the ordinary variety of gardens; that with the dark lip is merely a variety of the same.

SPOT ON ORCHIDS: *P. W.* The plants of Cattleya Dowiana are probably kept too hot and too close during the resting season. Try them suspended near the glass in a more airy place when not growing.

SWANSEA SHOW: *Ed.* The explanations given, in reply to our communications, by the Secretary and by our correspondent, satisfy us that substantial justice was done by the reporter, one error only having been made; that is, that Mr. Harris, of Singleton, is accredited with 1st prize for the bouquet of Chrysanthemums instead of Mr. Barron, Sketty, Mr. Harris taking 1st prize for the hand bouquet. It is, of course, in reports of distant shows, impossible to notice all the exhibits.

## CATALOGUES RECEIVED.

JAMES CARTER & CO., 237 and 238, High Holborn, London—Vade Mecum for 1886 and General List.

JAMES SMITH & SONS, Darley Dale Nurseries, Matlock—Trees and Shrubs.

NUTTING & SONS, 106, Southwark Street, London, S.E.—Garden and Flower Seeds.

COMMUNICATIONS RECEIVED.—Dr. Goodale, Harvard Mass.—W. G. S.—G. B. W.—John Laing.—A. M. Loughton.—G. F. W.—E. S. J.—P. Wolkenstein, St. Petersburg.—A. H.—W. B. H.—G. M.—G. H.—A. Franchet, Paris.—H. C., Geneva.—L. M.—J. M.—G. H. R.—W. G. (next week).—J. F.—J. B.—Agnes.—T. B.—W. B.

# Markets.

*COVENT GARDEN, December 17.*

OUR market has been more active preparatory to Christmas, and prices are generally firmer, with good supplies all round. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0– 3 0 | | Pine-apples, Eng. lb. | 1 0– .. | |
| — Canadian, barl. | 12 0–20 0 | | — St. Michael, each | 2 6– 5 0 | |
| Grapes, per lb. | .. 1 0– 3 6 | | Pears, per dozen | .. 1 0– 2 6 | |
| Kent Cobs, 100 lb. | 22 6–27 6 | | — per ½-sieve | .. 1 6– 3 0 | |
| Lemons, per case | ..15 0– .. | | | | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Artichokes, per doz. | 5 0– .. | | Mushrooms, punnet | 1 0– 1 6 | |
| Beans, Kidney, lb. | 1 0– .. | | Mustard and Cress, du. | 0 4– .. | |
| Beet, red, per dozen | 1 0– 2 0 | | Onions, per bushel | 4 0– .. | |
| Broccoli, bundle | .. 0 0– 1 0 | | Parsley, dozen bunch | 2 0– 3 0 | |
| Cabbages, per dozen | 1 0– .. | | Parsnips, per dozen | 1 0– .. | |
| Capsicums, per doz. | 0 6– .. | | Potatos, per cwt | .. 4 0– 5 0 | |
| Carrots, per bunch | .. 0 0– .. | | .. kidney, per cwt | 4 0– 5 0 | |
| Cauliflowers, per doz. | 2 0– 3 0 | | Salsafy, per bundle | 0 0– .. | |
| Celeriac, per root | .. 0 3– .. | | Scorzonera, p. bundle | 1 0– .. | |
| Celery, per bundle | 1 6– 2 0 | | Seakale, punnet | .. 2 6– .. | |
| Coleworts, doz bunch | 4 0– 6 0 | | Shallots, per pound | .. 0 3– 0 0 | |
| Cucumbers, each | .. 1 0– 1 0 | | Spinach, per bushel | 4 0– 6 0 | |
| Endive, per dozen | 1 0– 2 0 | | Sprouts, per pound | 0 3– .. | |
| Herbs, per bunch | .. 0 2– .. | | Sprue, bundle | .. 1 0– .. | |
| Leeks, per bunch | 0 1– 0 4 | | Tomatos, per lb. | 0 0– 1 0 | |
| Lettuce, per dozen | 1 0– 1 6 | | Turnips, bunch | .. 0 6– .. | |

POTATOS.—Magnum Bonums, bad trade, 50s. to 80s.; Regents, 60s. to 80s. per ton; German Reds, 2s. to 2s. 6d. per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0–18 0 | | Ficus elastica, each | 1 6– 7 0 | |
| Arbo. vitæ (golden), | | | Ferns, in variety, per | | |
| per dozen | 6 0–18 0 | | dozen | .. 4 0–18 0 | |
| — (common), dozen | 6 0–12 0 | | Foliage Plants, various, each | .. 2 0–10 0 | |
| Arum Lilies, dozen | 12 0–18 0 | | Hyacinths, per doz. | 9 0–12 0 | |
| Begonias, per dozen | 6 0–12 0 | | Marguerite Daisy, | | |
| Bouvardia, doz. | 12 0–18 0 | | per dozen | 8 0–12 0 | |
| Cineraria, per doz. | 10 0–12 0 | | Roman, per pot | 1 0– 1 3 | |
| Chrysanths., per doz. | 9 0–18 0 | | Myrtles, per dozen | 6 0–12 0 | |
| Cyclamen, 12 pots | 12 0–24 0 | | Palms in var., each | 2 6–21 0 | |
| Cyperus, per dozen | 4 0–12 0 | | Pelargoniums, scarlet, per dozen | 6 0– 9 0 | |
| Dracæna terminalis, | | | Poinsettia, per | | |
| per dozen | 30 0–60 0 | | dozen | ..12 0–18 0 | |
| — viridis, per doz. | 12 0–18 0 | | Primulas, single, 12 | | |
| Erica, various, doz. | 12 0–24 0 | | pots | .. 4 0– 6 0 | |
| Euonymus, in var., | | | Tulips, 12 pots | .. 8 0–12 0 | |
| per dozen | .. 6 0–18 0 | | | | |
| Evergreens, in var., | | | | | |
| per dozen | .. 6 0–24 0 | | | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. | s. d. | | s. d. | s. d. |
|---|---|---|---|---|---|
| Abuti on, 12 bunches | 2 0– 4 0 | | Lilium longiflorum, | | |
| Acacia (Mimosa), Fr., | | | 12 blooms | .. 6 0– 8 0 | |
| per bunch | .. 0 6– 1 0 | | Marguerites, 12 bun. | 3 0– 6 0 | |
| Arum Lilies, 12 blms. | 6 0– 9 0 | | Mignonette, 12 bun. | 3 0– 6 0 | |
| Azalea, 12 sprays | 1 0– 1 6 | | Pelargoniums, per 12 | | |
| Bouvardias, per bun. | 0 6– 1 0 | | trusses | .. 1 0– 1 6 | |
| Camellias, 12 blms. | 3 0– 6 0 | | — scarlet, 12 trusses | 0 9– 1 0 | |
| Carnations, 12 blms. | 1 0– 3 0 | | Poinsettia, 12 blms. | 4 0– 8 0 | |
| Chrysanth., 12 blms. | 1 0– 4 0 | | Roses (indoor), per | | |
| — 12 bunches | 6 0–24 0 | | dozen | .. 1 0– 3 0 | |
| Cyclamen, doz. blms. | 0 0– 0 8 | | — Tea, French, doz | 0 6– 1 0 | |
| Epiphyllum, dozen | | | red, French, doz. | 1 6– 2 0 | |
| blooms | .. 0 6– 1 0 | | Tuberoses, per 12 blms. | 1 0– 1 6 | |
| Eucharis, per dozen | 5 0– 8 0 | | Tulips, doz. blooms | 1 0– 1 3 | |
| Gardenias, 12 blooms | 5 0– 9 0 | | Violets, 12 bunches | 1 0– 1 6 | |
| Hyacinths, Rom., 12 | | | — Czar, Fr., bunch | 1 6– 2 3 | |
| sprays | .. 1 0– 2 0 | | — Parme, French, | | |
| Lapageria, white, 12 | | | per bunch | .. 4 0– 6 0 | |
| blooms | .. 2 0– 3 0 | | | | |
| — red, 12 blooms | 1 0– 2 0 | | | | |

*** *These prices will vary much during next week.*

## SEEDS.

LONDON: *Dec. 16.*—The seed market to-day was thinly attended, and no feature presented itself either of importance or interest. In fact, business in farm seeds seems to be generally postponed until the New Year. Values all round show no alteration. Of red Clover seed the total shipments to America now make up a considerable bulk. The recent advance in Trefoils, of fine qualities, is well maintained. The tendency in blue boiling Peas and Haricot Beans is in favour of holders. The trade for feeding Linseed is quiet. Canary and Hemp seed sell slowly on last week's terms. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

MARK LANE, *Dec.* 14.—The supply of English Wheat was moderate, but the demand was no better, and prices were barely supported. Foreign Wheat was a very slack sale, prices remaining without essential change. Flour hung on hand, and bids hardly up to late value. New Maize is rather lower, old corn steady. Barley and Peas were quiet, and unchanged; Beans rather more saleable, and Oats a quiet trade at steady prices..

*Dec.* 16.—Transactions in Wheat and flour, so far as they have transpired, have not been sufficient to establish actual quotations for quantity. Barley, with fairly full supplies of home-grown and foreign, was worse to sell. Maize was dull. Oats, of which fresh arrivals are light, were held firmly, and to-day could hardly have been so well bought as on Monday last.

*Average prices* of corn for the week ending Dec. 12:—Wheat, 30*s.* 6*d.*; Barley, 29*s.* 8*d.*; Oats, 18*s.* 2*d.* For the corresponding period last year:—Wheat, 30*s.* 10*d.*; Barley, 31*s.*; Oats, 19*s.* 5*d.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Dec.* 16.—Fair supplies of fruit and vegetables. Trade good; moderate prices. Quotations:—Pears, 2*s.* to 6*s.*, and Apples, 2*s.* 6*d.* to 6*s.* per bushel; Cabbages, 2*s.* 6*d.* to 6*s.* per tally; Savoys, 4*s.* to 8*s.* 6*d.* do.; Spinach, 2*s.* to 3*s.* per sieve; Brussels Sprouts, 3*s.* to 4*s.* 6*d.* do.; Cauliflowers, 2*s.* to 3*s.* per dozen; bunch greens, 3*s.* 6*d.* to 5*s.* per dozen bunches; do. Turnips, 3*s.* to 4*s.* 6*d.* do.; do. Carrots, 2*s.* to 3*s.* do.; do. Beetroots, 3*s.* to 3*s.* 6*d.* do.; do. Parsley, 1*s.* to 2*s.* do.; Celery, 5*s.* to 10*s.* per dozen bundles; Onions, 4*s.* to 5*s.* per cwt.; Carrots, in sack, 30*s.* to 50*s.* per ton; white Turnips, 30*s.* to 60*s.* do.; Swede do., 30*s.* to 32*s.* do.; Mangels, 22*s.* 6*d.* to 25*s.* do.

STRATFORD: *Dec.* 16.—The supplies to this market have been good during the past week, as also the attendance of buyers, and consequently a fair trade has been done at the following prices:—Cabbages, 5*s.* 6*d.* to 6*s.* per tally; Savoys, 4*s.* to 10*s.* do; red Cabbage, 1*s.* to 1*s.* 6*d.* per dozen; greens (bunch), 4*s.* to 4*s.* 6*d.* per dozen; Cauliflowers, 1*s.* to 1*s.* 6*d.* do. Sprouts, 3*s.* to 6*s.* per sieve; Brussels heads, 1*s.* 6*d.* per crate; Mangels, 20*s.* to 22*s.* per ton; Swedes, 25*s.* to 30*s.* do.; Turnips, 40*s.* to 60*s.* do.; Apples, 5*s.* to 7*s.* per bushel; Onions, 70*s.* to 80*s.* per ton; Carrots, cattle feeding, 28*s.* to 35*s.* do.; do., household, 40*s.* to 48*s.* do.; Horse Radish, 9*s.* to 12*s.* per dozen bundles.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 15.—Trade slow, and tone barely so firm as last reported. Quotations:—Regents, 90*s.* to 105*s.*; Magnum Bonums, 70*s.* to 90*s.*; Early Roses, 70*s.* to 80*s.*; Champions, 60*s.* to 70*s.*; German, 60*s.* to 70*s.* per ton.

COLUMBIA (East London): *Dec.* 16.—There was a good demand at the following quotations:—Magnums, 50*s.* to 70*s.*; Regents, 50*s.* to 75*s.*; Victorias, 50*s.* to 65*s.*; and Champions, 50*s.* to 60*s.* per ton.

STRATFORD: *Dec.* 16. — Magnums, 50*s.* to 85*s.*; Regents, 80*s.*; Roses, 65*s.*; and Champions, 55*s.* to 60*s.* per ton.

*Imports.*—The imports into London last week consisted of 187 bags from Ghent, 4101 from Hamburg, 14 from Rotterdam, 30 from Bremen, 3 from Amsterdam, and 2179 from Stettin.

## CATTLE.

METROPOLITAN: *Dec.* 14.—For this, the "Christmas Cattle Market," there was a splendid show all round. The magnificent exhibition of cattle was numerically more extensive than for several years past, the entries being 780 head. As usual the Scotch classes took the lead, on the score of numbers, whilst they were second to none in point of merit. This year the Scotch senders have not only surpassed the growers and contributors from the principal sources of supply in other parts of the United Kingdom, but they surpassed their own efforts on many previous occasions. The Herefords were apparently the next strongest in force. Then came the Devons, in full perfection. From Norfolk there was a conspicuous collection, as well as from Lincolnshire, Northamptonshire, &c. As with the cattle so with the sheep, the supplies were much in excess of last year, being 12,660. The collection was not only extensive but prime. The greater weight of meat was comprised in the half-breds. Prices all over fluctuated somewhat, but the following were the closing figures, which are compared with last year's:—Beasts, 4*l.* 6*d.* to 5*l.* 6*d.* (1884, 4*l.* 6*d.* to 6*l.*); calves, 4*l.* to 5*l.* (1884, 4*l.* 10*d.* to 6*l.*); sheep, 4*l.* 4*d.* to 5*l.* 10*d.* (1884, 5*l.* to 6*l.* 6*d.*); pigs, 3*l.* 8*d.* to 4*l.* 2*d.* (1884, 3*l.* 4*d.* to 4*l.* 8*d.*).

*Dec.* 17.—Trade was dull. Beasts were very difficult to move, and were decidedly lower than on Monday. Sheep sold slowly, at drooping prices. Calves and pigs were dull.

**Government Stock.**—Consols closed on Monday at 99⅞ to 99⅞ for delivery, and 99¼ to 99⅜ for the account. Tuesday's figures were 99¼ to 99⅜ for delivery, and 99 7/16 to 99 9/16 for the account. The final quotations of Wednesday were 99⅜ to 99⅜ for the delivery, and 99⅜ to 99⅝ for the account. Thursday's closing figures were 99⅛ to 99⅜ for delivery, and 99 5/16 to 99 7/16 for the account. The above quotations are ex div.


Every Garden and every Gardener suited with a

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**100 HARDY GARDEN FLOWERS,** hardy herbaceous plants, in 100 varieties, 12*s.*, 21*s.*; choice and rare, 30*s.* and 42*s.*; the 100*s.*

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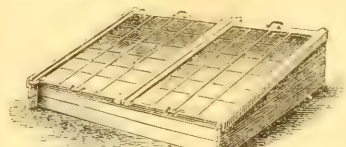
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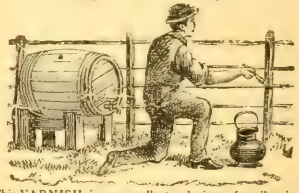
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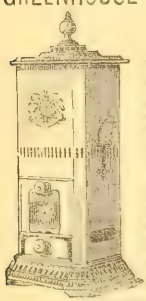
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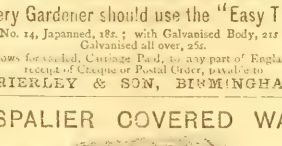
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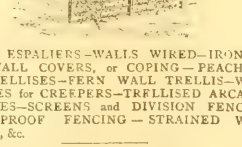
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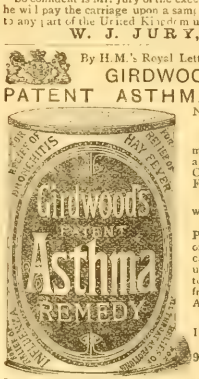
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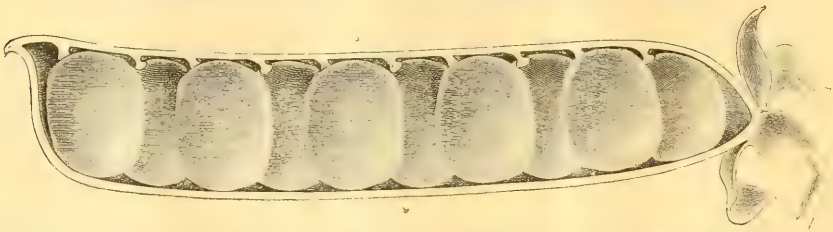

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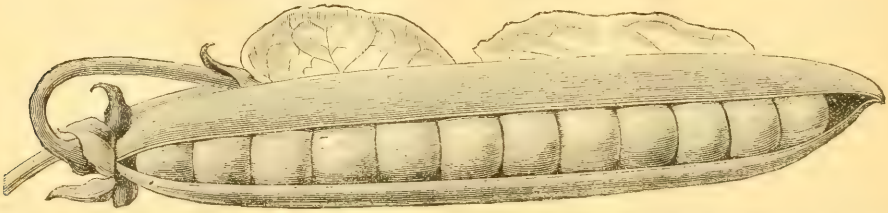
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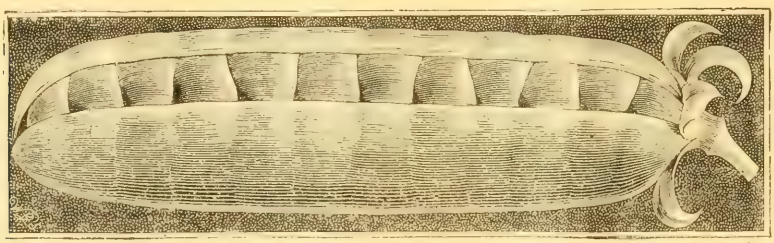
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE

# GARDENERS' CHRONICLE.

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## SPECIAL NOTICE.

*THE GARDENERS' CHRONICLE for Saturday next, JANUARY 2, 1886, will contain a beautifully COLOURED ALMANAC (18 by 13 inches), from an Original Design.*

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*NOTICE TO ADVERTISERS.*

*As a large Extra Sale of this Number is guaranteed, it will be a very valuable medium for Advertisements. Applications for space should be sent in as early as possible.*

*W. RICHARDS, 41, Wellington Street, Strand, W.C.*

### GARDENERS' CHRONICLE OFFICE TELEGRAMS.

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EXHIBITION of ROSES and other FLOWERS, FOLIAGE PLANTS, ORCHIDS, FRUIT and VEGETABLES. Special Classes open to all England.
The THIRD ANNUAL SHOW of this Society will be held on THURSDAY, July 1, 1886. Further particulars, Schedule of Prizes, and Entrance Forms, to be obtained from
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IMANTOPHYLLUM (Clivia) MINIATUM GRANDIFLORA, fresh Seed (germination guaranteed). 10 seeds, 3s. 6d.; 50 seeds, 10s.; 100 seeds, 16s.
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Rare Indian LILIES, WALLICHIANUM, NEILGHERRENSE, and the rare POLYPHYLLUM. LILIES and BULBS of all kinds.
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To the Trade.
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TRAINED FRUIT TREES.—Fine and well-rooted. 2 PEACHES, 2 APPLES, 1 NECTARINE, 1 PLUM, named, packed, and carriage paid for 18s. 6d.; half for 10s.; cash.
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GEORGE BUNYARD AND CO., The Old Nurseries, Maidstone.

## SALES BY AUCTION.

**Wednesday Next**—(Sale No. 7050.)
ROSES, FRUIT TREES, BORDER PLANTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, Dec. 30, at half-past 12 o'Clock precisely, several hundred first-class Standard and Dwarf ROSES, to name; Pyramid and Dwarf-trained FRUIT TREES, of sorts; BORDER PLANTS, in variety; and a quantity of LILIUMS, GLADIOLI, and other DUTCH BULBS for present planting, &c.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7051.)
30 very fine plants of CATTLEYA VELUTINA; 100 ONCIDIUM PRÆTEXTUM; 25 MILTONIA REGNELLI; and 12 ZYGOPETALLUM MAXILLARE. All strong plants.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 31.

On view morning of Sale, and Catalogues had.

**Thursday Next.**—(Sale No. 7051.)
VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 31, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, a fine importation of CATTLEYA WARNERI, ONCIDIUM MARSHALLIANUM, SOPHRONITES GRANDIFLORA, CATTLEYA GASKELLIANA, ONCIDIUM WENTWORTHIANUM, ODONTOGLOSSUM GRANDE, and many other valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

**Thursday Next** (Sale No. 7051).
5000 splendid Bulbs of LILIUM AURATUM, just received from Japan, in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 31.

On view morning of Sale, and Catalogues had.

**Friday Next, January 1, 1886.**
ODONTOGLOSSUM KARWINSKY.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 1, 1886, at half-past 12 o'Clock precisely, a fine importation of ODONTOGLOSSUM (Karwinsky), the flowers of which will be shown; LÆLIA CRUENTA, the beautiful and very rare ARPOPHYLLUM MÆDIUM, two new SCHOMBURGKIAS, as well as some Mexican and Central American ORCHIDS; also a quantity of established and semi-established ORCHIDS.

On view morning of Sale, and Catalogues had.

**Wood Green N.—Clearance Sale.**

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Hurst to SELL by AUCTION, on the Premises, The Nursery, Lordship Land, Wood Green, N., on TUESDAY, January 5, 1886 (unless the whole are sold previously in one lot by private contract), Twelve GREENHOUSES, thousands of feet of HOT-WATER PIPING principally 4-inch; BOILERS, PITS, remaining stock of FERNS, and other Effects.

May be viewed. Catalogues may be had on the on Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

WANTED, within a short distance of London, about a Couple of Acres of good GROUND, with good sized House and Garden; also Stables attached. Say district and lowest price to
M. G. S., Wine & Rides, Hart Street, Covent Garden, W.C.

**To Landed Proprietors, &c.**

A. McINTYRE (late of Victoria Park) is now at liberty to undertake the FORMATION and PLANTING of NEW GARDEN and PARK GROUNDS and REMODELLING existing GARDENS. Plans prepared. 115, Listria Park, Stamford Hill, N.

ANDRE LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London is very moderate. Medal of Honour at the Universal Exhibition at Paris in 1878.

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W. B. ROWE AND CO. (Limited), Barbourne Nurseries, Worcester, beg to call attention to intending Purchasers of the following splendid Specimen CONIFERS, SHRUBS, &c., specially suited for Avenues, Groups in Parks, and other places where an immediate effect is desired. All have been recently transplanted, are well-rooted, and will not fail to give satisfaction. An inspection invited. Prices, which are very moderate, may be had on application:—
ABIES DOUGLASII, 9 and 10 feet, 12s and 14 feet.
BIOTA AUREA, 5 and 6 feet.
CEDRUS ATLANTICA, 10 and 12 feet, 14 and 15 feet, 18 and 20 feet.
" DEODARA 9 and 10 feet, 12 and 15 feet, 15 and 18 feet.
CUPRESSUS LAWSONIANA, 10 and 12 feet, 12 and 15 feet, 15 and 18 feet.
LAUREL, Portugal, 4 and 5 feet, 5 and 6 feet.
" " Standards, very fine.
PINUS AUSTRIACA, 4 and 5 feet.
RETINOSPORA PISIFERA, 9 and 10 feet.
THUIA LOBBII, 15 feet.
WELLINGTONIA GIGANTEA, 8 and 10 feet, 10 and 12 feet, 12 and 15 feet.
YEW, English, 3½ and 4 feet, 4 to 4½ feet.
BEECH, Cut-leaved, handsome Pyramids.
Fern-leaved, 6 to 8 feet.
ELM, Chichester, 10 and 12 feet, 15 and 18 feet.
" Camperdown, Weeping, 9-feet stems, fine heads.
MAPLE, Norway, 12 and 18 feet.
POPLARS, of sorts, 12 to 20 feet.
SYCAMORE, 18 and 20 feet.

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" HANSONII.
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" ELEGANS, rich apricot.
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" " semi-double, second row of petals white.
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PINUS ALBA, of Danish Harvest 1884
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First quality. Apply to
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LILY of the VALLEY (very fine).
ROMAN HYACINTHS.
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Can offer a regular supply at reduced prices.
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FOREST TREES, FRUIT TREES, and EVERGREENS, in large quantities:—
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*beg to GIVE NOTICE that they have secured permanent Offices at*

**No. 50, PARLIAMENT STREET, WESTMINSTER, S.W.**

*and it is respectfully requested that all communications may be addressed there.*

*By Order,*
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*November 3, 1885.*

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FERNS.—Strong, healthy, and handsome Lomaria gibba, Adiantum cuneatum (Maidenhair), Pteris tremula, Pteris serrulata, Pteris serrulata cristata, Pteris cretica albo lineata, Pteris argyrea, out of small pots, 2os. per 100, 3s. per dozen.
GARDENIA INTERMEDIA (true), 6s. per dozen.
Packages and parcels post-free.
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Gilbert's selected ONION SEEDS, saved from all the best shapes and finest Bulbs, Magnum Bonum, White Spanish, and Bedfordshire Champion, 9d. per packet.
PRIMROSE SEED, crossed with Harbinger, from a very fine collection 1s. 6d. per packet.
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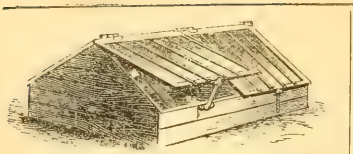


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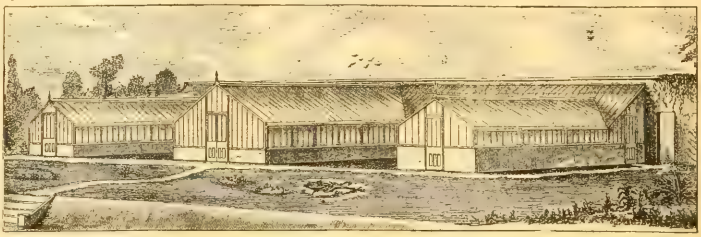
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1885.

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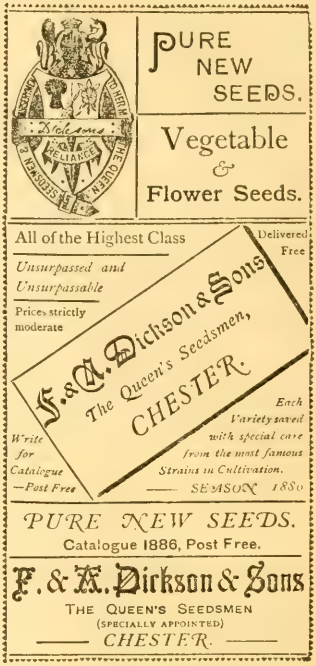
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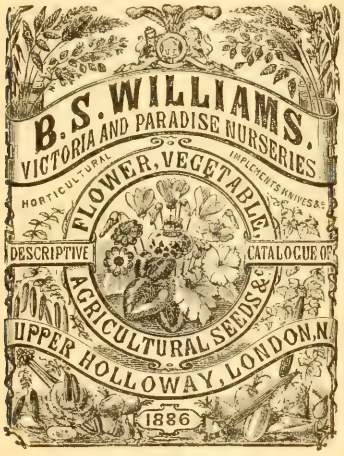



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THE

# Gardeners' Chronicle.

*SATURDAY, DECEMBER 26, 1885.*


## HURSLEY.

THERE are few country churches within whose sacred folds, dotted over with gravestones, some worthy of national or provincial note has not been laid to rest. The name of Hursley naturally recalls that of its famous Vicar, Dr. Keble, who was mentioned disrespectfully, like many other good men, by T. Carlyle, in a letter written from The Grange. That delightful writer, and very disagreeable person, was unaware, probably, that Hursley was the burial place of Richard Cromwell, the eldest son of one of his own heroes, the great Protector; and when a party from The Grange, including Stirling, the famous curate of Hurstmonceaux, and Wilberforce, Bishop of Winchester, drove and rode over to Hursley to visit the Editor of the *Christian Year*, he wrote to poor Mrs. Carlyle, and spoke of the Vicar of Hursley as "an ape named Keble." In spite of the man of genius who used this expression, Hursley has become a place of deepest interest to those who believe that in our future progress Cromwells and cataclysms may be averted by the good influence of teachers of another sort.

The church here also holds the dust of that unaspiring old gentleman already named, who succeeded his father Oliver as Protector, sat several times on the throne, and narrowly escaped a crown and burial at Windsor, where the Georges now moulder. Richard Cromwell—called in the domestic circle Dick—acquired Hursley by marriage, lost possession of it at the Restoration, and on his return to England some years afterwards, his son Oliver, being then in residence, refused to go out. Richard did not care to dispute the usurpation, but when Oliver's sisters took possession at the death of their brother, the old man, then eighty years of age, determined on pressing his claim to the property. The story of his evidence in the Court of King's Bench, and of the claims of his two daughters, cruel and unnatural as those of Lear, forms a touching episode in the history of one of the most retired spots in Hampshire. On his appearance in court the Lord Chief Justice, to his honour, treated the old man with great respect, and desired him to be covered, in recognition of the almost regal position which he had held as Protector in succession to his father. Having given his evidence and gained his suit, he strolled into the House of Lords, where an official asked him if he had ever been in that Chamber before; "Not since I sat in that chair," he replied, pointing to the throne. Richard Cromwell died at Theobalds, Herts, and lies buried, with about a dozen of his family, within the walls of this quiet country church at Hursley.

I reached the spot from Chandler's Ford, the nearest station, close to Bishopstoke, on the South-Western Railway. Changes have overtaken Hursley, and to some extent disaster has befallen it. In 1718, after Richard Cromwell's death, his daughters sold the estate to Sir William Heathcote, who pulled down the stately old Elizabethan house, and built a more modern

mansion in its place. The story runs that Sir William refused to occupy the house of the Cromwells. The descendant of this staunch royalist, the late Sir William, died a few years since, and Hursley is at present under a cloud, being hard hit as regards the revenues of the estate by agricultural distress and the fall of prices. The soil of the park is good, and the Elms and Beeches are fine. A wonderful Yew hedge fences the forcing department from the rest of the kitchen-garden, having been planted to defend it from wind, which it does very effectually, and to screen it from observation. Nothing could be grander of the kind, but a brick wall covered with fruit trees must be more useful than a vegetable rampart 10 feet thick, which harbours insects and other garden pests, and which requires an annual expenditure of labour to trim and clip it.

The vicarage at Hursley, the home during thirty-one years of John Keble, author of the *Christian Year*, is an unambitious, but comfortable residence, built of flint—a gem, so far as appearance goes, sheltered by ornamental trees of several sorts, such as the Plane, Elm, Beech, evergreen Oak, Yew, and Cedar of Lebanon, many of them overtopping the house at a little distance from it. The north wall is covered by that good old domestic creeper, the ever-present Ivy. The whole group formed by the church and vicarage and adjacent schools occupies a corner of the park, while the lych gate of the churchyard opens on the village street. A lawn and flower beds are interposed between the house and the west wall of the churchyard, and on entering the latter with its surrounding screen of Limes, Elms, and Yews, you see on your right a very plain building of the dairy and dove-cote order of architecture—the unsightly tomb-house of the Heathcotes: a most uncomfortable looking place to be buried in, and a great discredit to any churchyard. At a little distance from this erection, close to the pathway leading to the church, lies, as we read on the granite pediment of his plain monument, "the body of John Keble, Vicar of this parish." It is also recorded that he died on Maunday Thursday, March 29, 1866, aged 74 years. His wife, who died six weeks later, rests by his side. The church is now a large one, having been restored and enlarged in commemoration of Mr. Keble. There is no monument to any of the Cromwells, and nothing prominent in memory of Richard the Protector; but a member of the family placed a slab against the wall of the church in an inconspicuous corner, where it can attract no attention, and on this the names of a number of Cromwells who were buried here are recorded. *H. E.*

# Orchid Notes and Gleanings.

## "LINDENIA"

THE last issued part of this journal contains coloured figures of several first-class Orchids, among them the ivory-white

*Vanda Denisoniana* (t. 21), for which Comte du Buysson recommends basket culture, abundance of light without direct exposure, and generally the culture requisite for the species of Aërides.

*Cypripedium selligerum majus* × (t. 22), a magnificent hybrid from C. barbatum, fertilised with the pollen of C. lævigatum. The dorsal sepal is broadly ovate acute, white, with purple ribs; the lateral petals are narrow, strap-shaped, and hairy at the margins, and the bag-shaped lip is glazed and purplish-brown.

*Phalænopsis Sanderiana* (t. 23) is worthy almost any adjective in our repertory, only it is a general editorial rule to strike out adjectives of comparison. The flowers are as large as those of P. amabilis, but of a lovely rosy-lilac colour as to the perianth segments, the lip being white.

*Trichocentrum tigrinum var. splendens* (t. 24).—The flowers of this variety are 3 inches across, the segments lanceolate, dull yellow, with purple spots, the lip obcordate, white, rosy-lilac at the base. The plant itself is not more than 5 or 6 inches high, so that the large size of the flowers produces a remarkable effect. The culture is easy. It should be grown in small baskets filled with sphagnum, peat, and wood charcoal. It should receive abundance of water in the growing season, and a very moderate supply at other times.

### CALANTHES.

What wonderful additions have been made to this useful winter flowering section during the last few years! Messrs. Veitch were, as usual, first in the field. C. Sedeni, raised by them, is distinct and handsome; so, also, is the beautiful C. Bella, for which a First-class Certificate was awarded by the Royal Horticultural Society in 1881. It has a handsome spike of rose or pink-coloured flowers. C. Sandhurstiana, raised by Mr. Gosse of Torquay, and exhibited by Sir T. Lawrence, Bart., in December last year at South Kensington, where it received the First-class Certificate it so well deserved, is a great gain. Again, Mr. Cookson, of Oakwood, Wylam-on-Tyne, exhibited a charming group of seedlings raised by himself on October 27 last at South Kensington. The certificated varieties are described at p. 566. At the Floral Committee meeting on December 8, Sir T. Lawrence, Bart., exhibited another group of seedlings in some respects very similar to those exhibited by Mr. Cookson, with the exception of that richly-coloured variety, C. porphryrea, which is certainly distinct from any hitherto exhibited; it was the only one selected by the committee for a First-class Certificate. The old forms of C. vestita have done good service not only as ornamental flowering plants at this dreary season of the year, but as furnishing the parentage of these very superior varieties above alluded to. They will now have to give place to superior merit. Calanthe vestita Williamsii must not be omitted, as it is also a real acquisition; it is figured in the *Orchid Album*, plate 134: the bulbs show it to belong to the Turneri group, but the rich rosy-crimson lip, and the peculiar suffusion of the same colour in the sepals and petals, on a white ground, have a charming effect. C. Regnieri is also very distinct as a species; it has recently been introduced from Cochin China, and as there are many distinct forms of it which flower late, it will be of some value on that account. *J. D.*

### ONCIDIUM JONESIANUM.

Some grand varieties of this lovely Orchid are now in bloom with Messrs. Fred. Horsman & Co., of Colchester, one of them being really superb. Its flowers are borne eight on a spike, each flower 2 and 3¼ inches across. The sepals and petals are yellowish-white blotched with dark-reddish crimson and margined with white. The labellum is broad and beautifully crimped at the edge, snow-white on the expanded portion, the upper part around the column being bright yellow sparingly marked with bright red. Any variety of O. Jonesianum is pretty enough, but some of them, like that described, are simply lovely. There is no doubt that the plant does best on a block and hanging head downwards.

# JEWISH FLOWER GARDENS.

THERE are in the Bible no direct references to the culture of flowers. Indeed, it is curious to note that in the usual generic sense of the word there is no Hebrew equivalent for the term "flowers." We should be disposed to say that mere beauty of form in these "gems of the field" appealed less to the Hebrew than fragrance of odour. Not that he was insensible to the beauty of the blossom—its rich colouring and graceful growth; but he was always subjective rather than objective, and thought, characteristically enough, more of the perfume of a plant than of the beauty of its flowers. And aromatic plants he especially seems to have delighted in, as the reader would infer from the number of such referred to in the Bible. Hence, the nearest approach to our generic term "flower" is to be found in the Hebrew word "bosem," really signifying "fragrant or scented plants," as used in the Song of Solomon: "I have gathered my myrrh with my fragrant balsam-plant."

The translation of the Authorised Version in this passage is altogether out, for "spice" is ridiculous in such a connection, since spices are not gathered from growing plants in a flower-garden. *Bible Flowers.*

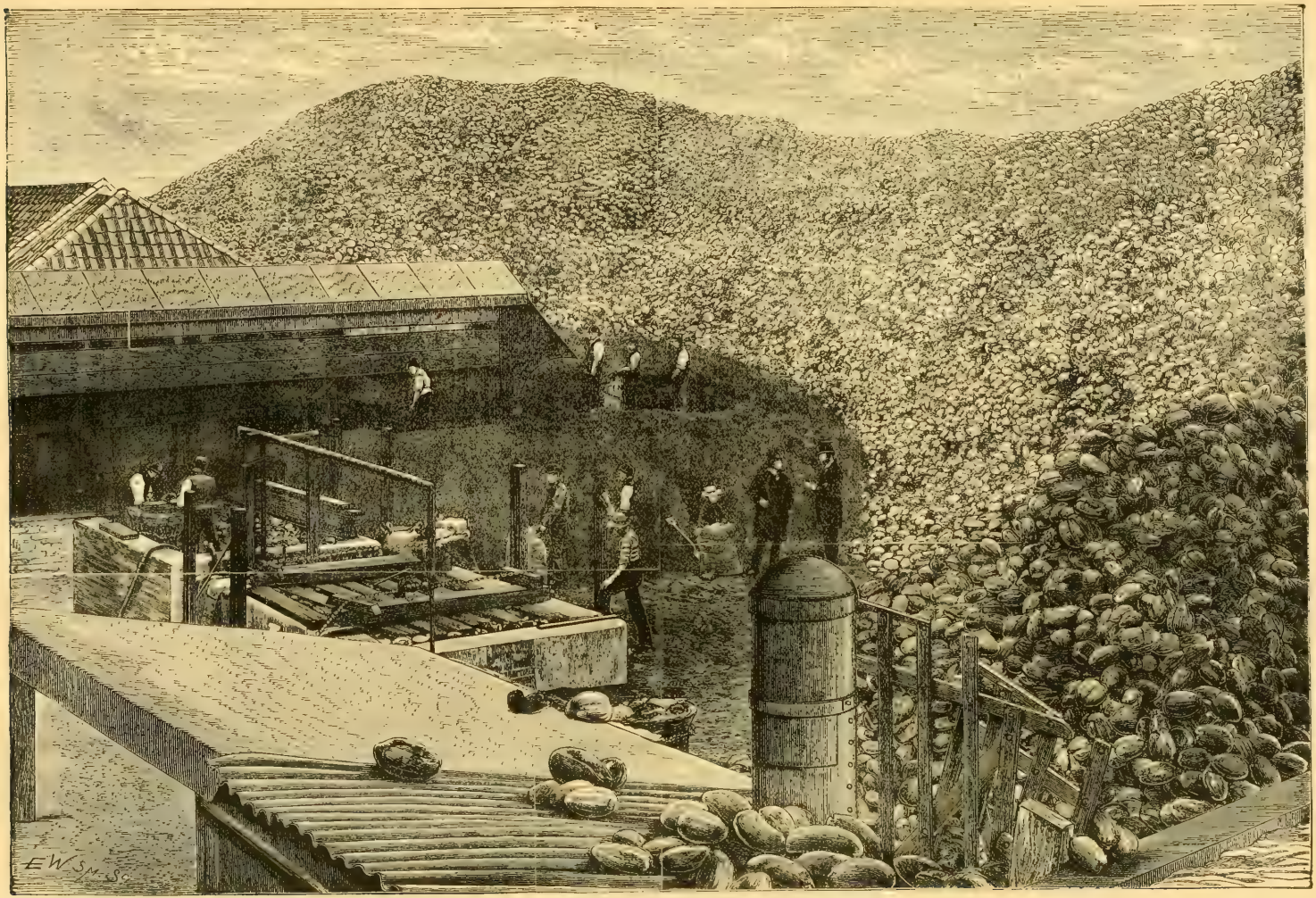
# COCOA-NUT FIBRE.

IT was Linnæus who first called the Palms the "princes of the vegetable kingdom," but it has been reserved to writers of the present day to designate the Cocoa-nut and the Palmyra respectively the "prince of Palms;" which of these two plants, however, is most entitled to the term it is difficult to say, for we read that the Palmyra (Borassus flabelliformis) has been immortalised in a poem in the Tamil language, and though 801 uses of the Palm have been thus recorded, the list is by no means exhausted. Whether it would be possible to enumerate so many uses for the Cocoa-nut Palm (Cocos nucifera) I have not been at the trouble to enquire, but I venture to believe that for sterling value as a commercial plant the Cocoa-nut can compete any day with the Palmyra, or any of its allies.

It would seem that with a plant so well known as this, and about which so much has been written, nothing now remains to be said. It is an old story to be told that the outer husk yields coir; that the inner hard shell can be, and is, generally carved into ornamental cups; that the kernel of the nut itself is edible when fresh, and that it yields large quantities of oil when dried. These are facts known to all who know a Cocoa-nut when they see it, and what schoolboy is there who is not acquainted in some way with this familiar nut? But each one of its uses might be dilated upon, and to use an oft-repeated term, "volumes might be written" upon each; but our business at present is only with the husk, apparently a minor portion of the Cocoa-nut commercially considered. A glance at the engraving, however, will show that a large trade must be centred about these "unconsidered trifles," and that such is the case I shall endeavour to show by briefly recording what I saw on a visit to the Cocoa-nut fibre works of Messrs. Chubb, Round & Co., situated in West Ferry Road, Millwall. This firm is one of, if not the largest importers and manufacturers of Cocoa-nut fibre, and their stock of material, which is well shown in the engraving, is a very striking sight. The enormous heap of husks—which, indeed, is known in the locality as the "mountain"—comes upon view immediately upon entering the premises, and one can scarcely, at first sight, realise the fact that the enormous pile is composed entirely of these apparently useless portions of the fruit. At the time of my visit this reserve stock of husks was estimated at considerably over a million and a half, and presented an appearance as shown in the engraving (fig. 186), which is from a photograph taken by Mr. John G. Horsey only a week or so previously. Before proceeding to describe the various processes through which the husks pass to convert them into marketable material, it will be well to say something about the nuts themselves.

Cocoa-nuts, or as they are generally termed in the trade Coker-nuts, to distinguish them from the Theobroma Cacao which furnishes cocoa and chocolate, are shipped principally from Trinidad, Jamaica, Demerara, Tobago, several of the other Leeward Islands in the British West Indies, Ceylon, Belize (British Honduras), all round the coast of America, and the Fiji Islands; the quantity landed in the United Kingdom being about 12,000,000 yearly. Nearly all the nuts are imported in the husks or outer covering, from which, on arrival, they are stripped by men using two fine-pointed steel chisels, and who, by constant practice, become so skilful in the art that many are able to open 1000 to 1200 nuts per day. The nuts themselves after being removed from the husks are generally sold to wholesale fruit dealers, who, in turn, supply the retailers, costermongers and others, but they are likewise often sold under the hammer at public auction.

After removal from the husk they are sorted into seven sorts or varieties, known respectively as large milky, middle size, small, starters, milky growers, green and dry. Those from Trinidad are the sweetest in flavour, and are mostly preferred by the manufacturing confectioners, biscuit-makers, and others, though the Ceylon nuts run them very close in quality. Cocoa-nuts are largely used in the North and West of England, and they are also in great demand at holiday times, at fairs, on racecourses, and such-like gatherings in all parts of the kingdom. The husks, after the nuts have been cracked, are stacked in the yard in the open air, as shown in the engraving, until they are required for conversion into fibre; for this purpose they are first passed singly through a powerful "crusher," or



The Gardeners' Chronicle.]

FIG. 186.—COCOA-NUT FIBRE MANUFACTORY. (SEE P. 808)

December 26, 1885.

"back-breaker," driven by steam power, with large revolving, corrugated wheels, which flatten the husks, and to a certain extent make them more pliable; but after this severe pressure, so springy is the nature of the husk that, somewhat like a sponge, they immediately assume their original shape on emerging from the crusher. They are then thrown into huge stone tanks, each holding many thousands, where they undergo several hours' steaming and soaking. Great care and skill are required to know how long to keep them in the tanks, husks from different countries requiring more or less time according to circumstances, such as age, thickness of outer cuticle, substance of fibre, and other peculiarities known to the manufacturers. In the tanks the husks swell considerably, and have to be kept down by heavy pressure. One of the tanks filled with husks is shown in the centre of the engraving.

After the husks are sufficiently soaked they are ready for the mills, which are technically known as "Teasers" or "Devils," and consist of cylinders or drums, each being studded on the outer circumference with about 3000 fine or thick 3-inch steel teeth, specially tempered. The mills vary slightly according to certain requirements. They are driven by steam, and revolve with great rapidity, requiring the utmost care and constant attention of the workmen. Each husk is divided longitudinally into thin pieces, and each piece is passed into the mill separately by the workman between two steel rollers, the workman retaining a firm grip of it so as not to allow it to pass out of his hands; but the few moments he holds it there the drum with its numerous steel teeth is revolving, and combing out the irregular fibre and refuse. After one-half of the slice of husk is thus cleaned the workman reverses it, passing in the other half. The continual feeding of these mills gives such strength of wrist and dexterity to the workmen that what appears a very dangerous operation is gone through with wonderful rapidity, and each slice of husk is passed through three of these mills in succession, occupying but a few seconds from the time that the crude husk is passed into the mill until it comes out a perfectly cleaned bundle of light brown separated fibres; these bundles are next laid out in drying rooms on heated iron tables to perfectly dry them, when they are ready for making brushes and brooms of various kinds.

But to return to the mills. It will be seen that the principal attention has been given to the long clean fibres used for brush-making, but there are other products to which I have not yet alluded. If a Cocoa-nut husk is cut through transversely it will be found that immediately under the outer woody coating the long brush fibres, if we may so call them, are deposited to the thickness of about half-an-inch; nearer the centre, and immediately surrounding the nut the fibres are more irregular, somewhat matted, and mixed with soft brown refuse. In the process of passing through the mill and separating the brush fibre this finer fibre and refuse is thrown out at the back, from whence it is collected and placed on elevators, and carried automatically into the mouths of double rotary screens, or "willows," peculiarly made for the purpose, a spindle fitted with arms or rods running the entire length, and after many revolutions and much tossing about the fibre is separated, and falls out at the lower ends clean and ready to be dried. This fibre is used for matting, and is not only supplied by the firm in large quantities for mat makers, but also to the Government for mat-making in prisons; it is further largely used for stuffing mattresses, saddles, &c. The refuse, by a special process of the present proprietor, is separated into two different qualities, the ordinary coarse kind being used for general horticultural purposes, and the granulated for conservatory use and potting.

Enormous quantities of this Cocoa-nut fibre refuse are produced by the firm. A heap is shown behind the tank in the engraving, and I was informed that it was no uncommon thing for them to dispatch 20 tons in one consignment, and that the material is sent to all parts of the world, including America, Africa, Australia, Sweden, Germany, France, Holland, &c.—the latter countries using it extensively for bulb growing. It is not a little remarkable that this refuse Cocoa-nut fibre should, in some cases, find its way back in a changed form to the countries from whence the nuts were originally brought.

In conclusion, I have to acknowledge my indebtedness to Mr. Thomas Nevell, the present proprietor, for his kindness in allowing me to inspect the works, for his courtesy in personally showing me over them, and carefully explaining the details of manufacture, as well as for much of the information contained in this paper. *John R. Jackson, Museum, Royal Gardens, Kew.*

## A SYNOPSIS OF THE SPECIES AND HYBRIDS OF NERINE.

(*Continued from p.* 779.)

4. N. PUDICA, Hook. fil., in Bot. Mag., t. 5901.—Bulb globose, about 1 inch diameter. Leaves 4—6, glaucous, contemporary with the flowers, sub-erect, 8—9 inches long, ¼—⅜ inch broad. Peduncle slender, subterete, 1—1½ foot long. Umbel centripetal, 4—6 flowered; pedicels slender, 1—1½ inch long; spathe-valves lanceolate, as long as the pedicels. Ovary globose-trigonous, ⅛ inch diameter. Perianth erect or deflexed, 1¼ inch long, with a very short tube. Segments oblanceolate, thin in texture, scarcely at all crisped, white with a pink keel. Stamens declinate, the three longest a little shorter than the perianth-segments. Anthers oblong, ⅛ inch long. Style declinate, reaching to the tip of the perianth-segments. Seeds globose.—Flore des Serres, t. 2164.

Var. *N. Elwesii*. Leichtlin.—Leaves much broader, bright green, more persistent, distinctly veined, furnished with a prominent midrib. Umbel more compact; pedicels stouter. Perianth segments pale rose, with a darker keel, thicker and more waxy in texture.

The history of this plant is not clearly known. It was first described from a plant that flowered in Kew Gardens in 1868.

5. N. FILIFOLIA, Baker, in Bot. Mag., t. 6547.—Bulb globose, under an inch in diameter, with pale tunics produced a short distance over its neck. Leaves 6—10, contemporary with the flowers, grass-green, subulate, very slender, suberect, 6—8 inches long. Peduncle slender, terete, green, finely glandular-pubescent, a foot long. Flowers 8—10 in a centripetal umbel; pedicels slender, 1—1½ inch long; spathe-valves lanceolate, green, under an inch long. Ovary globose-trigonous, green, ⅛ inch in diameter. Perianth deflexed, bright red, an inch long, cut down to the ovary; segments oblanceolate-unguiculate, ⅛—⅛ inch broad, crisped. Stamens, declinate, shorter than the perianth-segments; anthers oblong, reddish. Style equalling the longer stamens.

Hab., Orange Free State. Sent to Kew by Mr. Ayres in 1879.

6. N. UNDULATA, Herb., App., 19.—Bulb ovoid, ¾—1 inch diameter; tunics pale, membranous. Leaves linear, contemporary with the flowers, bright green, 1—1½ foot long, ¼—½ inch broad. Peduncle slender, 1—1½ feet long. Flowers 8—12, in a centrifugal umbel; pedicels slender, 1—1½ foot long; spathe-valves lanceolate, as long as the pedicels. Ovary globose-trigonous, ⅛—⅛ inch in diameter. Perianth-limb pale pink, 8—9 lines long, cut down very nearly to the ovary; segments oblanceolate, much crisped. Stamens declinate, about as long as the perianth-segments. Style declinate, as long as the perianth-limb.—Herb. Amaryll., 283, t. 45, fig. 2; Kunth, Enum., v., 621. Amaryllis undulata, Linn. Syst. Veg., 264; Miller, Icones, t. 8; Hill. Hort. Kew., 352, cum icone; L'Herit. Sert., 16; Bot. Mag., t. 369; Red. Lil., t. 115; Jacq., Hort. Vind., iii., t. 13; Tratt. Tab., t. 393. Hæmanthus undulatus, Thunb. Fl. Cap., edit. 2, 297. Nerine crispa, Hort.

Var. *N. major*, Tratt., Tab., t. 394.—Perianth-limb larger and less crisped. N. aucta, Roem. Amaryll., 107. Amaryllis aucta, Tratt., Thes., ix., t. 45.

Hab., Southern Provinces, Thunberg; Cooper, 1532, 3220; Bolus, 2686; Orange Free State, Cooper, 2235.

7. N. HUMILIS, Herb., App., 19.—Bulb ovoid, 1—1½ inch in diameter; tunics pale, membranous. Leaves about six, contemporary with the flowers in November, linear, bright green, suberect, channelled down the face, about a foot long, ½—⅝ inch broad. Peduncle slender, subterete, slightly glaucous, ½—1½ foot long. Flowers 10—20, in a centrifugal umbel; pedicels slender, 1—1½ inch long; spathe-valves lanceolate, greenish, about as long as the pedicels. Ovary globose-trigonous, ⅛—⅛ inch in diameter. Perianth-limb bright pink or rose-red, cut down very nearly to the ovary, 1—1¼ inch long; segments oblanceolate, acute, crisped. Stamens declinate, the three longer, about equalling the perianth-segments; anthers oblong, purple, ⅛ inch long. Style declinate, as long as the perianth-limb.—Herb. Amaryll., 283; Kunth, Enum., v., 621. Amaryllis humilis, Jacq. Hort. Schœn., i., 36, t. 69; Bot. Mag., t. 726; Red. Lil., t. 449.

Hab., Southern Provinces, from Cape Town eastward to Kaffraria, Thunberg, Drege, Zeyher. Differs from flexuosa by the centrifugal expansion of its inflorescence, and by its dwarfer habit and narrower channelled leaves.

8. N. LUCIDA, Herb., Amaryll., 283, tab. 26, fig. 3.—Bulb globose, 3—4 inches in diameter, with the membranous tunics produced round the neck 2—3 inches above its apex. Leaves 6—8, contemporary with the flowers, linear, bright green, spreading, flaccid, a foot or more long, ½—¾ inch broad, scabrous on the margin. Peduncle short, ancipitous, 3—8 inches long, ¼—½ inch diameter. Flowers 20—30 in a centripetal umbel; peduncles stiff, moderately short, 3—4 inches long; spathe-valves ovate-lanceolate, much shorter than the pedicels. Ovary globose-trigonous, ¼ inch in diameter. Perianth-limb 1½—2 inches long, pale or bright red, cut down to a cup ⅛ inch long; segments oblanceolate-unguiculate, ¼ inch broad, hardly at all crisped. Stamens and style declinate, nearly as long as the perianth-segments. Capsule depresso-globose, ½—½ inch in diameter.—Kunth, Enum., v., 620. Amaryllis lucida, Burchell, Cat., No. 1969. Brunsvigia lucida, Herb. App., 16; Roem. et Schultes, Syst. Veg., vii., 847. Amaryllis laticoma, Ker in Bot. Mag., t. 497.

Hab., Central Province, in the Gariep district; Burchell, 1969; Macowan, Sand River; Burke, Transvaal; Todd, Baines. A very distinct species, not, so far as I am aware, now in cultivation.

9. N. MARGINATA, Herb., Amaryll., 283.—Bulb ovoid, 2—3 inches in diameter, with imbricated dark brown membranous tunics, and very stout root-fibres. Leaves four, produced after the flowers, spreading, lightly obovate, 6—9 inches long, 2—2½ inches broad, with a reddish crimped cartilaginous margin. Peduncle stout, compressed, ½ foot long; flowers 12—20, in a centripetal umbel; pedicels, 1½—2 inches long; spathe-valves, deltoid, shorter than the pedicels. Perianth erect, bright scarlet, cut down to the ovary, 1¼ inch long; segments oblanceolate, but little crisped, ¼ inch broad. Stamens sub-erect, a little longer than the perianth segments. Style sub-erect, a little longer than the stamens.—Kunth, Enum., v., 615. Amaryllis marginata, Jacq. Hort. Schœn., i., 34, t. 65. Brunsvigia marginata, Ait. Hort. Kew, edit. 2, 230; Gawl., in Bot. Mag., sub t. 1443. Imhofia marginata, Herb. App., 18. Elisena marginata, Roem. Amaryll., 63.

Hab., South-western Provinces; known to me only from Jacquin's figure. There are no dried specimens in the London herbaria.

### HYBRID FORMS.

The following hybrid Nerines were raised long ago by Dean Herbert, viz.:—

1. *N. Mitchamiæ* ×, Herb., Amaryll., t. 45, and *N. versicolor*, hybrids between curvifolia and undulata.
2. *N. Haylocki* ×, between curvifolia and pulchella.
3. *N. pulchella* × *undulata*.
4. *N. Sposforthiæ*, between venusta and undulata.
5. *N. pulchella* × *humilis*.
6. *N. humilis* × *undulata*.
7. *N. curvifolia* × *venusta*.

These, I believe, have all died out, but the following are in existence in cultivation at the present time, viz.:—

8. *N. amabilis* ×, a cross between pudica and filifolia.
9. *N. Cami* ×, between curvifolia and undulata.
10. *N. atro-sanguinea* ×, between Plantii and flexuosa.
11. *N. cinnabarina* ×, between Fothergillii and flexuosa.
12. *N. O'Brieni* ×, of which N. carminata and Fothergillii are forms, between pudica and Plantii.
13. *N. erubescens* ×, between flexuosa and undulata.
14. *N. elegans* ×, between flexuosa and sarniensis major.

*J. G. Baker, Kew Herbarium, October, 1885.*

## THE NEGLECT OF SHRUBBERIES.

YOUR leading article on this head will strike a responsive chord in the thoughts of many of your readers. There is a great and increasing treasury of fine-foliaged and flowering shrubs scarcely ever drawn upon. Last spring there was a paragraph in your contemporary *The World*, which, from the tone of its dictums, evidently pretends to omniscient knowledge, stating that the only Judas trees in England were in the Dulwich College grounds. Such a mistake is almost excusable. Conspicuousness on account of its absence is, indeed, the lot of this tree. Why so few are met with is a fact hard to be explained. The Cercis flowers almost as early as the daring Daffodils, and is one of the first inmates to awaken the shrubbery from its winter sombreness. One of the most beautiful landscapes of colouring I ever saw in South Europe was the side of a valley in which many Judas trees had been planted. The purple of their flowers and the bright spring leafage of the other trees formed a picture which one came to view every day. Coming nearer

home, the same combination, albeit on level greensward, makes in the early spring Sir Charles Bunbury's arboretum at Barton, near Bury St. Edmund's, an inefficeable recollection. Cercis siliquastrum is indeed an object for a villa garden. Can any of your readers say that he has seen Judas trees in six different villa gardens? I very much doubt if any can. In very many cases a new villa holder gives a *carte blanche* to a nurseryman to send him a certain number of suitable trees. Nobody can blame the tradesman for continually sending the same evergreens his regular clients seem mostly to plant and desire. As your leader says, "The popular taste wants educating." Another beautiful old shrub, very much neglected, is Colutea arborescens. Is it that people get so tired of the Laburnums that they do not care about a similar effect in July or August? or is it not that comparatively few wot of the additional brightness and charm given to any part of a shubbery, not only by the flowers but also by the seed-vessels of this Colutea? A multiplication of like examples would be easy—the Spindle tree for one. The Sumachs and Rosa rugosa seem to be becoming popular, and one has only to see Canon Ellacombe's garden at Bitton to wish the same fate for many other species of the Rose, as well as many of the Brambles. One of the most instructive lessons upon the additional beauty supplied by flowering shrubs and plants to shrubberies, to be gained in the British Isles, is a thoughtful stroll through the pleasaunce of Mr. Smith Dorrien's home in Scilly. Although September is not a good month for such a purpose, a list of what was in flower (omitting many common sorts) on September 7, may be reading from which some may care to conjure up a mental picture. The list may also be of value to dwellers in Cornwall, South Devon, Pembrokeshire, and parts of Ireland.

Fourcroya longæva
Aralia trifoliata
Cassia corymbosa
Cytisus cal'ycinus
Salvias, of sorts
Phormiums, flowers and seeds of nearly all the varieties
Banksia serrata
,, littoralis
Correa virens
,, speciosa
Polygala Dalmaisiana
Olea fragrans
Habrothamnus fasciculatus
Solanum robustum
,, lanceolatum
Dolichos lignosus
Physalis capensis
Melaleuca hypericifolia
,, pulchella
,, huxifolia
Bupleurum fruticosum
Candollea tetragona
Eurybia purpurea
Erythrina crista-galli
Medicago arborea
Diplolæna glutinosa
Santolina chamæcyparissus
Clethra arborea
Dodonæa viscosa
Escallonia organensis
Psoralea sericea
Elæocarpus grandiflorus
Platycodon autumnalis
Tritoma uvaria
Milla laxa
Francoa ramosa
Oxalis, of sorts
Eucomis punctata
Commelina coelestis
Colchicum Parkinsoni
Agapanthus
Neja gracilis
Lilium Harrisii
Crinum Moorei
Leucoium autumnale
Hemerocallis fulva
Dietes bicolor
Nerine sarniensis
,, Fothergilli
Clivea nobilis
Solanum jasminoides
Mandevilla suaveolens
Chanthus puniceus
Aloe saponaria
,, spicata
Apicra pentagina
Haworthia limpida
,, semiglabrata
,, papillosa
Rochea falcata
Gasteria decipiens

*C. A. M. C.*

# The Apiary.

BEES are now in repose, and on no account whatever must that repose be disturbed. It is worse than useless to manipulate them in any way or to feed them till March, whether they have much honey or little. If they only have a little honey opening hives would cool them, and the bees would probably eat all the honey to restore warmth, and would then give up the ghost. But this is just the time when lots of things can be done to forward the summer work. Even as a good gardener will now be preparing all kinds of things for summer, so will the good bee-keeper do the same for his bees. For some days past I have been spending all my leisure time in getting section-boxes all ready for supering. A very good size of crate is one to hold fourteen of these boxes, seven in a row. I fix little pieces of thin foundation in the sections the shape of a triangle, with the apex pointing downwards. There are various ways of fixing the foundation: I have found the following eminently successful:—Melt a little wax, then take a triangular piece of foundation, and dip a side of it in wax, and immediately put in position. The wax will at once cool, and the foundation will be fixed firmly enough. Then put these section boxes in the crate, and put separators between the sections. It is quite necessary to put separators, or the bees would stick all the boxes together in a solid lump. Many bee-keepers use very thin wood for this purpose, as being warm—I always use perforated zinc, and have found it very successful. Perforated zinc has this advantage—the bees can see one another at work through the perforations, and the sight of each other at work seems to act as a stimulant to further exertion. When I have filled the crate with the sections, and put them in position, I wrap the crate up in a newspaper, and then put them away in a dry corner for spring and summer use. When the busy season comes you will be very pleased to take these boxes down, and put the crates on the hives. Many other things can be done, such as cleaning all the articles not in use, repainting hives, &c. If you want to paint hives which are out-of-doors, do it on a windy and cold day; the hives will soon dry and the smell soon pass off. It is better in such cases not to paint the alighting board. I hope in my next paper to give my readers a few hints on the management of different kinds of bees. *Agnes.*

# Florists' Flowers.

## WINTER FLOWERING CARNATIONS.

THIS type of the Carnation is exceedingly valuable during the months of December and January if the weather is sufficiently favourable to the perfect development of the blooms. This is not always the case, as the present season so far is proving. We have had great difficulty in obtaining good flowers owing—not to the want of the best horticultural appliances, to which has been added careful culture—but owing entirely to the want of sun, and not only to the want of it, but also to the unusually heavy state of the atmosphere. The winter flowering zonal Pelargoniums, grown in the same house, which in ordinary seasons are a blaze of colour, are also most unsatisfactory. All this is matter for regret; but over it we have no control, and the careful, zealous cultivator will plod on, in the even tenor of his way, and trust to have better luck next time. I would like to point out to cultivators of these plants, or to those intending to take up their culture, that in order to command anything like a fair measure of success the plants must be well cultivated from the first. How can plants that have been allowed to grow for two or three months in small 60-pots during the months of March, April, and May, be expected to grow into good flowering specimens by the end of the season? In less than a month we shall plant our cuttings. In most cases they can be readily obtained from the old plants; the slender side growths are the best to make cuttings from, and they do not take long to form roots, if they are placed in a little bottom-heat in a forcing-house. I place the pots containing the cuttings close together, and as at this early season it is sometimes necessary to apply a good deal of artificial heat, the cuttings shrink a little unless protected in some way. The plan I adopt is simply to place a square of glass over the cuttings; it is kept just above the cuttings, resting on the ends of the labels. This is sufficient to prevent evaporation, and retains the moisture about the cuttings, but not so much as to cause them to damp off. The secret of success, after the cuttings have formed roots is to keep them growing on without any check until flowering time. The plants are very slender at first, and may be potted into thumb-pots, or, at least, not larger than small 60's; they may still be kept in the forcing-house, but, if possible, on a shelf near the roof glass; this will promote stout, short-jointed growth from the first. In April the plants may be placed in a cold frame, and early in June they will do best out-of-doors, in an open position, where they may remain until the end of September. By that time the plants will be established in 6, 7, and 8-inch pots, according to their strength. The potting soil for these winter-flowering varieties should be, of good loam four parts, one part light fibrous peat, one part leaf-mould, and one part decayed stable manure, and as much coarse sand as may be necessary to keep the compost open.

We do not grow a large number of varieties, but such as we do grow have been well proven; they are mostly decided colours—rose, pink, crimson, scarlet, yellow, and white of course. The best white variety is the Queen (Abercrombie); La Belle (Blackley) flowers earlier and more profusely, and is a good white. Pale rose or pink colours are represented by Miss Jolliffe (Masters), and deep rose by Juliette (Turner), and Mrs. Llewellyn (Turner): they are both splendid varieties of good habit.

Worthington Smith is our best scarlet, though the plant cannot be recommended as of good habit. Nimrod is another scarlet that has done well. Mrs. Keen (Veitch) is the finest dark crimson. Mrs. McLaren (Fitch) is a perpetual flowering crimson bizarre, the flowers well marked, and of good form.

The different forms of Souvenir de la Malmaison should be grown, but they do not flower until the spring. *J. Douglas.*

# The Kitchen Garden.

## ROOTS AND TUBERS.

THESE are not nearly so well grown in most gardens as the Brassica tribe of plants. Of course it must be admitted that the soil in some districts is unsuited to the production of fine samples; however, on the other hand, when the soil is of a proper character to bring the best results (if properly prepared), it does not receive the necessary preparation to enable it to perfect clean, handsome samples. Why is this? I think it may be principally attributed to the presence of too many insects in the soil—soil overcharged with humus through being constantly manured with material which is not brought in to a thoroughly purified condition by the action of frost or other agencies. Growing roots simply for weight of crop, and growing clean, handsome samples, necessitates a different treatment of the soil. Fine straight samples of such roots as Parsnips and Carrots, free from scab and other blemishes, are much more welcome in the kitchen than forked and inferior samples.

Depth of tillage is most necessary for long roots, inasmuch as no direct impediment must exist in the soil to arrest or turn aside the main roots. Frost being one of the most active agencies to which we must look to bring sweetness and cleanliness to the soil, therefore those who do not make the best use of its power, by exposing alternately fresh surfaces of soil to its immediate action, neglect one of the most important operations towards bringing complete success. There are various ways of accomplishing this work: ridging may be resorted to, or the soil in the quarters chosen for next year's root crops may be dug over with the spade occasionally during the winter, exposing a fresh surface each time to the action of the weather. If one could thoroughly expose the top spit of soil to the action of frost before trenching, and subsequently be fortunate enough to experience a second spell in order to rectify the lower spit of soil then placed on the top and providing the soil in itself was of a proper character for roots, a perfect seed-bed would be the result. This being accomplished the application of dressings applied as correctives and cleansers of the soil would be of much less importance. I allude here to such cheap and effectual remedies as salt, soot, and lime. The two former are best, and most beneficial to light and medium soils; the latter two on heavier land. There yet remains time to apply these dressings to land to be cropped in spring with roots or tubers, and the work should not be driven off later than five or six weeks prior to sowing, &c.

Land that has occasionally received a dressing of artificial manure, such as nitrate of soda, sulphate of ammonia, or superphosphate of lime, does not contain so many insects as that which has year by year been enriched with applications of ordinary dung, and this should be taken into consideration when applying dressings. *G. H. Richards, Somerley.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, Dec 30 { Sale of Roses, Fruit Trees, Bulbs, &c., at Stevens' Rooms
THURSDAY, Dec 31 { Sale of Valuable Orchids, 500 Lilium auratum from Japan, at Stevens' Rooms
FRIDAY, January 1 { Sale of Imported Established and Semi-established Orchids, at Protheroe & Morris' Rooms
SATURDAY, January 2 { Sale of Hardy Plants and Bulbs, in variety, at Stevens' Rooms

THERE can be no question that, in spite of trade depression, and latterly of the disturbing element of a General Election, this has been a busy year for Horticulture. In isolated gardens in the country, perhaps, things have gone on much as usual, or, it may be, there has been rather a diminished than an enhanced activity. Establishments have had to be cut down and expenses curtailed to meet the fall in rents and the pressure of taxation. But in the great centres of population, and in London especially, the year now fast drawing to a close has been one of almost perpetual activity. Whether Horticulture in the abstract has been benefited by all this will be seen in the future. Those in the thick of a fight see little of the progress of the campaign. The weather, that foremost topic of interest, has been propitious to us. The winter was not severe, the spring was no worse than usual, summer and autumn were light, sunny, and hot; the present winter so far, at least in the South, has been favourable to outdoor work. A period of drought threatened to produce evil consequences, but, taking into consideration the fair average crops, the general absence of Potato blight and other pests, we have much to be thankful for—as, indeed, we always have—and little to grumble at, which may be disappointing to some people!

Turning to the proceedings of the Royal Horticultural Society as the representative Society, we find it has had a year of unending labour. Whether all this work will tend to rehabilitate the Society in public estimation we know not, but assuredly it ought to do so. The fortnightly shows were of more than average magnitude, owing to the concurrent Inventions Exhibition; and throughout the whole period many of our nurserymen kept up a continuous display, not only of shrubs that could be planted out once and for all, but of cut flowers, herbaceous plants, bulbous plants, Roses, &c., that required frequent renewal. It would seem as if the resources of the nurseries must have been severely taxed, but no evidence was forthcoming at South Kensington to that effect. In spite, however, of the magnitude of the shows there has been, we fancy, a marked falling off in the introduction of new and interesting plants (always excepting Orchids). It will be our duty, however, in the following numbers to give some details upon this subject, which may or may not confirm our present general impression.

The tendency to give special prominence to particular groups of plants at particular seasons has been accentuated. The Daffodil Conference of last year clearly did not exhaust the interest felt in the subject, for the Daffodil meeting of the present year, though less formally organised, excited almost as much attention as its predecessor, and evoked almost as much literature. Soon after this came the Orchid Congress, which—thanks to the energetic action of the Council, and in particular of Sir TREVOR LAWRENCE and Mr. LEE—was a most gratifying success. How far it served to fill the coffers of the Society and to attract new Fellows we do not know. Later on came the Pear Congress, rivalling the Apple Congress of 1883 in extent, and equally interesting to gardeners, but far from being so to the general public, to whom Pears seem to present little interest as compared to Apples—partly, no doubt, because a crop of Pears is a rarer phenomenon than one of Apples, which are pre-eminently the English fruit, and partly owing to unfavourable weather. These conferences or congresses on special subjects, as it seems to us, effect a great deal of what the special societies have hitherto failed to do. Special societies have confined themselves too much to mere exhibiting and prize offering the prizes, moreover, falling to the share of a very small number. But these congresses or conferences, or whatever they may be called, have been for the most part independent of the attractions of prize money, and yet the exhibitions connected with them have been larger and decidedly more generally interesting than those in which the prize system is exclusively adopted. Moreover, they have evoked an amount of interest on the part of the general public which ordinary flower shows, general or special, fail to do, and have stimulated the publication of information in character and in amount far beyond the ordinary flower show report. The exhibitions and congresses in Paris, Antwerp, and Edinburgh—all of which were successful—illustrate the same remark. For our own part, the Orchid Congress and the Pear Congress enabled us to produce a series of articles and an amount of information on the respective subjects such as has never before been gathered together in like compass, and which will furnish a quarry for future workers for years to come.

Before quitting the subject of societies we may, in passing, mention the "Gardeners' Benevolent." It will be remembered that great efforts were made last year to increase the Pension Fund, and with such success that the pensions now granted are £20 for men and £16 for women; and so successfully have the finances been managed that no fewer than twenty-five candidates are now to be placed on the list without the trouble or expense of election. This is most satisfactory, and ought to give great confidence to gardeners.

Horticultural literature has been as active as ever. In addition to the eight weekly publications now devoted to the subject the year has witnessed the commencement of the publication of two Cyclopædias of gardening—that of Messrs. CASSELL, entitled *Popular Gardening*, and that published by Mr. L. UPCOTT GILL, under the title of the *Illustrated Dictionary of Gardening*. In the former the articles are arranged in their natural sequence, in the latter they are disposed alphabetically. But the point to which we would specially allude is this—that both of them are in the main, and, barring occasional exceptions, up to the high-water mark of Horticulture. Too often we have to lament that writers on horticultural matters write as if the world had not moved on during the last fifty years, and not only give us nothing original but compile their matter from books which were excellent at the time of publication, but naturally left more or less behind by the progress of science.

It is, of course, impossible to notice all the publications of the year, but some may be mentioned as specially valuable. For comprehensiveness there is nothing to equal Professor SARGENT'S *Census Report on the Trees and Forests of North America*. This is a work which, from its magnitude, is only likely to be found in public libraries, but it is so full of information that our English arborists and foresters will find it to their interest to make themselves acquainted with it. The new edition of MASON'S *Burma* is also full of interest for cultivators. Of more strictly horticultural value are BAINES' *Greenhouse and Stove Plants*, the English edition of VILMORIN'S *Les Plantes Potagères*—a most useful book, only just published; and the new and greatly improved edition of the *Orchid Growers' Manual*, by Mr. B. S. WILLIAMS. The Report of the Edinburgh Forestry Exhibition, and the *Dictionnaire des Roses*, are both books which will not be suffered to remain on the top shelves of one's bookcase. Herr ANTOINE, of Vienna, proceeds with the publication of his magnificent work on Bromeliads. Baron VON MUELLER'S *Eucalyptographia*—a most valuable publication — has been brought to a close with its tenth decade. Mr. FITZGERALD continues his interesting labours on the *Orchids of Australia*, and has brought to light a large amount of hitherto unknown particulars. Mr. BROWN is issuing, at regular intervals, his *Forest Flora of South Australia*, concerning these interesting plants.

Of strictly botanical books this is not the place to speak, but as these words may fall under the notice of students we may mention the publication of Messrs. VINES and BOWERS' *Practical Course*—an excellent handbook for practical work in the laboratory.

For our own part we have endeavoured to keep our readers *au courant* with what is passing in the horticultural world, to furnish practical suggestions and directions on points of cultivation, and while constantly bearing in mind the daily practical requirements of our readers, to furnish them all with a store of permanent utility for future reference. Of this nature are the descriptions and figures of new and interesting plants; the monographs of particular genera; the articles on the structure and mode of life of the plant; on the insects injurious to plants; and on the diseases to which they are subject. These matters are treated of by the most competent authorities, and of their value we can form some idea by the frequency with which they are translated in foreign journals—an indication, it is said, of the verdict of posterity!—and by the use made of them by writers of standard books, as testified by their citations. We confidently look to our correspondents for help and suggestions to make our work more worthy their consideration, and more useful both for present needs and future reference.

The year has been signalised by the retirement of Sir JOSEPH HOOKER from the Directorate of Kew, and the appointment of Mr. DYER in his place. We have so recently commented on these matters, that there is no need to refer to them, save to express a most earnest wish that the standard of Kew may be kept up to its present high level, and that its opportunities for usefulness will increase with the progress of science. To this end not only must the commanders be men of first-rate capacity, but the subordinates must be picked men also.

The obituary list contains some names whose removal causes a great gap in gardening circles, such as those of CHARLES TURNER and JAMES CUTBUSH. It seems difficult to realise the existence of some departments of our work without these men, and they are not the only ones. CHATER, of Saffron Walden; BROWN, of Carnation notoriety; FORSYTH, and, quite lately, PROTHEROE, have been taken from us. The botanists have to lament the loss of BOISSIER, not before he had accomplished work which will for ever render him a benefactor to his brethren. The genial, spirited, and spirit-inspiring Dr. BULL, and the venerable, many-sided HENRY ELLACOMBE have gone to their rest, and ROEZL—who we should have imagined would have shared the fate of most botanical collectors—was suffered to meet his fate at home. And so in this, our last number for the year, published with Christmas preparations all around us—with thankfulness for the past and hope for the future—we thank our correspondents and friends for their help, and bespeak their aid in the year that is to come.

—— NEW PLANTS.—In our next number we shall follow our usual custom by giving a brief account of the principal new and interesting plants brought forward during the year 1885.




WROXTON ABBEY.

—— THE ASSISTANT DIRECTORSHIP AT KEW.—We understand that the post of Assistant Director of the Royal Gardens, Kew, has been offered to Mr. D. MORRIS, M.A., F.G.S., the Director of Public Gardens and Plantations, Jamaica. The appointment is in the gift of the First Lord of the Treasury.

—— THE LOQUAT (ERIOBOTRYA JAPONICA).—Some time since one of our correspondents made inquiries as to whether this plant had produced fruit in the open air in this country. We were not able to give an answer at the time, but we now notice that Mr. CHISHOLM, of Oxenhath Gardens, near Tunbridge, records in the *Journal of Horticulture* the production of a fruit against a wall of a house. The fruit was seen from an upper window by a lady—a happy accident, as otherwise it might not have been observed.

—— THE "GARDENERS' MAGAZINE."—The Christmas number of our contemporary has been issued, and is as full of brightness and variety as usual. The view of the Dripping Well in the new rockery at Kew may serve to induce those who have not paid a visit to this attractive spot to do so forthwith, for even in winter it is beautiful.

—— "LITTLE FOLKS."—We have received the January number of a magazine long known and admired by juvenile readers—*Little Folks*. It is profusely illustrated, and possesses the additional attraction of a coloured plate, and is published by Messrs. CASSELL & CO.

—— CIRRHOPETALUM WALLICHII.—The typical form of inflorescence in this genus is umbellate, but in the species under notice it is racemose or more or less spicate towards the top. It is deciduous, and flowers in this condition both in a wild state and under cultivation. Although it differs from the type in its elongated inflorescence, the great inequality existing between the lateral and upper sepals demonstrate its affinity with the other members of the genus. The flowering part of the raceme is pendulous, and the lateral sepals, having their edges more or less parallel and slightly cohering, are also drooping. They are pale yellow, attaining a length of 1 or 2 inches, in a wild state at least, giving the flower a very curious appearance. The figure or coloured plate given in WALLICH'S *Plantæ Asiaticæ*, 67, for this species, is altogether wrong, having an umbellate inflorescence and flowers stained at the base with blood-red. A piece grown on a block in the Orchid-house at Kew has been flowering for some time, and flowered there last year.

—— NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.—The monthly meeting of the members of the North of Scotland Horticultural Association was held in the Young Men's Christian Institute, Aberdeen, on the evening of the 18th inst. Mr. PETER HARPER, the President, in the chair. There was a good attendance. The "Lessons and Experiments of the Year" formed the subject of discussion. Several gentlemen took part in the debate, and Mr. D. EDWARDS, Sunnypark Nursery, read a paper on "Flowers," which commenced an interesting discussion. Some conversation took place as to the advisability of continuing the annual Chrysanthemum show under the auspices of the Society. It was questioned whether it would be advisable to continue the exhibition, seeing that the last two had been unsuccessful from a financial point of view. Mr. REID, the Secretary, explained that the exhibition was connected with the Society nominally only, the Society guaranteeing to give £5 of a subscription in case of a deficiency. It was eventually agreed to continue the show under the auspices of the Society. Votes of thanks to the speakers concluded the meeting, and the members then had an opportunity of inspecting the fine collection of plants that adorned the exhibition-table.

—— PARAMERIA BALSAM.—The *Pharmaceutical Journal* draws attention to an article in the *Archiv der Pharmacie* for November on the structure of the root of Parameria vulneraria, which is used by the natives of the Philippine Islands, as well as by the residents there, to furnish a kind of balsam that possesses remarkable healing properties. This, it is said, is known by the name of Cebú, or Tagulaway Balsam, and is prepared by boiling the bark of the roots, twigs, and leaves of the plant in Cocoa-nut oil, when a yellowish-white oily liquid is formed, having a peculiar odour. From an examination of the plant it was found to contain 8.5 per cent. of caoutchouc in its tissues, and 3 per cent. resin soluble in alcohol, and to these constituents its value appears to be due. Dr. ZIPPERER, the author of the paper, states that during two years' residence in the Philippines he had seen the balsam used by European doctors, as well as by the natives, with great success in various skin diseases and for healing wounds. It appears to promote an unusually rapid cicatrization. The plant is a climber belonging to the Apocynaceæ, and growing in the mountainous declivities of the Island of Cebú, whence it is chiefly obtained. Only two other species of Parameria are known, namely, P. glandulifera, BENTH.; and P. philippensis, BENTH.; the former of which has been referred to as a caoutchouc yielding plant in the Kew report for 1881.

—— TREE PLANTING AT FINCHLEY.—In reference to the advertisement which appeared in the *Gardeners' Chronicle* of the 28th ult., we are requested to state that the tender of Messrs. RICHARD SMITH & CO., of Worcester, has been accepted.

—— ST. NEOT'S HORTICULTURAL SOCIETY.—The report and balance-sheet presented at the recent annual general meeting of the members of this Society is most satisfactory, for it shows that the balance in hand at the close of 1884, amounting to over £18, has, with the close of this season's operations, grown to the sum of over £44, which is a satisfactory state of things. A summer show will be held on Bank Holiday in August.

—— CRINUM ANGUSTUM.—A considerable number of species of Crinum have flowered from time to time in the Palm-house at Kew, but none more conspicuous than this one. It belongs to the section Platyaster, and was described in BAKER'S synopsis of the genus in the *Gardeners' Chronicle*, 1881, xvi., p. 180. This section is characterised by a straight tube, and lanceolate spreading or ascending segments. The tube in this instance is 4 to 5 inches long, and the segments of the perianth about 6 inches. Externally, before expansion, both tube and lamina are of a deep crimson-red, but internally the segments are almost white. The inflorescence contains from twenty to thirty of these huge flowers, which open successionally, and exhale a powerful but not disagreeable odour. The bulb is elongated or drawn out into a long, thick neck. It is a native of Mauritius, the Seychelles, and some of the East Indian islands, and requires a stove temperature. There is a figure of the species in the *Botanical Magazine*, t. 2397.

—— XANTHOSOMA ROBUSTUM.—This Mexican Aroid well deserves its specific name, as it probably produces the largest leaves of any in cultivation. The petioles attain a length of 6 feet or more, and are very thick, but by no means proportionally strong, owing to numerous large internal cavities or air spaces. The huge cordate lamina also lacks that firmness of texture common to many of the Alocasias and Anthuriums. In this respect it agrees more with the well-known Colocasia esculenta. Such a subject would have little room to develope if cultivated in a pot, but if planted out, as at Kew in the Palm-house, where it is exposed to light, its bold and telling appearance may be more easily imagined than described. It is planted near that noble foliaged Palm, Stevensonia grandifolia, sometimes known as Phœnicophorium, and where visitors can walk underneath the leaves. The flower-spathe has a green tube and a creamy yellow lamina. It has flowered previous to this, in 1877, probably for the first time.

—— RHODOSTACHYS ANDINA.—This is a very striking Chilian Bromeliad, of which a coloured figure is given in the last number of the *Revue Horticole*. The long, linear, recurved, strongly-toothed leaves are silvery-white on the under-surface. The tufts surround a dense head of rose-coloured flowers of great beauty. It is suitable for greenhouse cultivation.

—— HÆMANTHUS BAURII.—As a rule, the flowers of this genus are some shade of red, and the generic name suggests as much. This species, however, is an exception to the general rule. It is a new species, as yet unrecorded in gardening books, and dried specimens were sent to this country in 1874 from South Africa by the Rev. R. BAUR, after whom it is named. It belongs to the two-leaved section, and is allied to H. rotundifolius, but is easily distinguished by its broader, blunter leaves and pure white flowers and bracts, while the latter has a deep red or scarlet inflorescence. The inflorescence resembles that of H. pubescens, or the variety known as H. albiflos, but the leaves of the latter are strap-shaped. The leaves of H. Baurii in good-sized specimens would be 4 to 5½ inches long and 6 to 7½ inches broad. The peduncle emerges from between the leaves, which are persistent during the period of flowering, and is from 1 to 1½ inch long. The bright yellow anthers contrast well with the purity of the other floral organs. A bulb has been flowering for some weeks in the Cape-house at Kew.

—— PORTSMOUTH CHRYSANTHEMUM SOCIETY.—On Wednesday, the 16th inst., a dinner was given at the Royal Albany Hotel, Portsmouth, to commemorate the occasion of the holding of the first show for Chrysanthemums in that town. The chair was taken by Mr. F. POWER, the Secretary, Mr. G. ELLIS being Vice-Chairman. Amongt those present were the present Mayor and the ex-Mayor of Portsmouth, as well as most of the members of the Town Council and representatives of the principal trades of the town and neighbourhood. Much satisfaction was expressed by the speakers at the amount of success which had attended the Society's first venture, and with the love of flowers shown by the townspeople who had flocked to the show in great numbers. Next year it was proposed to add a challenge cup of the value of £25 to be competed for in the class for thirty-six cut blooms.

—— PRIMULA PROLIFERA.—This is a handsome Primrose, with bullate leaves, and a tall central flower-stalk, bearing two to three tiers of yellow flowers, one above another. It is a native o the Khasia Hills, and is figured in the *Gartenflora*, t. 1204.

—— CAPETOWN BOTANIC GARDENS.—We hear that retail orders can no longer be attended to at the Botanic Gardens, Capetown. As long as the opportunity lasted it has been of great use to the lovers of these beautiful things. The reason for this alteration is purely financial. The Director writes thus:—"It is a great pity we are condemned to mere nursery work for a living—but so it is. As soon as we have anything good we must sell it. Our expenses are £1400, and the Government subvention is £500." Mr. EWBANK tells us that he has been more than pleased with what he has got from the Capetown Botanical Gardens, and we have had similar reports from other correspondents. Many things have come into his hands which are not in the trade in this country at all. In the Isle of Wight he finds that a large proportion of Cape bulbs will do perfectly well in the open ground all the year round. All he does for them is to put a covering of "Willesden paper" stretched on a frame over their heads for some eight or ten weeks in the winter. This answers perfectly, as it keeps the bulbs dark and dry, and so retards their appearance above-ground till all danger from frost is over. In the scorching days of summer it is well to give Cape bulbs a mulching of cocoa-nut fibre; this tends to preserve the foliage.

—— THE TEA SHRUB, FICUS BARBATA, &C., IN SCOTLAND.—From the Edinburgh Botanic Garden, through the medium of Messrs. OWEN, we have received a good specimen of the Tea plant, which has been grown out-of-doors in that establishment for more than fifty years. Ficus barbata is used for covering walls, as F. repens. The specimen is remarkable for the small ovoid pointed fruit, which we do not remember to have previously seen. Veronica lycopodioides proves hardy in Edinburgh, and is one of a group of dwarf shrubs that look more like little Conifers or Lycopods than Veronicas. Mr. WARE, of Tottenham, cultivates several varieties of this character, and showed a group of them at one of the meetings of the Royal Horticultural Society. A seedling Nepenthes, between Rafflesiana and Chelsoni ×, has much of the character of Rafflesiana. The ground colour of the pitcher is greenish thinly speckled with purplish blotches.

—— GARDENING APPOINTMENT.—Mr. W. SWAN, late of Oakley Gardens, Fallowfield, Manchester, has been appointed as Head Gardener to E. G. WRIGLEY, Esq., Howick House, Preston, Lancashire.

## WROXTON ABBEY.

THIS fine old place (see Supplementary Sheet), the Oxfordshire seat of Lord North, lies north-west of the town of Banbury, from which it is some 3 miles distant. It dates back from a remote period, as here a Priory was founded by one Michael Belet about the close of the twelfth or beginning of the thirteenth century. At the dissolution of the religious houses Wroxton shared the fate of most other institutions of a like character—a fate very different from that which the founders, when bestowing their wealth upon them, intended that they should come to. The Priory appears, then, to have come into the hands of Sir Thomas Pope, who gave it to Trinity College, Oxford, of which he was the founder. After that it was held by the Guildford family, through whom it descended to its present owner, through his mother, the Baroness North, second daughter of the third Earl of Guildford.

The original Priory is understood to have been partly burnt—the present noble building was erected by Sir William Pope, and completed in 1661. Some portions of the original pile are still existent, and form part of the present mansion, notably part of the old chapel, a window of which, in good preservation, is an object of particular interest. Wroxton has not been wanting in honours from the presence of royalty; James I. was here, and also Charles I., with his Queen, whilst in later times the two sons of George III., who afterwards sat on the throne—George, Prince of Wales, and William, Duke of Clarence—both visited the place. An obelisk standing in a commanding position in the grounds commemorates the first visit made by the elder Prince, and which he twice subsequently repeated. The mansion is built of stone, is very substantial, and, as will be seen by the accompanying view of the entrance front, has architectural merits of a high order. Not its least attractive feature is the beautiful mantle of luxuriant Ivy with which the walls are clothed. This grand old plant never fails to add by its presence to the appearance of a dwelling, be it palace or cottage, yet it is never so happily associated as when adorning an old building.

The road to the Abbey leads from the old-fashioned village of Wroxton, the numerous houses of which, with their Heather-thatched gables standing here and there in picturesque irregularity, have an old-world air about them that carries the imagination back to times remote, when they whose hands first brought the place into existence moved about the then silent paths with little of the whirl and turmoil that has since come upon the world to disturb them, with less to think about, and more time to weigh their thoughts. If their lot was cast in an age whilst yet the world was rude, and had less surface polish about it, still if men had then seemingly less to live for, if they had fewer pleasures, they had fewer pains. The gain is not so much on one side as it might seem to be. But this is digressing. Leaving the village we pass through the handsome entrance gates, where there is a lodge in keeping with the character of the place; the road here descends, leading through a grove of old trees, consisting of lofty Beech, Sycamore, Chestnut, and the like; following on further there are a number of Conifers, that here, in the deep soil of the sheltered valley, grow at a rate which, under less favourable conditions, would not be possible. They consist of Wellingtonias, Cryptomeria japonica, Taxodium sempervirens, Pinus Cembra, P. excelsa, P. austriaca, P. Strobus, P. Laricio, and others, in association with Lebanon Cedars. Leaving these, the road, still descending, leads to the entrance front, which is to the north-west. Here is a remarkable example of an Ivy-clad tree, an old Ash; its dense mantle of green clothes some 50 feet of its tall trunk. The position the mansion occupies is near the head of a valley, completely sheltered by high densely wooded ridges. On the south-east or garden front there is a wide terrace on which through the summer are stood a number of big Orange trees. From this point the valley gradually widens and stretches out with a gentle slope for a considerable distance, thus giving some 12 or 15 acres of lawn, composed of the greenest of green turf. To the left, looking from from the building, are several fine Cedars, the glaucous spreading branches of which give an agreeable contrast to the erect growth of the tall deciduous trees which form a background to them. On the slope at the opposite side of the valley are a number of very large old Elms, and other native trees whose massive trunks and vigorous growth give promise that to the long ages of sentinel duty they have here done many more are likely to be added. In company with these are examples of Araucaria imbricata, Taxodium sempervirens, and Cryptomeria japonica, the two latter about 40 feet high, and growing at a rate such as never seen unless where the soil and situation are exceptionally favourable to them. At the lower end of the lawn are numbers of big old trees, amongst which is a Larch that has reached unusual size; an Ash not far from it girths 18 feet at 4 feet from the ground; several Elms about the same size; a Beech with its lower branches lying on the ground has a spread of some 100 feet, whilst it measures 15 feet round the trunk. Several old trees hereabouts are overgrown with Ivy that has attained a size such as rarely met with. Amongst these is an immense Holly, which, including the stems of the Ivy that clinging tightly to its trunk, measures over 13 feet round. The Ivy stems on these trees have grown to the thickness of ordinary ship cables, whilst the dense mass of green foliage above has extended until it has formed huge columns 60 feet high and almost as much in diameter as the walls of a windmill. Neither does it seem to have the injurious effect on the growth of the trees it clings to that it has the bad reputation for. No one acquainted with matters arboricultural is likely to suppose that the presence of Ivy can benefit a tree, but the reverse; yet I am under the impression that it does not injure by strangulation in the way generally supposed, but simply by its roots robbing the tree of the food and water that should, and in its absence would, be available for the tree. Doubtless the extremities of the tree roots extend much further than those of the Ivy, although the latter stretch out a deal further than many suppose them to, and lying as they do near the surface they suck up every particle of moisture within their reach to such an extent that, in the many cases that I have examined the soil beneath, I have invariably found it as dry as tinder—a condition that in time induces an unhealthy state. In the valley where these Ivy-draped trees grow, at distances far enough apart, and in a position where their roots can find the requisite moisture, they have suffered little, through the simple fact, that the land contains enough of the elements of fertility necessary to sustain this dual kind of occupancy: hence their healthy condition.

(To be continued.)

## Notices of Books.

**The Vegetable Garden: *Illustrations, Descriptions, and Culture of the Garden Vegetables of Cool and Temperate Climates.*** By MM. Vilmorin-Andrieux. English edition, published under the direction of W. Robinson, Editor of the *Garden*. London: John Murray.

The original French edition of *Les Plantes Potagères* is the work of an expert, whose knowledge of his subject is probably as large or larger than that of any other individual that could be named—one, moreover, who is conscientious to a high degree, who spares no pains to acquire accurate information from all or any sources. The consequence is that he has produced a book of first-rate value for its immediate purpose, and one which will be consulted not only by practical gardeners but by botanists and men of science desirous of obtaining trustworthy information on the history and range of variation of cultivated plants. As we stated our opinion of the work on its first appearance, it will suffice now to announce the issue of an English edition. This will be so great a boon to gardeners that we may say without hesitation that no garden library can afford to be without it. The work has been adapted for English readers, and cultural details added by various persons, of whom the initials are sometimes, but not always, given, without other indication of their identity being furnished. The interpolations are clearly shown by a difference in the arrangement of the type, and it would have been more just, alike to reader and to writer, to have mentioned the names of those responsible for the cultural details given.

The alphabetical arrangement is adopted, as a curious result of which we have Broccoli and Cauliflower separated by some eighty pages, and both separated from Cabbage; Beetroot and Leafbeet are divorced by 200 pages—Borage is sandwiched in between Beet and Broccoli. The desire to give English names is also curious. Who ever heard of the "Unicorn plant"? Certainly Martynia is not grown in this country as an esculent, but it is common enough as an ornamental annual. We remember some few years ago to have seen beds of it in remarkably good condition in the Zoological Gardens, which leads us to trace some significance in the name of Unicorn plant. Other zoological names are "caterpillars" and "snails," delicacies not often seen on English tables, and which we do not care to import. Any inconvenience that might ensue from this method of arrangement and nomenclature is, however, amply compensated for by the excellent and full index provided. French weights and measures have been retained, from the difficulty of expressing their equivalents unless by means of troublesome fractions. May this help on the speedy and utter disestablishment of our maddening system of weights and measures.

The editor has strong views as to the superiority of French over English vegetables. Had he confined his partiality to French cooks we could have more fully agreed with him. Any one who will compare the quality of general market produce of the two countries and disregard exceptions on each side will, we think, come to the conclusion that there is no very great difference between the two countries; in some cases—Potatos, for instance—we are infinitely superior. The present volume will, we hope, be as serviceable in stimulating among us the culture of the delicious Cardoons, Aubergines, Celeriac, Finocchio, and other vegetables scarcely known in this country, as it will in teaching our neighbours that Rhubarb is nice, Celery excellent, and Seakale not to be despised. If the editor could persuade them that the combination of uncooked vegetable with hot meats, as in the inevitable *poulet et salade*, was incongruous, many a traveller, wearied with the monotony of Watercress and chicken, would thank him. But this is wandering into the culinary department, where, although we have no business, we may yet repeat our acknowledgments of the general marked superiority of the French practitioners over our own.

**Indigenous Flowers of the Hawaiian Islands.** By Mrs. Frances Sinclair. (Sampson Low, Marston, Searle & Rivington.)

**Orchids, the Royal Family of Plants, with Illustrations from Nature.** By Harriet Stewart Miner. (John Stark, 12, Busby Place, Camden Town.)

Here are two books which each in its degree illustrates that unhappy facility of the pencil we have so often reason to deplore. Here are time, labour, skill, talent—money to a large extent—thrown away. Those blessed with artistic talents need unfortunately to be reminded that skill without knowledge is little worth. The two books before us, that on Orchids especially, are little more than drawing-room table books. A more degrading fate for works which have cost much labour can hardly be conceived, unless it is to be consigned to the fire-screen.

The flora of the Hawaiian Islands, though fairly known to a few professed botanists, is so little known to the rank and file, and so almost unknown to horticulturists, that Mrs. Sinclair's volume has much interest. The illustrations are faithful as far as they go, but they are "scrappy," give little idea of the "habit" of the plant, of the way in which it grows, nor of the botanical details of the flower. Again, it seems a waste of labour to figure common tropical trees and weeds by no means peculiar to the Hawaiian Islands, and some, indeed, not really native to them. This is the more to be regretted, as the artist has evidently quite unusual skill in draughtsmanship. Witness the perspective of the leaves in plate 4—Smilax sandwicensis. The text contains so many interesting details, that it is a matter for great regret that so observant and appreciative an artist should have lacked the botanical training requisite to give value to her labours. It is very desirable to preserve and fix the native names, but surely it would have been better to give them a secondary place in a book intended for European use.

It would be ungracious and ungrateful, however, not to express our thanks to the artist for the publication, among many better known plants, of such specialties as the Mao, Gossypium tomentosum (which does not, however, yield any of the cotton of commerce), the Lycium sandwicense, the very curious Geranium cuneatum, and Hillebrandia sandwicensis, plants of very great botanical interest, or various reasons not alluded to by Mrs. Sinclair, but which it

would have added greatly to the interest of her volume to have mentioned.

The Orchid book is a less favourable specimen than the work above mentioned, and its plates will not be considered by Orchid lovers as adequate representations. Mrs. Miner has not been fortunate in her selection of good varieties.

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**The Praise of Gardens**: *a Prose Cento*. Collected and in part Englished by Albert F. Sieveking. Elliot Stock.

Not unnaturally perhaps our first thought on opening this dainty volume was of George III., and his wonder that an "apology" was needed in the case of the Holy Scriptures. Praise of gardens in the ordinary sense of the word is assuredly superfluous, though in another sense there is no one more sensible to flattery, delicate or gross, than your gardener, gentle or simple. The present volume is, it would seem, specially intended for arm-chair gardeners. "It is a natural consequence," says the compiler, quoting from an unnamed source, "that those who cannot taste the actual fruition of a garden should take the greater delight in reading about one." The book before us will, however, delight all classes of garden lovers, workers, lookers on, or sedentary students. It will, of course, appeal to each in a somewhat different way, and the success of the compiler will, we fancy, be shown by the manner in which, if we mistake not, he will be found to have catered for all tastes. He has done less perhaps for the plant lover proper than for other devotees of the garden, but we shall pick no quarrel with him on that score. The work is an anthology, a series of extracts from writers on gardens and gardening from the time of an unknown Egyptian who wrote some 1300 years before Christ down to the times of the writer of *My Summer in a Garden*. The collection is, as might be supposed, most varied and most interesting as an illustration of the history of gardening, and the course of fashion and taste. The temptation to systematise and arrange these extracts so as to form a history in chronological sequence is almost irresistible, but it would take more time and space than we could afford, and, above all, it would spoil the reader's pleasure.

Not only have we indications of the fluctuations of taste, but delightful side views of the characters of men. Here is Sir Joshua interceding for a clipt hedge at Beaconsfield and loving "to see the footsteps of man about a human habitation"—no advocate for the abolition of terrace gardens near to the house. Old Sam Johnson, the friend of Reynolds and Burke, was of opinion "that was the best garden which produced most roots and fruit, and that water was most to be prized which contained most fish;" and, again, "after one has gathered the Apples in the orchard one wishes them well baked and removed to a London eating-house for enjoyment." He sneers at Shenstone, and is a Philistine of Philistines in matters of landscape gardening. Hear what the old boor says:—"Whether to plant a walk in undulating curves and to place a bench at every turn where there is an object to catch the view—to make water run where it will be heard, and to stagnate where it will be seen—to leave intervals where the eye will be pleased, and to thicken the plantation where there is something to be hidden—demand any great power of the mind, I will not inquire. Perhaps a surly and sullen spectator may think such performances rather the sport than the business of human reason. But it must at least be confessed that to embellish the form of Nature is an innocent amusement, and some praise must be allowed by the most scrupulous observer to him who does best what multitudes are contending to do well." This is a fine piece of English prose writing; but if the surly and sullen spectator derive no other inspiration than this from the sight of a well-ordered garden, he had better "take a walk down Fleet Street." Macaulay was insensible to the charms of a garden, and Johnson and Thackeray cared little for them. Pope and Southey and Ruskin and Morris know better what a garden is capable of—what to do, and what to avoid. The true art is how to shun such artificiality as prevailed in the time of Pliny the Younger, which was revived at the Renaissance, and was rendered ludicrous less than a quarter of a century ago, in the days of coloured stones and bits of glass, and to eschew the absurdity of bringing the forest and the alpine meadow immediately in contact with the Hall door and the portico, and to study in all things the beauty of appropriateness. How seeming easy this may be—in practice it is very generally ignored. For proof look into almost any garden anywhere, or amuse and instruct yourself by the perusal of this volume.

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**The Golden Gate and Silver Steps, with Bits of Tinsel Round About.** By Shirley Hibberd. (Allen.)

This is a "Christmassy" book—that is to say, that it is above and beyond criticism. It is not to be gauged by any artificial canons of art, literature, or science. The author and his readers have quite enough to do with such matters on most of the days of the year. Let the readers for once in a way dip—dig deep if they like—into this charming medley of sound sense and nonsense. They will laugh at the humour, be touched with the pathos, and be all the better for the high tone which pervades the book. Some of the notes, such as "Water-cresses," and the Cotton yarn are old friends, and none the less welcome on that account. Others are new—at least, to us. The fragments are unequal—of course they are—however, no criticism can be allowed at Christmas. We may, however, assure the author that Mr. Joseph Miller, the jester, was not buried in Chiswick Churchyard, but in the graveyard of St. Clement's Church, in the Strand, the site now occupied by King's College Hospital.

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**The Live Stock Journal and Agricultural Gazette Almanac for 1886.** (Vinton & Co.)

This is as full of meat as an egg, and will be found a most acceptable Christmas card to send to agricultural cousins. In addition to the usual calendarial matter there are no fewer than twenty-six original essays on various points interesting to farmers, graziers, and cattle breeders.

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## TREES AND SHRUBS.

THE TULIP TREE (LIRIODENDRON TULIPIFERA).—It is a pity that specimens of this splendid North American flowering tree are so few. It always arrests attention whenever a well-grown specimen is seen, for no tree has a more elegant appearance as a park or garden tree. Its habit somewhat resembles the noble Platanus occidentalis, yet the Tulip tree possesses charms entirely its own, because it is not at all unusual to see it during the month of July covered with its solitary terminal, variegated, six-petalled, fragrant flowers, which, together with its singularly distinct foliage (the leaves being three-lobed, with terminal lobe cut short), should command the greatest admiration. A fine tree is flourishing on Mr. A. F. Lindemann's lawn at Sidholme, Sidmouth, Devon. It is situated in an open yet sheltered situation within a short distance of the front of the mansion, and reaches a height of at least 60 feet. Its trunk, at 3 feet from the ground, is 9½ feet in circumference, and the spread of its branches is some 70 to 80 feet wide. *W. M.*

SALISBURIA ADIANTIFOLIA

(the Maidenhair or Ginkgo tree).—I have explored most of the gardens throughout the West of England with the view of finding a larger specimen than the fine example in the famous rock garden at Messrs. Lucombe, Pince & Co.'s establishment at Exeter of this deciduous and scarce coniferous tree, and I have not succeeded in searching out even one worthy of being compared with it. Doubtless it would prove interesting to some of your readers, as well as myself, to ascertain through your pages whether there are any in Britain of greater size. The dimensions are:—Girth of trunk at 3 feet from the ground, 48 inches; girth at base, 56 inches; and height, as given by Kay's dendrometer, 39 feet 2 inches. Its erect trunk is free from branches to a height of 14 feet, and after that gives off branchlets and limbs much after the style of the Larch tree (Larix europæa), so that the stem or body may be said to taper from the base—in fact the topmost growth or leader is whip-like, and forms the pinnacle of a conical-headed tree. *W. Napper.* [Is it male or female variety? ED.]

BERRY-BERRY PLANTS.

IN his article on berry-bearing shrubs Mr. Webster mentions Skimmia japonica. I presume he means the hermaphrodite form usually sold under this name. The dicecious female form sold as Skimmia oblata is, however, far superior, both in size and colour of berries, as well as in the profusion in which they are produced, if a male plant, generally sold as S. fragrans, be planted near it. The best way is to plant the female first, and allow it to grow without fertilising for a few years, as it makes a larger and finer bush when it does not produce berries, and it is well worth growing for its very fragrant flowers. I enclose specimens of both forms from my garden at Colwyn Bay. I am surprised at Mr. Webster's statement that the birds soon devour the berries of S. japonica. With me, on the contrary, they do not touch the berries, which remain on the bush till far into the following summer. This is the more remarkable, as my garden is only about 12 miles from Mr. Webster's, and on the same coast. It is not for want of birds, as a C. pyracantha, growing a few yards from the Skimmias, is already entirely stripped of its berries—not one is left. Is it possible that the birds with me are not educated yet to like the Skimmia? *Alfred Walker.*

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## HOME CORRESPONDENCE.

Hollies.—The text-books give the Holly as a monœcious plant, bearing flowers of both sexes, and each plant consequently sufficient for its own fertility. In these gardens, as elsewhere, there are fine Holly trees standing side by side fifty or sixty years old, and, to all appearance, perfectly healthy and vigorous. The one is habitually fertile, and is now crowded with berries, the other never has a berry. Can you or any of your correspondents oblige me by an explanation of this sterility, which is noticeable in every plantation? *R. J. H.* [The Holly is polygamous. Some of the flowers are male, others female, others hermaphrodite. Sometimes one kind of flower only is produced on a tree—sometimes all three: again, they vary from season to season. ED.]

Bonâ fide Exhibits.—May I ask the committee of the National Chrysanthemum Society, through your columns, whether they consider it fair and honourable to allow any exhibitor for certificates to show specimens of cut flowers unless they are vouched for as having been grown by the exhibitor, and not obtained from extraneous sources? Many are under the impression that certificates have been awarded for blooms not grown by the exhibitor. Should the committee not deem the above condition necessary I cannot help thinking it would be fairer to all that each exhibitor should state whether the blooms are grown under his own charge or not. *W. G.*

Rhododendrons for Forcing.—Referring to the request of a Dutch florist on p. 794 of the last issue of the *Gardeners' Chronicle*, I presume he does not mean the greenhouse varieties of the R. javanicum type. What I would desire to commend to his notice is the group of sweet-scented types raised by Messrs. Isaac Davies & Son, Brook Lane Nursery, Ormskirk. They were obtained from R. multiflorum × R. Edgworthi; they are bushy growing, very free blooming, and easy of cultivation, in addition they are sweet-scented. The varieties are Countess of Derby, Mrs. James Shawe, Lady Skelmersdale, Countess of Sefton, and Duchess of Sutherland—all white, one or two of them tinted with rose, but distinct in colour. There are three other hybrids of a very different character, viz., R. Daviesii, R. floribundum, and R. Pixy Queen, that are excellent varieties for forcing purposes. The first-named group, with their fine flowers, do not require a great deal of fire-heat, but the application of this depends upon the time when it is desired the plants should be in bloom. *R. D.*

Heritiera macrophylla.—I forward you a branch of this plant, mentioned lately in the *Gardeners' Chronicle*, with some young fruits on it. Our plant is 4 to 5 metres high, and seems to be in a very healthy and vigorous state. It was repotted in the spring of 1884. It then lost its leaves. The new leaves appeared quickly; they showed themselves at first with a fine pale pinkish-yellow or *café au lait* colour, and white underneath; now they are of a bright green, and silvery on the lower side. In summer the flowers have been abundantly produced. I recommended that the flowers should be shaken, in order to facilitate fertilisation, and almost every day the plant has been shaken to disperse the pollen. In the specimens preserved in the herbarium the plant flowered in 1877. These dried specimens show a

number of very young leaves, but not on the flowering branches, where the leaves are quite green. It would be curious to know whether the new leaves do, as they have done twice at the Museum, precede the flowering. In the herbarium the specimens grown were sent from the Calcutta Botanic Garden by Wallich, as a new and remarkable plant. Is the plant I sent you really and truly Heritiera macrophylla? *Maxime Cornu, Jardin des Plantes, Paris.* [From Kew we have received even finer specimens, with clusters of ripe fruit, each about the size of a small Walnut. The fruit is hard and woody, slightly tubercled, and with a broad strap-shaped wing attached. We do not observe the young leaves as described by Professor Cornu in the Paris specimen, or those from Oxford or from Kew. ED.]

**The Bracts Falling from Poinsettias.**—May not the heavy but smoky fogs we have had of late, especially during the prevalence of those cold easterly winds, have had something to do with the bracts falling off, when we remember how our glass structures become coated with smutty smoke, and thus clear light is at a disadvantage? A few years ago many of our trade and private collections of winter flowering Orchids in the suburbs suffered very much by the falling of the buds, and to the above cause was ascribed the evil. *J. F. M.*

**Nerine Meadowbankii.**—Mr. Baker (see p. 779) is not quite accurate in placing Meadowbankii under his divisional code with sarniensis as the type—indeed I am in doubt whether he has seen this form (Meadowbankii), which is in limited hands. If it is allied at all to Cerroxa it is in a cousin-german way. Its history and parentage is this:—Some dozen years ago I had a fine seminal form of N. Fothergilli, and I had also a good flowering pot-ful of N. sarniensis. I desired to effect a cross between the two, for the purpose, on the one hand, of transfusing the fine soft shade of sarniensis with the brilliant vermilion-scarlet colouring of Fothergilli; and on the other hand of securing a free-flowering form of the sarniensis type. Growers of Nerines know how shy the latter form is under greenhouse cultivation, and how free and facile dealt with, from a flowering point of view, is Fothergilli. I effected the cross successfully, and the result was the form now under discussion. It turned out exactly as I wanted. I obtained the soft orange-scarlet colour without affecting appreciably very much the habit of the female parent, and I also secured—what is very desirable in all horticultural crossing—freeness of flowering. True, the constitution is not quite so vigorous, and the leaves are a little more strap-shaped than its female parent, but it is so unlike the pollen parent in everything else but colour, and the colour is much more pronounced and eye-pleasing in the form under question, that if I were consulted in the final diagnosis I would ask Mr. Baker to transfer it to his curvifolia division as a distinct variety, from a horticultural point of view, and one, too, the longer it becomes known the better it will be appreciated. *James Anderson.*

**Taxed *v.* Untaxed Trading.**—Our attention has only just been called to the remarks of Mr. James Anderson, of Meadowbank, Lanarkshire, under the above heading, in your issue of the 5th inst. It may, we think, be satisfactory to Mr. Anderson and other of your readers to know that the subject of "Untaxed Trading" was fully and carefully considered in our report on the nursery trade to the "Royal Commission on the Depression of Trade and Industry." We were, however, unable to give definite information on two points—1, the number of landowners, gentry, and noblemen, sending their spare produce, or growing especially for market; 2, the value of the produce sent into market by private growers. Any trustworthy information on these points we shall be glad to receive. *Smith & Larke, Ashford, Middlesex.*

**Stephanotis Fruit.**—A correspondent sends us the fruit, of which we give an illustration (fig. 188). As the flowers require the aid of insects in order to "set," it is comparatively rarely that we meet with the fruit. In the flower there are two ovaries, but in the case before us only one has set, the other has withered away. The fruit in question is thick and fleshy, the constituent cells containing nourishment for the seeds; these are flattened oblong bodies, in shape something like Melon seeds, but broader, and each provided with a long tuft of silky white hairs, by means of which the seed is dispersed by the wind. In the unripe fruit before us, however, the tuft of silky hairs detaches itself so readily from the seed that it would not be of any service in this way. Perhaps as the seed ripens the attachment becomes firmer.



FIG. 187.—HURSLEY VICARAGE. (SEE P. 807.)

**Luculia gratissima.**—At Messrs. Lucombe, Pince & Co.'s Camellia-house, at Exeter, a specimen is just now loaded with about 150 of its terminal cymes of fragrant flowers, and covers a wall some 14 feet in height by 12 feet. This fine plant is one of the finest examples in the country. *W. Napper.*

—— This plant is largely grown in an intermediate temperature at Comely Bank Nurseries, near Edinbugh; a house about 40 feet long is filled with large plants of it, which flower profusely in mid-winter. There is also a large stock of young plants. The foliage is fine, many of the leaves being 6 or 8 inches long. The large bunches of pale pink blossoms are singularly beautiful, and are strongly scented. If not exposed to the air, Mr. Fraser says, the dried flowers retain their scent for at least a year. L. Pinceana flowers less freely

than L. gratissima. *C. M. Owen.* [A stout corymb of this beautiful flower, together with some unusually fine foliage, accompanied this communication. Ed.]

**Daffodil Notes.**—What is the average rate of increase in Daffodils? So far as I am able to judge by my own experience as an amateur, the greatest rate of increase is threefold in three years. Thus one bulb would become nine in six years, and twenty-seven in nine years, and so on. At this rate it would take about thirty-two years from the birth of a seedling until the stock of it had multiplied, under the most favourable conditions, to 20,000. The result would be nearly the same if we took the rate of increase by doubling every two years, as it would take about thirty-three years for a seedling to increase to 20,000. I believe, however, that this would be an extreme rate in ordinary hands. The professional bulb grower could possibly do far more than this, but I am considering ordinary garden work. It would not be safe to reckon upon the taking up and replanting of every bulb each fourth year, so as to get the greatest result. I should say, therefore, that if we take for the rate of increase a doubling every third year it would be a fair average basis on a large scale, and at this rate it would take forty-seven years from the seedling to the stock of 20,000 bulbs. Now, if we apply these calculations to the case of the Sir Watkin Daffodil we shall find some curious considerations to arise out of it. Mr. Barr, Mr. Burbidge, and others, have stated their suspicion that Mr. Pickstone's Daffodil probably escaped from Mr. Leeds' garden at Longford Bridge. Now, we know that there was a stock of it at Maesmynan of at least 20,000 large bulbs in 1883, when it was sold to Messrs. Dickson, and we can say at once that the origin of the plant must have been remote. Mr. Pickstone stated to me at that time (see *Gardeners' Chronicle*, April 26, 1884, p. 551) that he found this Daffodil in Merionethshire sixteen years before. By the quickest rate of increase, as above stated, it would take that bulb thirty-two years to become 20,000; so it is quite evident that Mr. Pickstone's statement cannot be relied upon, or else that he found a large stock of it all ready, which is the most probable conclusion we can come to on the matter. As to Mr. Leeds having raised Sir Watkin (a most unlikely thing indeed, from my point of view), I believe there was no Longford Bridge Daffodil ready to be shown in flower before 1851; and supposing that an odd bulb had escaped from Mr. Leeds' fold in that year, and come into Mr. Pickstone's possession, and that he had grown it on first in Merionethshire, then in London, and lastly at Maesmynan (where I saw it in large clumps amongst Rhododendrons and in a wood, certainly not under favourable circumstances for the greatest possible increase), it could not possibly have increased to 20,000 in 1883. At the quickest rate of increase it would have taken thirty-two years, which would have just made it 1884, whilst at the most probable rate of increase it would have been 1898. I merely throw out these rough calculations with a view of suggesting a way by which this question may be elucidated, and not as absolutely accurate. I hope some of your readers will be able to carry the subject a little further, and give us a reliable basis upon which such calculations may be made. The results satisfy me that Sir Watkin is an old Daffodil, and not to be credited to any modern gardener, and I still believe it to be as old as the plate in Hale's *Eden. W. Brockbank.*

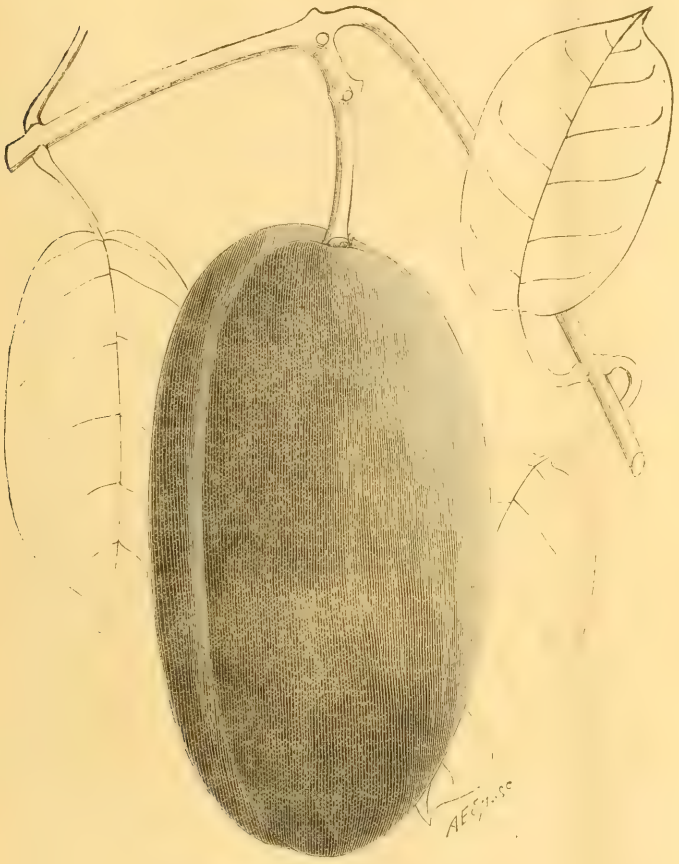


Fig. 188 Fruit of Stephanotis. (see p. 816.)

**Unseasonable Flowering of Fruit Trees.**—If your correspondent, Mr. C. Sheppard (p. 758), wanted to give a knock-down blow to the Quince and Paradise stocks, why did he not do it openly?—as he only surmises that that wonderful "pyramidal Pear in full flower" is "likely" to be worked on the Quince stock. Why, I thought every one had seen fruit trees in flower at unsuitable seasons before the Quince stock was used for Pears to the extent it now is; and if your correspondent wants proof of untimely flowering of fruit trees, let him spend an evening or two in search of the same in some of the back volumes of the *Gardeners' Chronicle*; he will find scores of instances there without going further afield. Again, if he means to keep abreast of the times in Apple and Pear culture, he must get rid of his prejudice for these stocks, for to a certainty they will be the fruit producers of the future, and, indeed, are at the present. "The proof of the pudding is in the eating," and I have had more than enough of Pear-growing on its natural stock, with its constant hard work, lots of pruning top and roots, and often little fruit when done. With trees on the Quince stock much of all this is avoided, and with a minimum of labour there is always a maximum of fruit, finer in colour and size, and equal in quality to the best grown on the Pear stock, and that without having to wait so long a time either for returns. *W. W. H.*

**Large Seed Potatos.**—Is the inference drawn from the product of the big 15 oz. palmate Potato planted at Chiswick last season a fair one? Certainly one of such peculiar form would have more than the ordinary quantity of eyes, and would therefore furnish more than the ordinary number of stems; and, planted in good soil and ample room, might reasonably be expected to produce a good crop. On the other hand, the greater portion of large tubers being of the ordinary shape would not throw more than the usual number of shoots, hence the produce would not so greatly exceed that from a similar set or tubers one-half the size. Had the palmate Potato been cut into five sets, and each one planted separately, no doubt the root produce would have reached 10 lb. or 12 lb., so that cutting would, in that case, have proved a gain. This simply shows that such an illustration of the results of planting big tubers as that given does not go for much. Again there is some slight misconception in the assumption, common enough no doubt, that the bigger the seed tuber the stronger must be the resulting growth. That does not always follow, because it is found that under no circumstances can a big tuber force or carry the growth of its shoots beyond a certain stage, unless aided by moisture to develope roots. Place any number of large tubers and also small ones upon a dry shelf in a warm house and close to the glass, and it will be found, if all moisture be carefully excluded, that in neither case will the shoots exceed 1 inch in length, let the tubers remain ever so long; thus evidencing that the innate power of the tuber to furnish nutriment to its shoots is limited. Add moisture so that roots are developed from the shoots, and growth will go on *ad libitum. A. D.*

## GRASSES—CHEMICAL COMPOSITION AND AGRICULTURAL VALUE

A most comprehensive and instructive treatise upon the agricultural value and chemical composition of the grasses of the United States, either native or naturalised, has been published by the Department of Agriculture in Washington, under the authorship of Dr. George Vasey, Botanist of the Department, and Clifford Richardson, assistant chemist. As the subject is one of such vast importance to all cultivators of the soil in this country as well as in America, we make no apology for bringing the matter before our readers.

Every thoughtful farmer, dairyman, or grazier realises the importance of the production on his land of a good supply of grasses for pasturage and for hay. Yet this is a subject which has been, and still is very sadly neglected by farmers generally.

The grasses which we have in cultivation were once wild, and are still such in their native homes.

The question is asked, Can we not select from our wild or native species some kinds which will be adapted to cultivation in those portions of the country which are not yet provided with suitable kinds? Many observations, and some experiments, especially those of Sir J. B. Lawes, at Rothamsted, Hertfordshire, have already been made, and if proper research be followed up by the agriculturist himself, there is no reason to doubt that proper species will be found for successful cultivation in all parts of our own country, as well as in the New World.

*Dactylis glomerata* (Cock's-foot or Orchard-grass).—This is one of the most popular grasses of Europe, of strong and luxuriant habit of growth. It is more highly esteemed and commended than any other species by both farmers and graziers—a most decided proof of its great value and wonderful adaptation to many soils, climates, and treatments. Yet strange to say, though growing in England for many centuries, it was not fully appreciated in this country till brought here from Virginia in 1764. But as in the case of Timothy-grass (Phleum pratense), soon after its introduction from America it came into high favour, and still retains its hold as a grazing and hay crop. It is less adapted for lawns or pleasure grounds, on account of its tufty habit of growth. It will grow well on any soil containing sufficient clay and not holding too much water. If sown alone on good soil it will furnish two or three cuttings the first year, according to season and manurial treatment, yielding from 1 to 3 tons of excellent hay per acre.

It is a peculiar feature with this grass, that it can be easily cured and handled; but after a year or two it is disposed to develope into clumps and leave much of the ground uncovered. This may be in great part obviated by thick sowing, using from 2 to 3 bushels of seed per acre. The gaps may further be prevented by sowing with it a few pounds of Poa anima, Phleum pratense, or Trifolium repens. After being cut it has been found to grow 6 inches in less than three days, and affords a large amount of aftermath. Sheep leave all other grasses if they can find this, and acre for acre it will sustain more head of stock than any other species of grass. Cut at the proper stage it makes good hay, which is easily masticated, digested and assimilated by animals.

The testimony that has been collected from all parts of the world for two centuries past establishes the place of this species among the best of our forage grasses, and there is not the shadow of a doubt that the interests of our graziers and dairymen would be greatly promoted by its more extended cultivation. It is always found in the rich old ox-pastures of England, where an acre of land can be relied on to fatten a bullock and four sheep. It is admirably adapted for growing in the shade, no grass being equal to it in this respect, except the rough-stalked Meadow-grass (Poa trivialis), hence its American name of Orchard-grass.

*Percentage Composition of Dactylis glomerata.*

| | Protein | Fibre. | Carbo-hydrates | Fat. | Ash. |
|---|---|---|---|---|---|
| Panicle not out .. | 15.07 | 28.76 | 50.66 | 4.12 | 10.29 |
| .. closed .. | 10.39 | 23.18 | 55.04 | 3.13 | 8.26 |
| full Bloom .. | 9.53 | 23.40 | 53.76 | 3.24 | 8.07 |
| After blooming .. | 8.25 | 27.26 | 52.05 | 2.83 | 9.01 |

*Poa pratensis* (smooth-stalked Meadow or Kentucky Blue-grass).—A well-known species, producing an abundance of long radical leaves. There are several distinctly marked varieties, which are much modified and improved by good cultivation. It is a species that has not a very high estimation in this country, but on the marly soils of America it is all in all, both for summer and for winter keep. It is indigenous to mountainous regions, and has been freely introduced into cultivation in the mixed herbage of grass-lands.

From the unexampled success this species has met with in Kentucky, it has acquired the name of Kentucky Blue-grass, although in New England it is known by the name of June-grass. In all the middle portions of the United States it forms the principal constituent of pastures, though its excellence is said to be rather depreciated in the Eastern States.

It has frequently been employed alone for curing into hay, but its chief value is exhibited as a pasture grass. It endures the frosts of winter better than most, and its long narrow leaves grow in such profusion that on rich soils it covers the ground with most luxurious foliage, but on poor sandy land it degenerates sadly.

It would prove a capital variety to introduce upon railway embankments owing to its running subterranean stems; from 4 to 6 lb. is recommended for an acre of land when sown with other grasses.

*Percentage Composition of Poa pratensis.*

| | Protein. | Fibre. | Carbo-hydrates. | Fat. | Ash. |
|---|---|---|---|---|---|
| Panicle just visible | 19.88 | 18.43 | 48.74 | 4.88 | 8.07 |
| .. spreading . | 10.21 | 22.83 | 51.32 | 4.07 | 5.51 |
| In full bloom .. | 12.61 | 23.76 | 51.43 | 3.90 | 8.30 |
| In seed .. .. | 12.49 | 24.34 | 52.54 | 4.25 | 6.38 |

*Poa trivialis* (rough-stalked Meadow-grass).—This species much resembles P. pratensis, but is chiefly distinguished by its fibrous roots, whereas P. pratensis produces runners from the root-stock, and is classified as one of the Couch-grasses. P. trivialis has been but little cultivated by itself, nor is it adapted for that purpose; it, however, forms an excellent pasture grass in mixed herbage, especially in shady meadows and by the borders of streams; it imparts a lively green, and is very useful in lawns and pleasure grounds.

*Phleum pratense* (Timothy or Cat's-tail grass) is one of the commonest and best known grasses. For a hay crop it is perhaps the most valuable. The height of the plant depends on soil and cultivation; in poor ground it may be reduced to one foot, while in good deep loam it readily attains to 3 or 4 feet, and in the United States it is said to occasionally grow to twice that height. It is a perennial grass, with fibrous roots, but the base of the culm is sometimes thickened and inclined to be bulbous. About the year 1720 it was taken to Maryland by Timothy Hanson, and received the name of Timothy-grass. It is now the favourite and prevailing meadow-grass over a large part of the United States. As a crop to cut for hay it is probably unsurpassed by any other species. Though somewhat coarse and hard, especially if allowed to ripen seed, yet if cut in blossom, or directly after, it is greatly relished by all kinds of stock, and especially by horses. The following table shows it to contain a large amount of nutritive matter:—

*Percentage Composition of Phleum pratense*

| | Protein. | Fibre. | Carbo-hydrates. | Fat. | Ash. |
|---|---|---|---|---|---|
| In leaf only .. | 12.54 | 19.91 | 54.11 | 4.51 | 8.63 |
| Flowering spikes visible .. .. | 11.70 | 21.03 | 57.20 | 3.19 | 6.41 |
| Before blooming .. | 10.83 | 22.03 | 54.13 | 3.03 | 9.82 |
| In early bloom .. | 10.20 | 22.50 | 57.21 | 3.85 | 6.04 |
| In full bloom .. | 9.90 | 21.03 | 58.04 | 4.88 | 6.15 |
| Early seeds .. .. | 12.10 | 22.20 | 51.72 | 4.40 | 9.58 |

We shall hope to continue the subject on a future occasion. *John J. Willis, Harfenden.*

## Obituary.

WE regret to announce the painfully sudden death of Mr. Edward K. Harrison, the publisher, of Merton House, Salisbury Square, the principal proprietor of *The Young Lady's Journal*. It is only a few months since a notice of Mr. Harrison's beautiful collection of Orchids at Shortlands appeared in those columns, he being a most ardent horticulturist, and his extensive grounds and ranges of glass being the receptacles of much that was new and beautiful in the floral world. In accordance with the popular taste Chrysanthemums formed regularly a very striking autumn display—one whose beauty was remarkable, the selection embracing all that was worthy of the grower's care.

—— MR. ALEXANDER PROTHEROE.—It is with much regret that we announce the death, on the 9th inst., of Mr. Alexander Protheroe, in his eighty-second year. Mr. Protheroe was brought up by his uncle, Mr. Thomas Jenkins, the owner of the once famous nurseries at Regent's Park, and to which business he would in all probability have succeeded had he chosen to remain with his uncle. Old Mr. Jenkins' strict disciplinarianism, however, was too severe for his nephew, who left to start affairs on his own account. He commenced business as a horticultural auctioneer and valuer, and with his knowledge of plants he soon succeeded in establishing a reputation. Mr. Protheroe continued to sell and value for nearly forty years. About sixteen years ago he handed over this branch of the business to Mr. G. F. Morris and to his son Mr. W. H. Protheroe, who continued to carry the business on under the old name. Mr. Protheroe then devoted his attention to his nurseries at Leytonstone, and continued in harness to the end.

## Variorum.

A CHRISTMAS ROSE.—The following piece of folklore is quite new to me, and may be so to most of your correspondents:—"Our maid Betty tells me, that if I go backwards without speaking a word into the garden upon Midsummer Eve, and gather a Rose, and keep it in a clean sheet of paper, without looking at it, till Christmas Day, it will be as fresh as in June; and if I then stick it in my bosom, he that is to be my husband will come and take it out." *F. C. Birkbeck Terry, in "Notes and Queries."*

ORANGES AND LEMONS IN SICILY.—Regarding the development of the green fruit trade in Sicily, it is stated that efforts have recently been made to form an Association to further its growth. Within the last few years this traffic, which is so important to the island, has suffered considerably. The fruit markets of the United States, of England, and of the Adriatic, have been overstocked by a superabundance of Oranges and Lemons supplied to them from Spain and Portugal, as well as Sicily, and in the United States this trade will eventually suffer still more from the rivalry which California is creating. It is to be hoped, for the interests of the grower of Oranges and Lemons, of the trader in these articles, as well as for those of the shipowners, mostly English, who are engaged in this particular trade, that the efforts now being made to give a more healthy tone to this branch of trade may be successful. Success very much depends on selection of the fruit, its speedy transmission to its destination, and regularity in reaching the same, so as to avoid overstocking the market. Amongst the commercial transactions the Association proposes to make is to establish agencies in different parts of the world, and to establish factories for the manufacture of Lemon-juice and other essences. In November, 1884, eight steamships left the port of Palermo for the United States laden with green fruit, numbering 24,811 boxes of Oranges, and 47,269 boxes of Lemons, being 4603 boxes of Oranges less, and 11,903 boxes of Lemons more, than in the same month in 1883. In December, 1884, thirteen steamships left the port of Palermo for the United States with green fruit on board they loaded at the above port, besides the fruit they had taken on board at other ports in the island, 80,298 boxes of Oranges, and 54,191 boxes of Lemons, showing, as compared with the same month in 1883, a diminution of 40,185 boxes of Oranges, and 63,234 boxes of Lemons. The green fruit crop of Spain having totally failed, it is hoped that Sicily will reap the benefit of this disaster, and towards the beginning of the present year prices had gone up in England. In January last sixteen British steamships and two Italian vessels were employed in the fruit trade with the United States, carrying a total of 54,778 boxes of Oranges, and 62,359 boxes of Lemons from Palermo; a diminution of 55,416 boxes of Oranges, and 62,359 boxes of Lemons. The exporters thus have kept back their produce, and not overstocked the market. While the preceding facts come from the British Consul in Palermo Vice-Consul Franck, of Catania, says, under the head of Oranges and Lemons:—"These important products, which a few years ago promised to become a branch of commercial resource to the island, have proved instead a failure to all those who turned their fields and grounds to Orange and Lemon groves. Prices in America (the chief country where exported) are so very low that it is more convenient for the producers to let the fruit rot on the tree than to go to the expense of packing it up for exportation."

VEGETABLE GLASS-PAPER.—Under the name of "Ursasa" the leaves of Ficus asperifolia, Miq., are used by the natives in Zanzibar for polishing sticks. As the specific name indicates, the surface of these leaves are very rough, and it is on this account that they are used for the same purpose as we use glass-paper. Some of these leaves having been sent to Kew by Sir John Kirk, I submitted them to Mr. Robson J. Scott, the well-known Boxwood block

maker, of Whitefriars Street, for his opinion as to the probability of their being found useful in producing a surface to the engravers' blocks. To this Mr. Scott replied that they could not compete with glass-paper at twenty-four sheets for 9*d.*, which has an uniform and durable surface. The difference between the action of the glass-paper and the Fig leaves is, that the former abrades the surface of the wood, while the latter only polishes it, showing that the cutting particles on the leaf must be very fine. *John R. Jackson, Museum, Kew.*

THE CULTIVATION OF USEFUL PLANTS IN TENERIFFE.—A recent commercial report from Teneriffe says that the great desideratum of the island is the discovery of some agricultural product to replace the "Tunira," or Cochineal Cactus. A few though feeble attempts were, however, made during the year in cultivating fibre-yielding plants, such as the Aloe, &c., which, although growing in wild profusion all over the land without care or culture, and requiring no outlay of capital, came to nothing beyond making use of the tall pole-like stems, which grow to a height of 12 to 15 feet, and when cut down and dried are split for water-pipes or courses for irrigating and other purposes, or as props of all kinds. The Sugar-cane, Coffee and Tobacco, continue to be successfully cultivated, still the yields are too insignificant to contribute as articles of export, with the exception of some Tobacco, which is shipped to Spain. Sugar is being manufactured both in Teneriffe and at Grand Canary, but as yet only for local consumption, while Coffee is consumed chiefly by the growers themselves.

# The Weather.

*STATE OF THE WEATHER AT BLACKHEATH, LONDON,* FOR THE WEEK ENDING WEDNESDAY, DECEMBER 22, 1885.

| MONTH AND DAY. | BAROMETER. Mean Reading at 32° and Sea Level. | BAROMETER. Departure from Average of 18 years. | TEMPERATURE OF THE AIR. Highest. | Lowest. | Range. | Mean for Day | Departure of Mean from Average of 18 years. | Hygrometrical Deductions from Glaisher's Tables 7th Edition. Dew Point. | Degree of Humidity Sat. = 100 | WIND. Average Direction. | RAINFALL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dec | In. | In. | ° | ° | ° | ° | ° | | | | In. |
| 16 | 30.30 | +0.49 | 45.0 | 31.0 | 14.0 | 38.7 | — 2.0 | 35.8 | 91 | S.E. : E.S.E. | 0.01 |
| 17 | 30.31 | +0.49 | 49.1 | 39.0 | 10.1 | 45.5 | + 5.1 | 41.2 | 95 | S.S.E. | 0.02 |
| 18 | 30.33 | +0.48 | 46.0 | 42.0 | 4.0 | 43.1 | + 3.0 | 42.0 | 96 | E. : E.S.E. | 0.00 |
| 19 | 30.07 | +0.24 | 38.6 | 37.0 | 1.6 | 37.7 | — 2.3 | 35.9 | 93 | E. : E.S.E. | 0.00 |
| 20 | 29.96 | +0.13 | 44.0 | 36.7 | 7.3 | 41.3 | + 1.6 | 40.1 | 96 | S.E. | 0.00 |
| 21 | 29.96 | +0.12 | 47.5 | 40.4 | 7.1 | 44.6 | + 5.3 | 42.6 | 94 | S.W. : S.S.E. | 0.00 |
| 22 | 30.14 | +0.30 | 46.2 | 42.0 | 6.2 | 43.0 | + 4.2 | 39.9 | 89 | N.W. : N.N.W | 0.02 |
| Mean | 30.15 | +0.32 | 45.2 | 38.0 | 7.2 | 42.1 | + 2.2 | 40.2 | 93 | Variable | 0.05 |

Dec. 16.—Very fine day.
— 17.—Dull day; darkness from noon till 5 P.M.; misty at night.
— 18.—Dull day; misty.
— 19.—Dull day.
— 20.—Dull day.
— 21.—Dull day: misty at night.
— 22.—Dull day; misty.

LONDON: *Atmospheric Pressure.*—During the week ending December 19 the reading of the barometer at the level of the sea decreased from 30.32 inches at the beginning of the week to 30.24 inches by 5 P.M. on the 13th, increased to 30.40 inches by 9 P.M., and decreased to 30.38 inches by 1 P.M. on the 14th, increased to 30.53 inches by 5 P.M. on the 15th, and was 30.21 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.41 inches, being 0.25 inch higher than last week, and 0.40 inch above the average of the week.

*Temperature.*—The highest temperature in the shade in the week was 49°.1, on the 17th; on the 19th the highest temperature was 38°.6 The mean of the seven high day temperatures was 44°.9.

The lowest temperature was 31° on the 16th, on the 18th the lowest temperature was 42°. The mean of the seven low night temperatures was 37°.

The greatest range of temperature in one day was 14°, on the 16th; the smallest on the 19th was 1°.6.

The general mean of the seven daily ranges was 7°.9. The mean temperatures were, on the 13th, 39°.2; on the 14th, 43°.1; on the 15th, 42°.6; on the 16th, 38°.7; on the 17th, 45°.5; on the 18th, 44°.1; and on the 19th, 37°.7; of these the 14th, 15th, 17th, and 18th were above their averages by 2°.4, 1°.9, 5°, and 3°.9 respectively, the rest were below by 1°.4, 2°, and 2°.3 respectively.

The mean temperature of the week was 41°.6, being 9°.6 higher than last week, and 1°.1 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun, was 67°, on the 15th. The mean of the seven readings was 52°.7.

*Rain.*—Rain fell on three days, to the amount of 0.04 inch,

ENGLAND: *Temperature.*—During the week ending December 19 the highest temperatures were 56°, at Newcastle, 54° at Truro and Leeds; the highest at Preston was 48°, at Bradford 48°.8, at Blackheath 49°.1. The general mean was 51°.3.

The lowest temperatures were 29°.6 at Wolverhampton, 30° at Cambridge, 31° at Blackheath; the lowest at Newcastle was 38°, at Leeds 37°, at Bradford 36°.8. The general mean was 33°.6.

The greatest ranges were 21°.6, at Cambridge, 20°.9 at Nottingham, 20°.4 at Wolverhampton; the least ranges were 12° at Bradford, 13° at Preston, 16°.9 at Bolton. The general mean was 17°.6.

The mean of the seven high day temperatures was highest at Truro, 51°.4, at Plymouth 49°.6, at Leeds 48°.7, at Blackheath the highest was 44°.9, at Wolverhampton 45°.2, at Bolton 45°.5, The general mean was 47°.1.

The mean of the seven low night temperatures was highest at Truro, 43°.3, at Plymouth 40°; at Liverpool 40°.5; and was lowest at Wolverhampton, 34°.7, at Nottingham 36°.2, at Bolton 36°.5. The general mean was 38°.5.

The mean daily range was greatest at Nottingham, 10°.6, at Wolverhampton 10°.5, at Bristol 10°.1, and was least at Liverpool, 6°.5, at Bradford 6°.7, at Preston 7°.1. The general mean was 8°.6.

The mean temperature was highest at Truro, 47°.3, at Plymouth 45°.3, at Newcastle 44°; and was lowest at Wolverhampton, 40°, at Bolton 41°, at Nottingham 41°.5. The general mean was 42°.8.

*Rain.*—The largest falls were 0.18 inch at Bristol, 0.11 inch at Preston, 0.10 inch at Nottingham. The smallest falls were 0.04 inch at Plymouth, Blackheath, and Wolverhamton, 0 05 inch at Brighton and Cambridge. The general mean was 0.06 inch. No rain fell at Bradford and Leeds.

JAMES GLAISHER, F.R.S.

## Answers to Correspondents.

*** OUR TELEGRAPHIC ADDRESS.—*Our correspondents are requested to bear in mind that in pursuance of the new telegraph regulations our Registered Telegraphic Address is* "GARDCHRON, LONDON," GARDCHRON *being written as one word. Telegrams (but not letters) thus addressed will reach the Editor or the Publisher without other address being needed than* "GARDCHRON, LONDON."

AUSTRALIAN HOLLY: *J. T. M.* The so-called native Holly of Australia is Lomaria ilicifolia; of course, it has nothing whatever to do with the Holly, but that is a peculiarity of popular names.

BOOKS: *R. W. A., Natal. Refugium Botanicum* (Van Voorst, Paternoster Row).—*G. L. The Clematis as a Garden Flower*, by Moore and Jackman (J. Murray, and Woking Nursery, Surrey).—*J. Beattie.* Get *British Apples*, published by Macmillan & Co., 2*s.* 6*d.*, paper—there is no cloth edition.

EARLY DAFFODILS: *Collins Bros. and Gabriel.*—The flowers of Narcissus pallidus præcox were very nice, and acceptable for the season.

HORTICULTURAL SOCIETY: *H. Mobbs.* According to the rules before us there is a clear distinction laid down between "annual subscribers" and "ordinary and cottager members." Again, the committee is ordered to consist of twelve "members," and the mode of electing such "members" is also specified. We are, therefore, of opinion that no annual subscriber can be made a member of the committee unless he becomes a member according to the provisions of rule 6. We can find no trace of the receipt of your fruit.

NAMES OF PLANTS: *W. S.* 1, Thuiopsis borealis; 2, Retinospora obtusa; 3, Juniperus virginiana; 4, a Juniper, which we cannot name.—*W. F. B.* As far as we can tell, Amaryllis fulgida.

PEAR CONFERENCE: *Errata.* In giving the return of the exhibits received from the various counties those of Dorset were omitted—the magnificent collection of 112 dishes exhibited by Mr. Pragnell having been included in those of Devonshire. For Lord Chester field, Derbyshire, read Lord Chesterfield, Herefordshire. *A. F. B.*

PINUS LEMONII: *J. L.* A dwarf variety of Pinus Pinaster, figured in Loudon's *Arboretum.*

UNHEALTHY GARDENIAS: *Z. Y. X.* The roots and moss were too dry to report on with certainty. No life was found on the root or soil round it. Some eggs in white flocculent matter were found on the moss, but it cannot be said what they are without rearing them. They have been put into a cell, and if they are reared the result will be made known. We fancy they are not Acarus eggs. In some moss wrapped in paper some mites were seen, but were in a stage when identity is difficult, but they may be Rhizoglyphus, which are root-eaters. If a root just when it began to fail, were dug up, wrapped in oil-silk, and put in a tin box, so that no evaporation and drying up could take place, we might be able to speak with more certainty.

SEEDS: *Waite, Nash & Co.*—The seeds are those of the Japan Wax-tree, Rhus succedanea, L.

WATER ANALYSIS: *Foster & Pearson.* The substances in the water make it quite unsuited to feed a boiler.

WORKS ON GREENHOUSE STOVE PLANTS: *J. C. G.* Choice Stove and Greenhouse Plants, by B. S. Williams, The Nurseries, Upper Holloway, N.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

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INTELLIGENT READERS, PLEASE NOTE.—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

## CATALOGUES RECEIVED.

LAWSON SEED AND NURSERY COMPANY, Edinburgh, N.B.—Forest and Ornamental Trees, Shrubs, &c.

H & F. SHARPE, Wisbech, Cambridgeshire—Wholesale Catalogue of Seeds.

WEBB & SONS, Wordsley, Stourbridge—Spring Catalogue, 1886.

J. VEITCH & SONS, King's Road, Chelsea, S.W.—Garden and Flower Seeds.

B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, N.—Flower and Vegetable Seeds.

CH. LORENZ, Erfurt, Germany—General Catalogue.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Vegetable and Flower Seeds.

HARRISON & SONS, Market Place, Leicester—General Seed Catalogue.

CARTER, PAGE & CO., 53, London Wall, London—Garden and Agricultural Seeds.

COMMUNICATIONS RECEIVED.—G. M., Brit. Mus.—W. S., Chester.—C. B. P.—J. M., Linn. Soc.—A. D. M.—Prof. Goodale, Boston, U.S.—P. Wolkenstein, St. Petersburg.—G. N. W. W.—Prof. Cornu, Paris. M. F.—W. Gardner.—Lucien Linden, Ghent—J. T. B.—C. Wissenbach, Cassell.—J. Wallis (thanks, letter to follow).—J. S—E. B.—H. Singleton.—C. W.—R. D.—T. C. Harrison & Sons.—J. O'B.—Penrhyn, South Yarra.—A. N.—A. H.—A. D. W.—S., Arnold Arboretum.—J. M. W.—A. D. W.—R. Bell.—J. F.

# Markets.

*COVENT GARDEN, December* 23.

HOTHOUSE fruit selling freely at higher quotations, otherwise our market is dull, considering this is Christmas week. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

| | *s. d.* | *s. d.* | | *s. d.* | *s. d.* |
|---|---|---|---|---|---|
| Apples, per ½-sieve | 1 0- | 3 0 | Pine-apples, Eng., lb. | 1 0- | .. |
| — Canadian, barrl. | 10 0- | 20 0 | — St. Michael, each | 3 0- | 8 0 |
| Grapes, per lb. | .. 1 0- | 4 0 | Pears, per dozen | .. 1 0- | 2 6 |
| Kent Cobs, 100 lb. | 22 0- | 27 0 | — per ½-sieve | .. 1 6- | 3 0 |
| Lemons, per case | .. 15 0- | .. | | | |

VEGETABLES.—AVERAGE RETAIL PRICES.

| | *s. d.* | *s. d.* | | *s. d.* | *s. d.* |
|---|---|---|---|---|---|
| Artichokes, per doz. | 5 0- | .. | Mushrooms, punnet | 1 0- | 1 6 |
| Beans, Kidney, lb. | 1 0- | .. | Mustard and Cress, do. | 0 4- | .. |
| Beet, red, per dozen | 1 0- | 2 0 | Onions, per bushel | 4 0- | .. |
| Broccoli, bundle | .. 0 9- | 1 0 | Parsley, dozen bunch | 2 0- | 3 0 |
| Cabbages, per dozen | 1 0- | .. | Parsnips, per dozen | 1 0- | .. |
| Capsicums, per doz. | 0 6- | .. | Potatos, per cwt | .. 4 0- | 5 0 |
| Carrots, per bunch | 0 6- | .. | ,, kidney, per cwt | 4 0- | 5 0 |
| Cauliflowers, per doz. | 2 0- | 3 0 | Salsafy, per bundle | 0 9- | .. |
| Celeriac, per root | .. 0 3- | .. | Scorzonera, p. bundle | 1 0- | .. |
| Celery, per bundle | 1 6- | 2 0 | Seakale, punnet | .. 2 6- | .. |
| Coleworts, doz. bunch | 4 0- | 6 0 | Shallots, per pound | .. 0 3- | 0 0 |
| Cucumbers, each | .. 1 0- | 1 6 | Spinach, per bushel | 4 0- | 6 0 |
| Endive, per dozen | 1 0- | 2 0 | Sprouts, per pound | 0 3- | .. |
| Herbs, per bunch | .. 0 2- | .. | Sprue, bundle | .. 1 0- | .. |
| Leeks, per bunch | .. 0 3- | 0 4 | Tomatos, per lb. | .. 0 6- | 1 0 |
| Lettuce, per dozen | 1 0- | 1 6 | Turnips, bunch | .. 0 6- | .. |

POTATOS.—Magnum Bonums, bad trade, 50*s.* to 80*s.*; Regents, 60*s.* to 80*s.* per ton; German Reds, 2*s.* to 2*s.* 6*d.* per bag.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Aralia Sieboldi, doz. | 9 0–18 0 | Ficus elastica, each | 1 6– 7 0 |
| Arbo. vitæ (golden), per dozen .. | 4 0–18 0 | Ferns, in variety, per dozen .. | 4 0–18 0 |
| — (common), dozen | 6 0–12 0 | Foliage Plants, various, each .. | 2 0–10 0 |
| Arum Lilies, dozen | 12 0–18 0 | Hyacinths, per doz. | 9 0–12 0 |
| Begonias, per dozen | 6 0–12 0 | — Roman, per pot | 1 0– 1 3 |
| Bouvardia, doz. | 12 0–18 0 | Marguerite Daisy, per dozen .. | 8 0–12 0 |
| Cineraria, per doz. | 12 0–12 0 | Myrtles, per dozen | 6 0–12 0 |
| Chrysanth., per doz. | 9 0–18 0 | Palms in var., each | 2 6–21 0 |
| Cyclamen, 12 pots | 12 0–24 0 | Pelargoniums, scarlet, per dozen .. | 6 0– 9 0 |
| Cyperus, per dozen | 4 0–12 0 | Poinsettia, per dozen .. | 12 0–18 0 |
| Dracæna terminalis, per dozen .. | 30 0–60 0 | Primulas, single, 12 pots .. | 4 0– 6 0 |
| — viridis, per doz. | 12 0–24 0 | Tulips, 12 pots .. | 8 0–12 0 |
| Erica, various, doz. | 12 0–24 0 | | |
| Euonymus, in var., per dozen .. | 6 0–18 0 | | |
| Evergreens, in var., per dozen .. | 6 0–24 0 | | |

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

| | s. d. s. d. | | s. d. s. d. |
|---|---|---|---|
| Abutilon, 12 bunches | 2 0– 4 0 | Lilium longiflorum, 12 blooms .. | 6 0– 8 0 |
| Acacia (Mimosa), Fr., per bunch .. | 0 6– 1 0 | Marguerites, 12 bun. | 3 0– 6 0 |
| Arum Lilies, 12 blms. | 6 0– 9 0 | Mignonette, 12 bun. | 3 0– 6 0 |
| Azalea, 12 sprays .. | 1 0– 1 6 | Pelargoniums, per 12 trusses .. | 1 0– 1 6 |
| Bouvardias, per bun. | 0 6– 1 0 | — scarlet, 12 trusses | 0 9– 1 0 |
| Camellias, 12 blms. | 3 0– 6 0 | Poinsettia, 12 blms. | 4 0– 8 0 |
| Carnations, 12 blms. | 1 0– 3 0 | Roses (indoor), per dozen .. | 1 0– 3 0 |
| Chrysanth., 12 blms. | 2 0– 4 0 | — Tea, French, doz. | 0 6– 1 0 |
| Cyclamen, doz. blms. | 0 0– 0 8 | — red, French, doz. | 1 0– 2 0 |
| Epiphyllum, dozen blooms .. | 0 6– 1 0 | Tropæolum, 12 bun. | 2 0– 3 0 |
| Eucharis, per dozen | 5 0– 8 0 | Tuberoses, 12 blms. | 1 0– 1 6 |
| Gardenias, 12 blooms | 5 0– 9 0 | Tulips, doz. blooms | 1 0– 1 6 |
| Hyacinths, Rom., 12 sprays .. | 1 0– 2 0 | Violets, 12 bunches | 1 0– 1 6 |
| Lapageria, white, 12 blooms .. | 2 0– 3 0 | — Czar, bunch | 1 0– 2 0 |
| — red, 12 blooms .. | 1 0– 2 0 | — Parme, French, per bunch.. | 4 0– 5 0 |

*** *These prices will vary much during next week.*

## SEEDS.

LONDON: *Dec.* 23.—The seed market to-day presented quite a holiday appearance, all business in farm seeds being apparently postponed until the New Year. As regards values, there is a firm feeling all round, and a strong healthy demand in the ensuing spring is confidently looked for. Hemp and Canary seed are quiet, and values remain unchanged. Feeding Linseed is neglected. Blue boiling Peas and Haricot Beans sell slowly on former terms. Other articles call for no remark. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

## CORN.

MARK LANE: *Dec.* 21.—Quotations for Wheat can hardly be altered, because there is nothing doing to test them; but lower offers for quantity would, probably, not be refused. For American flour rather easier rates have been taken. Grinding Barley is inactive and unchanged in value. Beans and Peas are reported as steady.

*Average prices* of corn for the week ending Dec. 19: —Wheat, 30*s.* 5*d.*; Barley, 29*s.* 3*d.*; Oats, 18*s.* For the corresponding period last year:—Wheat, 31*s.* 5*d.*; Barley, 31*s.* 3*d.*; Oats, 19*s.* 4*d.*

## FRUITS AND VEGETABLES.

COLUMBIA (East London): *Dec.* 21.—The demand for good Potatos is fair, prices moderate. Trade for other qualities slow. Quotations:—Apples, 2*s.* to 5*s.*, and Pears, 2*s.* to 5*s.* per bushel; Drumhead Cabbages, 3*s.* to 9*s.* per tally; Savoys, 4*s.* to 7*s.* do.; Spinach, 2*s.* 6*d.* to 3*s.* per sieve; Brussels Sprouts, 3*s.* 6*d.* to 4*s.* do.; Cauliflowers, 2*s.* to 3*s.* per dozen; bunch greens, 3*s.* to 3*s.* 6*d.* per dozen; do. Turnips, 2*s.* 6*d.* to 3*s.* do.; do. Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; do. Beetroots, 2*s.* 6*d.* to 3*s.* 6*d.* do.; do. Celery, 4*s.* to 8*s.* per dozen bundles.

## POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 22.—Fair demand for best samples, but inferior sorts very unsaleable. Regents, 80*s.* to 100*s.*; Magnum Bonums, 70*s.* to 90*s.*; Champions, 60*s.* to 70*s.*; Victorias, 60*s.* to 80*s.* per ton.

COLUMBIA (East London): *Dec.* 21.—Champions, 50*s.* to 60*s.*; Victorias, 50*s.* to 60*s.*; Regents, 55*s.* to 65*s.*; Magnums, 50*s.* to 70*s.* per ton.

*Imports.*—The imports into London last week consisted of 71 packages from Hamburg, 227 Ostend, 10,602 bags Hamburg, 4 Ostend, 382 Boulogne, 41 bags Rotterdam.

## HAY.

WHITECHAPEL: *Dec.* 22.—Supplies continue large and the trade very dull. Prices have not quotably altered. Quotations:—Clover, prime, 95*s.* to 105*s.*; inferior, 60*s.* to 85*s.* Hay, prime, 70*s.* to 80*s.*; inferior, 50*s.* to 60*s.* Straw, 28*s.* to 37*s.* per load.

CUMBERLAND (Regent's Park): *Dec.* 22.—A fair supply, with no improvement in ptices. Quotations:—Clover, best, 90*s.* to 105*s.*; second, 70*s.* to 90*s.* Hay, best, 72*s.* to 83*s.*; second, 60*s.* to 70*s.* Straw, 30*s.* to 36*s.* per load.

**Government Stock.**—Consols closed on Monday at 99⅛ to 99⅛ for delivery, and 99⅛ to 99⅞ for the account. Tuesday's prices were as on the previous day for delivery, and 99⅛ to 99⅜ for the account. The final quotations on Thursday were, for delivery, 99⅛ to 99⅜, and 99⅜ to 99½ for the account. These quotations are ex div,


# THE COLONIAL MANURE.

*Unequalled for Excellence of Quality and Productive Powers.*

| | s. | d. | |
|---|---|---|---|
| Supplied in Tins, | 1 | 0 | each. |
| ,, ,, | 2 | 6 | ,, |
| ,, ,, | 5 | 0 | ,, |
| Or in Bags, ¼ cwt. | 12 | 0 | per Bag. |
| ,, ½ ,, | 20 | 0 | ,, |
| ,, 1 ,, | 37 | 6 | ,, |

**Special Prices to the Trade on application.**

The COLONIAL MANURE being powerful and lasting in its effects, very little need be used; consequently it will be found more economical than any other Chemical Manure.

The COLONIAL MANURE is to be obtained from all Nurserymen and Seedsmen in the United Kingdom and the Colonies.

*Sole Proprietors and Manufacturers,*

**HAYMAN & BENJAMIN,**
**3, 4, 5, 6, CAMOMILE STREET,**
**LONDON, E.C.,**
*who only supply the Wholesale Trade and Export Merchants.*

LEMON OIL INSECTICIDE, Improved. —Soluble in water. The cheapest, safest, and most effectual Insecticide extant. Harmless to flowers and foliage. Instant death to Mealy Bug, Scale, Thrips, Red Spider, Green and Black Fly, American Blight, Mildew, Ants, &c. As a Winter Dressing unequalled. See circulars, with testimonials from many of the leading gardeners on its behalf. Sold by most of the leading Nurserymen, Seedsmen, and Garden Manure Manufacturers, in tins—per pint, 1*s.* 6*d.*; quart, 2*s.* 9*d.*; half gallon, 5*s.*; gallon, 9*s.* Directions for use with each tin.

Wholesale, J. W. COOKE, Market Place Winsford, Cheshire; also Messrs. OSMAN AND CO., 15, Windsor Street, Bishopsgate, London, E.C.; and CORRY, SOPER, FOWLER AND CO., 18, Finsbury Street, E.C.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

PURE WOOD CHARCOAL
FOR
VINE BORDERS, FRUIT TREES, STRAWBERRIES, ROSES, FLOWER BEDS, POTTING PURPOSES,
AND GENERAL HORTICULTURAL PURPOSES.
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HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue Free per post, of every Horticultural Requisite.
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Established 1834.

ASTON CLINTON STRAW MATS.—The Warmest Coverings for Pits and Frames. Sizes: 6 ft. 6 in. by 4 ft. 9 in., at 2*s.*; 6 ft. 6 in. by 4 ft. 6 in. at 2*s.* 2*d.*; 6 ft. 6 in. by 7 ft., at 2*s.* 9*d.* Apply to
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RUSSIA MATS and RAFFIA FIBRE.—Before Buying, write for JAS. T. ANDERSON'S Catalogue, which will be forwarded post-free on application.
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J. BLACKBURN AND SONS are offering ARCHANGEL MATS at a lower rate than for several years for present orders. Also PETERSBURG MATS and MAT BAGS. Price and samples on application.
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*NEW PRICE LIST.*

"CHAMPION PRIZE" GALVANISED WIRE NETTING.



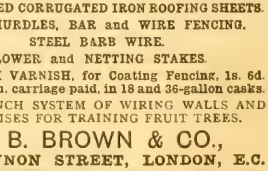
REDUCED PRICES—per Roll of 50 yards.

| | QUALITY. | Gauge | 12 in. | 18 in. | 24 in. | 30 in. | 36 in. | 48 in. | 72 in. |
|---|---|---|---|---|---|---|---|---|---|
| | | | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| 2-in. mesh. Poultry. | Light | 19 | 3 0 | 4 6 | 5 0 | 6 0 | 7 6 | 9 0 | 12 0 |
| | Medium | 18 | 3 6 | 5 3 | 7 0 | 8 9 | 10 6 | 14 0 | 21 0 |
| 1½ in. mesh. Rabbit. | Light | 19 | 4 0 | 6 0 | 8 0 | 10 0 | 12 0 | 16 0 | 24 0 |
| | Medium | 18 | 4 6 | 6 9 | 9 0 | 11 3 | 13 6 | 18 0 | 27 0 |
| 1½in. mesh. Small Rabbit. | Light | 19 | 4 6 | 6 9 | 9 0 | 11 3 | 13 6 | 18 0 | 27 0 |
| | Medium | 18 | 5 3 | 7 10 | 10 6 | 13 2 | 15 8 | 21 0 | 31 4 |

**GALVANISED CORRUGATED IRON ROOFING SHEETS.**
**IRON HURDLES, BAR and WIRE FENCING.**
**STEEL BARB WIRE.**
**FLOWER and NETTING STAKES.**
**JET BLACK VARNISH, for Coating Fencing, 1s. 6d. per gallon, carriage paid, in 18 and 36-gallon casks.**
THE FRENCH SYSTEM OF WIRING WALLS AND TRELLISES FOR TRAINING FRUIT TREES.

**J. B. BROWN & CO.,**
**90, CANNON STREET, LONDON, E.C.**

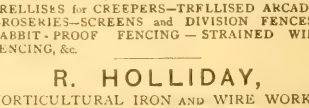
ESPALIER COVERED WAY.



GARDEN ESPALIERS—WALLS WIRED—IRON and GLASS WALL COVERS, or COPING—PEACH and VINE TRELLISES—FERN WALL TRELLIS—WIRE TRELLISES for CREEPERS—TRELLISED ARCADES—ROSERIES—SCREENS and DIVISION FENCES—RABBIT-PROOF FENCING—STRAINED WIRE FENCING, &c.

R. HOLLIDAY,
HORTICULTURAL IRON AND WIRE WORKS,
**The Pheasantry, Beaufort Street, Chelsea, S.W.**

Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.




The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price-Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

STOVES.
Terra-Cotta! Portable! For Coal!
**ROBERTS'S PATENT,**
**for Greenhouses, Bedrooms, &c.**
Pure and ample Heat 24 hours or longer for about 1*d.*, without attention. Pamphlet and authenticated Testimonials sent. In use daily at Patentee's—
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(LIMITED)
Have attached to their extensive works a large Joinery Department with the late-t and most improved Machinery, for the Manufacture of
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*at extremely moderate prices.*
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**ALFRED SLATER, General Manager, GLOUCESTER.**

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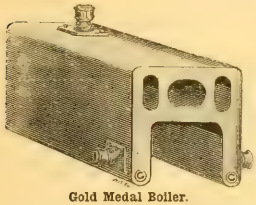


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STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.
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CONTRACTORS TO HER MAJESTY'S WAR DEPARTMENT.

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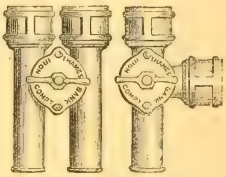
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HOT-WATER BOILERS, PIPES, and CONNECTIONS,
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Price List on application Free.

Hot-water and Hot-air Apparatus erected Complete, or the Materials supplied.



Patent Reliance Rotary Valves.

AWARDED the GOLD MEDAL (against all England) for CASHMERES at the Bradford Technical Exhibition, opened by H.R.H. the Princess of Wales.

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**OUR ALL WOOL CROSS-WARP SERGES**, from 11½*d.* to 1*s.* 11½*d.* per yard, are practically untearable either way of the cloth, and are warranted to wear and always look well;
**OUR GOLD MEDAL CASHMERES**, from 1*s.* 11*d.* to 3*s.* per yard;
**MERINOES**, from 2*s.* to 3*s.* 6*d.* per yard;
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**CORDS**, from 6*d.* to 1*s.* 6*d.* per yard
All the above are PLAIN and COLOURED.

Ladies are invited to send for Patterns from any part of the World, when they will immediately receive a complete set with Illustrated Circular, POST-FREE. Purchases of £1 carriage paid to any Railway Station in the United Kingdom, or sent by Parcel Post if desired.



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Sole Spinners and Manufacturers, The Mills, DARLINGTON.



Greenhouses of every kind designed, erected, and heated. Constructed so as to obtain, with the least obstruction to light and sun, the greatest strength and rigidity, at prices which, owing to unusual facilities, defy competition.

Gentlemen will do well to obtain an Estimate from us, for which no charge is made, before placing their orders elsewhere.

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| 9 „ ... | 0 | 5 | 6 | 20 „ ... | 0 | 11 | 0 |
| 10 „ ... | 0 | 6 | 0 | 21 „ ... | 0 | 11 | 6 |
| 11 „ ... | 0 | 6 | 6 | 22 „ ... | 0 | 12 | 0 |
| 12 „ ... | 0 | 7 | 0 | 23 „ ... | 0 | 12 | 6 |
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T. WOOD, Hot-water Engineer,
RUDGEWAY HOUSE, EASTVILLE, BRISTOL.
Agents Wanted to sell Wood's Boilers.

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GREENHOUSES, GARDEN FRAMES.
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10 ft. long, 8 ft. wide, 10 ft. 6 in. high.
Price complete, with staging, coloured glass, gutter, and Loughborough Hot-water Apparatus. Erected complete within 15 miles of London Bridge, or delivered carriage free to any station in England.
£25.
LARGER SIZES, complete as above,
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ILLUSTRATED SHEETS of Conservatories, Greenhouses, &c., with Prices for Erecting and Heating, FREE ON APPLICATION.
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DEANE & CO.,
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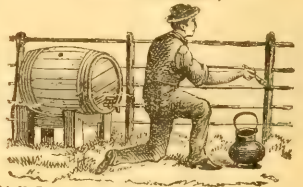
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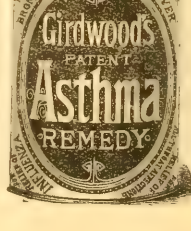
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14×12 16×12 18×12 20×12 16×14 18×14 20×14
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21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.
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GREENHOUSE GLASS, 1½*d.* per foot, in boxes. Suitable for Frames, Conservatories, &c. PATENT NON-POISONOUS PAINT for Greenhouses, 6*d.* per lb., or 42*s.* per cwt.—B. LAMB AND CO., Glass, Lead, Paint, and Varnish Merchants, Builders, and Decorators, Sundrymen, 8, Bucknall Street, London, W.C.

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HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)

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Sold in Casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s* 8*d*. per gallon carriage paid to any Station in the Kingdom.
UNSOLICITED TESTIMONIAL.
"*Piercefield Park, June 21, 1876.*—Sirs, I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."
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H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.
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HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 73, Elmbank Street, Glasgow.

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GRATEFUL—COMFORTING.
COCOA

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GIRDWOOD'S
PATENT ASTHMA REMEDY.
Newest and most wonderful DISCOVERY.
Cures perfectly, without medicine, all such diseases as Bronchitis, Whooping Cough, Influenza, Hay-Fever, Diphtheria, &c.


2*s*. 3*d*. per box, with full directions for use.
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**HEATING APPARATUS.**

*Most efficient and cheapest in existence.*

Requires no sunk stokehole; will last all night without attention; will burn house coupers; costs nothing for fuel; is a tenant's fixture; any one can fix it; a domestic servant can stoke it. Price of Boiler to heat:—

55 feet 4-inch Pipe .. £2 10s.
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**Complete Apparatus, with 2 rows of 4-inch Pipe, from £4 12s. 6d.**

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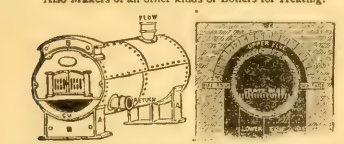

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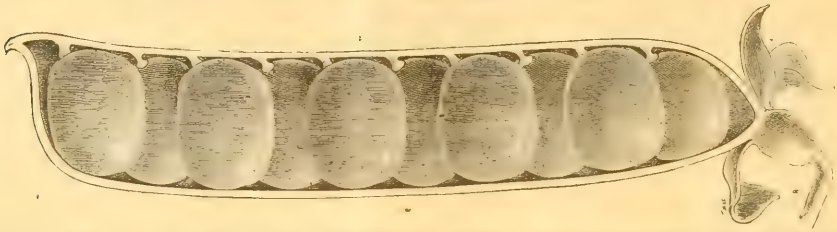
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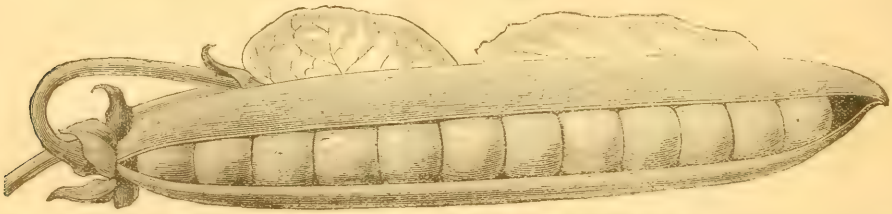
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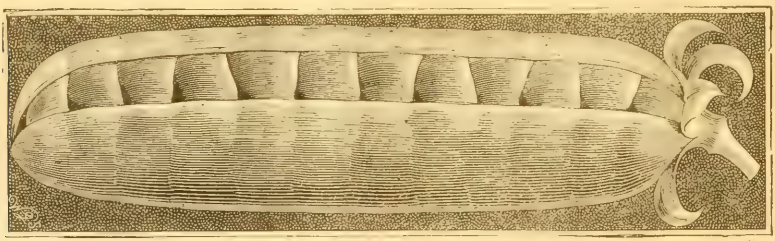
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